

## JRC SCIENCE FOR POLICY REPORT

# Revision of the European Ecolabel Criteria for: WOOD-, CORK-, AND BAMBOO-BASED FLOOR COVERINGS

Final Technical Report

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## Executive summary

The Preliminary Report presents the research carried out on areas related to the product groups covered by the EU Ecolabel on WOOD, CORK AND BAMBOO BASED FLOOR COVERINGS. The report provides background information that underpins to the new criteria proposals.

### Policy context

The EU Sustainable Consumption and Production and Sustainable Industrial Policy (SCP/SIP) policy is an integral part of the Resource Efficiency flagship initiative of the Europe 2020 Strategy. This policy aims to reduce the environmental impact of production and consumption and contribute to the decoupling of the economic growth from environmental degradation.

The EU Ecolabel is the main instrument included in this Plan aiming at promoting products with the best environmental performance. The EU Ecolabel is a voluntary tool awarded to a product through a process in which an applicant has to demonstrate that the specified Ecolabel criteria for a particular product group are met. The criteria the products must meet are being developed based on a life-cycle assessment of the most important environmental impacts on a product group basis.

This study is being carried out by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS). The work is being developed for the European Commission's Directorate General for the Environment. The report will be used as a consultation document to provide information to the interested parties on the proposed criteria changes and significant environmental issues.

### Key conclusions

This background document for the revision of the criteria for EU Ecolabel for WOOD, CORK AND BAMBOO BASED FLOOR COVERINGS is meant to provide the final rationale for each of the voted EU Ecolabel criteria. Each criteria rationale includes the results of stakeholder surveys, market analysis and known concerns with existing criteria, including changes in hazardous substance classification of commonly used ingredients. As policy-relevant recommendations, it points out where there is scope for strengthening the EU Ecolabel and which criteria could be removed, amended or further developed.

The information contained in this document provides an overview of changes to the WOOD, CORK AND BAMBOO BASED FLOOR COVERINGS market since the adoption of the first EU Ecolabel criteria set for Wooden floor coverings, and a technical analysis to understand where the greatest environmental impacts arise in their life cycle.

### Main findings

The main changes in the EU Ecolabel criteria revision are shown in Table 3 This table shows the simplification process that the EU Ecolabel criteria for wooden floor coverings have undergone in along this revision process.

**Table 1 Comparison of the criteria structure**

	<b>Current EU Ecolabel</b>	<b>Proposed EU Ecolabel criteria</b>
<b>Raw materials</b>	Sustainable forest management	Wood, cork and bamboo-based materials
	Recycled wood and plant materials	
	Impregnating substances and preservatives	
	Genetically modified wood	
<b>Use of dangerous substances</b>	Dangerous substances for the raw wood and plant treatments	Contaminants in recycled wood, cork and bamboo
	Wood preservatives	Biocidal products

	Biocides	
	Adhesives - VOC content	VOCs content in other used substances and mixtures
	Formaldehyde	
	Dangerous substances in the coating and surface treatments	VOC content in surface treatment
		Heavy metals in paints, primers and varnishes
	Plasticisers	Plasticizers
		Halogenated organic compounds
		Flame retardants
	Aziridin and polyaziridin	
<b>Production process</b>	Energy consumption	Energy consumption in the production process
	Waste management	
<b>Use phase</b>	Release of dangerous substances from the final product	Emissions of formaldehyde from the floor coverings and core boards
		Emission of VOCs from the floor coverings
		Reparability and extended product guarantee
<b>Packaging</b>	Packaging	
<b>Fitness for use</b>	Fitness for use	Fitness for use
<b>Consumer information</b>	Consumer information	Consumer information
	Information appearing in the EU Ecolabel	Information appearing in the EU Ecolabel

Several current EU Ecolabel criteria have been deleted in this revision due to different reasons.

- The first one is the requirement of using non-GMO wood. It has been removed because this requirement is one of the basic requirements to award a sustainable wood, cork or bamboo certification. However, this remark has been introduced in the wording of the criterion dealing with the origin of wood, cork and bamboo materials.
- The criteria requiring a waste management system has also been removed to bring the scheme in line with other EU Ecolabel criteria sets and due to the uncertainties and difficulties that this criterion showed for verification.
- The criterion on packaging has been removed due to the low relevance of the environmental impacts caused by the packaging in comparison to the overall environmental impact of this product.

Finally, other criteria such as those dealing with the use of chemicals and raw materials have been reorganized, merged or separated trying to better accommodate and address the current market conditions. These changes are commented in more detail, where appropriate, along this report

# 1 INTRODUCTION

This document is intended to provide the background information for the revision of the European Ecolabel criteria for Wooden Floor Coverings. The study has been carried out by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS) with the technical support from Life- Cycle Engineering (LCE) during the first steps of this revision. The work is being developed for the European Commission's Directorate General for Environment.

The main purpose of this document is to evaluate the current criteria and discuss if the criteria are still relevant or should be revised, restructured or removed. This document is complemented and supported by the preliminary report<sup>1</sup> released in September 2014, which consists of a series of chapters addressing:

- scope and definition
- market analysis
- technical analysis
- improvement potential

and a first, second and third technical reports (TR1.0, TR2.0 and TR3.0, respectively) that were released in September 2014, April 2015 and October 2015 including the first, second and third criteria proposals, as well as the feedback from the stakeholders of the project and further research carried out by this group of authors. The first draft version of the technical report (TR1.0) was built the basis for the first Ad-Hoc Working Group (AHWG) meeting which took place in October 2014 in Seville (Spain). The second draft version of the technical report (TR2.0) was the basis of the discussions held during the second AHWG meeting which was placed in May 2015 in Brussels (Belgium). The discussions held in both AHWG meetings are publicly available <sup>i</sup>.

Moreover, during the course of the revision process two general questionnaires on the scope and improvement potential as well as queries specific to certain criteria were sent out to selected stakeholders. The target groups were industry, Member States, NGOs and academia representatives. The specific information, views and suggestions arising from questions asked were reflected in the preliminary report and were taken into consideration as far as possible in the proposals for the criteria revision.

The current revised technical report (TR4.0) provides an update of the criteria development process based on new information (stakeholder's discussion at the 2<sup>nd</sup> AHWG meeting, further stakeholder inputs following the meeting, views and suggestions arising from the second questionnaire and further desk research) and specific comments on the final draft criteria presented in the EU Ecolabel Board meeting that was held in Brussels in January 2016. The structure of this technical report has been slightly changed from previous technical reports. It consists of the following parts:

- **Introduction:** this section describes the goal and content of the document, the sources of information and the coming steps in the project. This section aims at being a link between the information and deliverables already published and the new draft of the criteria. Among the different sources of information listed and summarized in this section especial attention should be paid to the link between key environmental aspects of this product group and the criteria proposals.
- **Assessment and verification:** this section includes the desirable requirements that a laboratory should fulfil to be qualified to conduct the proposed tests. Although certification is not mandatory in this proposal there are several well-known standards that guarantee the reproducibility and repeatability of the testing and that are an asset for those that comply with.

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<sup>11</sup> [http://susproc.jrc.ec.europa.eu/wooden\\_floor\\_coverings/documents.html](http://susproc.jrc.ec.europa.eu/wooden_floor_coverings/documents.html)

- **Criteria proposal:** this section presents the last and most updated EU Ecolabel criteria proposals for the product group "Wooden floor coverings". The proposal is presented in a blue box and followed by a brief rationale. The rationale is based on the most relevant aspects found out along the project and not only in those investigated since the 2<sup>nd</sup> AHWG meeting. A tracking of the development of the criteria can be found in the section "Table of Comments" and in the previous technical reports (TR1.0, TR2.0 and TR3.0). **Changes in the criteria text compared to the version published in October 2015 (TR3.0)** are marked in blue colour.
- **Table of comments:** this section consists of all the comments and feedback reported by the stakeholders from the 2<sup>nd</sup> AHWG meeting up to today and presented in an anonymous way. The section is completed by the assessment of the stakeholder's feedback, further research on the points highlighted by the participants and an explanation on how they triggered the changes on the criteria leading to the current criteria proposal.

Comments were classified under three categories:

- a) *Accepted:* the comment is fully integrated in the new criterion wording
- b) *Partially accepted:* this category includes those comments that either point out at a good idea that is integrated in the new criterion wording or suggest some modifications of the criteria wording and that even if they are not literally introduced, they are partially introduced.
- c) *Rejected:* the comment is not on board in the proposal. This fact can be due to different reasons such as lack of standards to perform the measurement, creation of market restrictions/distortions, etc
- d) *Acknowledged:* this category includes comments that supply information to the report but that they don't lead to modification in the criteria wording

## 1.1 METHODOLOGY AND SOURCES OF INFORMATION

The revision of the EU Ecolabel criteria for Wooden Floor Coverings and the revision of the scope and definition are based on the most recent literature publicly available. No additional research (e.g. LCA studies in house) was carried out in this project.

Regarding the scope and definition of the product group, different information sources such as publications in scientific journals, publications by industry associations and companies, national and international legislation and voluntary schemes were revised. These publications led the authors to identify the most relevant environmental impacts of each product included into the product group.

Of remarkable relevance was the information related to the market and the changes that have been performed during the last years. This information was mainly provided by official statistics of end products such as Prodcom and by the European producers associations.

The revision of the environmental impacts of the products is based on LCA and environmental assessment studies published by independent institutions and the industry. Environmental product declarations (EPDs) that provide LCA results were widely reviewed. LCA evaluates a product's environmental impacts throughout its various life stages from raw material sourcing and extraction through end-of-life disposal or recycling and provides a comprehensive picture of the amount of energy, water, and materials consumed in the production and use of a product. The results reported in a EPD ensures that manufacturers follow a standard method and format to inform/report the life cycle data with clarity, accuracy and getting verified product information.



All the revised studies were either LCA from "cradle to gate" or from "cradle to grave". The large number of studies, their soundness and coverage led the authors conclude that it was no need to carry out additional studies on this aspect.

Finally, the revision of the EU Ecolabel criteria largely considers the personal information provided by the stakeholders during the two AHWG meetings held as well as during bilateral meetings. The information related to the revision of the EU Ecolabel criteria is summarized in the series of TRs while the information described above is mainly included in the preliminary report.

## **1.2 SUMMARY OF THE PRELIMINARY REPORT and LINK TO THE EU ECOLABEL CRITERIA**

This section starts with the product name, scope and definition of the product group and subsequently summarizes the key market data and environmental impacts of the floor coverings and the relation to the revised criteria.

The product name, scope and definition state clearly what is included in this product group setting the boundaries of the study and reflecting the current situation of these products in Europe.

The key environmental impacts were studied considering the boundaries previously mentioned. The environmental impacts were assessed by means of LCA and non-LCA studies and identify the main hotspots along the life cycles of the product.

EU Ecolabel criteria aim at reducing the environmental impacts of the products along their whole life cycle. Therefore, the EU Ecolabel criteria should be linked to the main identified environmental hotspots and should be proportional and feasible (suitable benchmarks and verifying wordings). Table 1 included in section 1.2.2 shows the relationship between the environmental hotspots and the revised EU Ecolabel criteria including a short explanation on how it is tackled.

### **1.2.1 Product group name, scope and definitions**

<b>Product group name:</b>
Wood-, cork- and bamboo- based floor coverings
<b>Product scope</b>
The product group of "wood-, cork- and bamboo-based floor coverings" shall comprise indoor floor coverings, including wood floorings, laminate floorings, cork floor coverings and bamboo floorings which are made, for more than 80 % by weight of the final product, from wood, wood-based, cork, cork-based, bamboo and bamboo-based materials or fibres, not containing synthetic fibres in any of the composing layers. It shall not comprise wall coverings, coverings for external use, coverings with a structural function or levelling compounds.
<b>Product definitions</b>
1. "wood flooring" means an assembly of wood elements pre-assembled boards or parquet panels which constitute the wearing surface of the floor 2. "cork floor coverings" means floor coverings made of granulated cork mixed

## Product definitions

with a binder, and then cured, or several layers of cork, agglomerated or veneer, that can be pressed together with glue and are intended to be used with a coating;

3. "bamboo floor coverings" means floor coverings made of bamboo in solid pieces or in agglomerates mixed with a binder;

4. "laminated flooring" means a rigid floor covering with a surface layer consisting of one or more thin sheets of a fibrous material (usually paper), impregnated with aminoplastic thermosetting resins (usually melamine), pressed or bonded on a substrate, normally finished with a backer

### **Rationale of proposed name, scope and proposed definitions**

#### **a) Rationale of proposed name**

The name of the product group has undergone several changes along the revision process. Initially it was proposed to be changed from "*wooden floor covering*" due to the following reasons:

- the name does not reflect the inclusion of cork and bamboo floor coverings. Cork and bamboo are not wooden materials.
- laminated floorings are made of wood and other materials being misleading for the consumers to call them "wooden" floor coverings. Additionally, the laminated floorings can also be made with cork or bamboo, materials that do not fall under the "wooden" concept.

Several names have been proposed along the revision process trying to better reflect the four product groups included in the scope.

For example, the name "wood, wood-based, cork, cork-based, bamboo and bamboo-based floor covering" was suggested after the 2<sup>nd</sup> AHWG and considered a very accurate name that perfectly reflects the presence of all the materials that can take part in the floor coverings. In this sense, the name aims at better informing about materials such as cork, bamboo and their derivative materials by means of the term based so that consumers don't have misleading information.

However, the name was considered to be too long. For this reason, the name "wood-, cork-, and bamboo-based floor covering" was suggested. The advantages of this name is the shortness compared to the previous one while still keeping the name of other materials the floorings can be made of. As a drawback, the accuracy reflecting the materials the floorings can be made of is in between the current name and the intermediate proposed name.

#### **b) Rationale of proposed scope**

The proposed change concerning the mass of wood-, cork and bamboo-based materials threshold is due to the changes in the European market in the recent past. Long discussions regarding this issue have been held along the revision process.

Nowadays the dominant product in the European market is the laminated flooring (representing 70 % of the market share<sup>i</sup>). This product consists of several layers of mainly wood-based material along with other materials (eg paper or melamine). Its average wood-based material content amounts to 75-80 % in mass having no evidence that the higher the wood-based material content in the product the better its environmental performance is. In order to prevent a possible worsening environmental performance an exclusion of synthetic fibers is proposed in any composing layer.

Initially, a decrease of the threshold regarding the wood, wood-based, cork, cork-based, bamboo or bamboo-based material in the floor coverings was proposed by IPTS with the aim of opening the scheme to those laminate floorings with a very high wood-based material content. The proposal was partially supported by the stakeholders.

On one hand, some stakeholders suggested that decreasing the threshold and opening the scheme to laminate floorings, misleading information can be communicated to the consumers since there is only one EU Ecolabel for all types of products. Some other stakeholders also suggested that a decrease in the wood, cork or bamboo-based materials will lead to a lower environmental performance of the products, although no scientific evidence has been proved to support this hypothesis.

On the other hand, several benefits can be achieved by decreasing the threshold. Firstly, it has been observed that this scheme have very few license-holders and applicants. For the time being, only one license has been awarded. The inclusion of the laminate floorings and its large market share in Europe ensures a wider number of possible applicants (candidates). Secondly, and keeping in mind that the EU Ecolabel aims at providing information to the consumers about the top best environmental performing products, the inclusion of the laminate floorings in this scheme also guarantees that environmental information about this largely sold product can be provided. However, and in order to avoid any possible misunderstanding a requirement on the overall wood, cork and bamboo content in the flooring as well as the classification of the flooring have been included in the consumer information criteria.

The requirements regarding the use of biocidal products have been removed from the definition and are now included as part of criterion 4. The use of biocidal products and wood preservatives is not permitted at any stage of the production process<sup>2</sup>.

Reference is included in the product scope about the non-structural function of these floor coverings in the buildings. It is implicitly understood that floor coverings are not prepared to perform structural functions in the building. Excluded from this product group is the concept of floor levelling components, a combined name for products and methods used to create a surface that is either ready for a floor covering or which can itself constitute a finished floor surface

### c) Rationale of proposed definitions

A revision of the terms that shall be included in the pre-amble of the EU Ecolabel criteria document has also been conducted.

A revision of the product groups the EU Ecolabel scheme consists of was initially conducted. The definitions have been changed adopting the definitions provided by international standards, whenever possible. It was proposed to be complemented the definitions including clarifications of the kind of products that can be found on the shelves and that fall under the proposed definition. For example, wood floorings consist of unfinished and finished products, however, due to legal aspects; it was decided to include this type of information in the User Manual.

Additionally, a revision of other terms to be included in this section was carried out. Among those are:

- Two definitions of the term "Volatile organic compounds (VOCs)" considering if the VOCs are to be measured as content of VOC in a solution or as VOC emissions. The first term is defined in accordance with the Decopaint Regulation<sup>3</sup> and applies to criterion 4. The second one is defined in accordance with the CEN/TS 16516:2013 and applies to criteria 6. Several definitions coexist currently in the EU legislation and international standards and voluntary schemes meaning

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<sup>2</sup> Derogation and restrictions provided for those with preservative functions in in-can chemical products

<sup>3</sup> Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending directive 1999/13/EC (OJ L 143 30.4.2004 p. 87).

that a substance can be or cannot be classified as VOC depending on the selected definition and test methods. The selection of both definition provided in the Decopaint Regulation and the CEN/TS 16516 ensures that VOCs will be equally measured across Europe by well-established practices in the industry and that the value will be easily verified by the competent bodies.

- A better definition for synthetic fibres is proposed in the most recent proposal since the previous proposal lacked of a proper definition and consisted of examples.
- A thorough revision of the definitions related to biocidal products, active substances and preservatives has been carried out to bring the definitions and terminology in line with those in the Biocidal Product Regulation (EU) No 528/2012.
- Several definitions indicating what should be considered as wood, cork or bamboo-based materials have been included. These materials are a combination of renewable and non-renewable materials under a certain conditions.
- Several terms and definitions required for the assessment and verification of criterion 5 related to the energy consumption has been introduced. Terms such as guarantee of origin or renewable energy and their definitions are in line with the respective Regulation or Directive

*Further information can be found in 4.1*

### **1.2.2 Key environmental aspects and relation with the criteria proposal**

The market analysis reveals that the most common kind of wooden floor coverings in the current EU market is laminate flooring (about 70 %). Solid and multi-layer wood flooring is the second type most commonly used (about 20 %, considering also mosaic and veneer wooden floors) and other types such as cork or bamboo have lower market shares. Laminate flooring (regardless of the main forestry material used) is made, on average, of 70-80 % wt. wood and wood-based materials while other floor coverings generally reach a plant material content above 90% wt.

Based on the LCA review presented in the chapter 4 of the preliminary report the overall findings indicate that the production phase and the extraction of the materials are associated with the most significant environmental impacts during the life cycle of floor coverings.

- a) Extraction of materials: this stage causes the second most important lifecycle environmental impacts of floor coverings. The most common materials used in the production of floor coverings are wood, cork, bamboo, wood-based and plant-based materials, resins and other spreadable materials widely used for the preservation and treatment of wooden surfaces. The environmental impacts caused during the extraction of materials stage are mainly due to unsustainable management of the forests and plantations. Therefore, it is important that wood and any other plant-based resources used in the floor covering production come from well managed and reliable sustainable sources. Ensuring legality and sustainability of the wooden and any other plant-based materials and products placed on the EU market is the first step to guarantee the future of the forest and forest-based sectors.
- b) Production stage: This stage causes the main environmental impacts due to energy consumption and the use of adhesives, resins and other materials during floor covering assembly. Depending on the type of floor covering the energy demand as well as the chemicals used are different, however, in all cases they score similarly and cause environmental impacts such as use of non-renewable

raw materials, air-pollutant emissions (VOCs and formaldehyde), limited recyclability of the final product due to the impregnation with biocides, paints and/or varnishes.

- c) Packaging and transportation stage: this stage does not cause significant environmental impact (lower than 2 %) except for a possible international sea transportation of either the raw materials or the finished products. Packaging is made by using different kinds of plastics, paper or cardboard and, although these aspects present room for environmental improvement, due to their low weight compared to the finished product weight, they do not significantly influence the overall environmental impact of the product group
- d) Use stage. The environmental impacts caused during this life cycle stage are not significant in comparison to those of other lifecycle stages. Nevertheless, an extension of the lifetime of floor covering products would imply a lower rate of replacement of these products. This fact would bring significant environmental benefits related to other lifecycle stages such as a lower extraction of materials, a saving of natural resources, lower energy consumption and lower production of residues, among others. Environmental benefits would also be achieved during the end-of-life stage.
- e) End-of-Life stage: its environmental impacts highly depend on the end-user behaviour. If floor coverings are reused or recycled, the environmental impacts of this lifecycle stage are lower than if floor coverings are incinerated (even with energy recovery) or disposed of landfills.

As a conclusion and according to this summarized environmental information special attention should be paid to the energy consumed, and the use of chemicals during the manufacturing processes and, then to the environmental aspects related to the growth and extraction of wood, cork, and bamboo materials.

Table 2 shows the link between the identified hotspots (LCA and non-LCA impacts) and the proposed EU Ecolabel criteria in TR4.0.

**Table 2. Link between the hotspots identified (LCA and non-LCA impacts) and the revised EU Ecolabel criteria**

Hotspots	% total impact	Revised EU Ecolabel criteria	Comments in the related criteria
<b>Extraction of the raw materials</b>			
Extraction of forestry raw materials	(-25) to 50%	Wood, cork and bamboo based materials	It ensures that, at least 70% of the forestry raw materials used in the finished product are certified by a sustainable management forest certificate.
		Contaminants in recycled wood, cork and bamboo	It ensures that recycled wood can be introduced in the production stage without lowering the quality of the finished product. It does not prevent the use of recycled materials and preserves the extraction of new materials from forests.

		Biocidal products	It ensures that wood could be successfully recycled at the end-of-life stage of the product and preserves the extraction of new forestry materials to be used.
		Consumer information	It informs consumers about the share of wood, cork or bamboo the floor coverings is made of as well as its classification into wooden flooring, cork floor covering, bamboo floor covering, laminate flooring, etc.
		Information appearing on the EU Ecolabel	It informs consumers that the product has a minimum amount of certified material compared to other products while they are making purchase decisions.
Transport	Negligible <sup>4</sup>	--	The little relevance of these hotspots are the main reason for not being tackled by EU Ecolabel criteria.
Waste generation		--	
Water use		--	
<b>Production and manufacturing of flooring</b>			
Energy consumed (drying, heating and pressing)	2-85%	Energy consumption during the production process	The criterion limits the amount of total energy used during the production and sets up caps for the maximum purchased electricity and fossil fuel sourced energy to be used. It aims at promoting the energy efficiency as well as the use of energy coming from renewable energy sources.
		Information appearing on the EU Ecolabel	It informs consumers that the product has saved energy compared to other products while they are making purchase decisions.
Waste generation	1-10%	Waste management	This criterion has been removed due to the lack of measurable standards that allow their verification and application in the EU Ecolabel scheme.
Packaging	< 2%	-- --	Their environmental impacts are not significant from the life-cycle perspective. Therefore, no criteria have been proposed.
Transport to and from the facilities			
Water use	Not rated	--	
Adhesives production	5-25%	VOCs and free formaldehyde in the production process	It limits the amount of VOCs and free formaldehyde used in the resins, adhesives, surface treatment, etc.
		Plasticizers	It ensures that plasticizers (phthalates) are not used in the production of adhesives.
		Flame retardants	It ensures that FR are not used in the manufacturing of the floor coverings.
		Halogenated organic compounds	It ensures that halogenated organic compounds are not used in the manufacturing of the floor coverings as they can be ingredients of binders, adhesives, coatings, etc.

<sup>4</sup> Transportation significantly scores only in the case of bamboo flooring due to the long distances. International overseas transportation can amount for the second largest environmental impact of the product although it depends on the sources of the raw materials and the environmental profile of the flooring. Local transportation, however, scores similarly to other floorings and depends on the distances, type of transportation (trucks, rail, etc) and their energy efficiency (eg Euro 5).

		Aziridine and polyaziridine	It ensures that aziridine compounds are not used in the manufacturing of the floor coverings as they can be ingredients of surface treatment.
Finish and surface treatment production	Up to 6%	Heavy metals in paints and varnishes	It ensures that the quantity of heavy metals in used paints and varnishes is strictly restricted
		VOC content in surface treatment	It ensures that end user's health will be protected during the use phase.
Emissions from the core board	Not rated	Formaldehyde emissions from the core board and the final product	It strictly limits the emissions coming out from the main core boards of the flooring (whenever used) or the final product, thus protecting end-users.
		Information appearing on the EU Ecolabel	It informs consumers that the product reaches the lowest values of the standards regarding the VOC and formaldehyde emissions (low-emitting).
Other chemicals	Not rated	Biocidal products /preservatives	It ensures that no persistent or biocidal active substances used as preservatives are included as an ingredient in any of the materials used for manufacturing the product.
		Flame retardants	It limits the use of potentially hazardous substances and mixtures that can be included in the product to those required by the national legislation. This limits the environmental and health risks for the consumers
		Hazardous substances and mixtures	
		Ingoing substances listed in accordance with article 59(1) of Regulation (EC) no 1907/2006	
Information appearing on the EU Ecolabel	It informs consumers that the product has a limited amount of hazardous substances while they are making purchase decisions.		
<b>Installation and use stage</b>			
Laying and installation	Not rated	Consumer information	It ensures that end users are provided with the needed information to lay the flooring respecting the environment and are able to choose complementary materials with the lowest possible attributed environmental impacts. Unfinished floor covering should provide information about recommended surface finish with low environmental impact (eg Type III ecolabel products or EM1code products).
Use phase	Not rated	Formaldehyde from the floor covering	It ensures that end user's health is preserved as it is ensured that floorings are low-emitting products .
		VOC emissions from the floor covering	

	Indirect effects	Fitness for use	It ensures flooring will have a realistic/minimum useful life time for its intended use. It prevents from a premature refurbishment, thus saving resources.
		Consumer information	A clear statement of the flooring's areas of use should be included for proper use.
	10-30%	Reparability	A design for repair and a repair manual ensure that the floor covering can be repaired in case of a misfortunate event.
		Extended guarantee	A longer durability of at least 5 years ensures that the product will perform correctly for this time.
		Maintenance (consumer information)	It ensures that consumers are provided with the needed information to maintain and use the product satisfactorily.
		Routine cleaning (consumer information)	No specific criterion has been developed against this environmental aspect, due to the difficulties in verifying how consumers maintain and clean the floorings once installed. However, instructions should be given to recommending low containing VOC cleaners (eg type III ecolabel products).
<b>End-of-life</b>			
End life	(-20) to 50%	Consumer information	It ensures that consumers are provided with the information needed to properly handle the product at the end its useful life. Further actions are out of the scope of this policy tool. Additionally, aspects that could harm an environmentally proper management have been tackled in other life-cycle stages of the product and are being addressed under other criteria.
<b>Overall lifecycle</b>			
Extension of the lifetime	--	Consumer information	It ensures that consumers are provided with the information needed to properly handle the product in case any repair is needed .
		Fitness for use	It ensures a minimum quality in the product to last for the expected lifetime under envisaged conditions (eg intended use, indoor use, etc).
		Reparability and extended guarantee	It ensures that information on how to repair and how to find professionals to do so is given to the consumers.

### 1.2.3 Proposed main changes in the set of EU Ecolabel criteria.

The proposed framework for the revision of the EU Ecolabel criteria is shown in Table 3. This table shows the simplification process that the EU Ecolabel criteria for wooden floor coverings have undergone in along this revision process.

**Table 3 Comparison of the criteria structure**

	Current EU Ecolabel	Proposed EU Ecolabel criteria
<b>Raw materials</b>	Sustainable forest management	Wood, cork and bamboo-based materials
	Recycled wood and plant materials	



	Impregnating substances and preservatives	
	Genetically modified wood	
<b>Use of dangerous substances</b>	Dangerous substances for the raw wood and plant treatments	Contaminants in recycled wood, cork and bamboo
	Wood preservatives	Biocidal products
	Biocides	
	Adhesives - VOC content	VOCs content in other used substances and mixtures
	Formaldehyde	VOC content in surface treatment
	Dangerous substances in the coating and surface treatments	Heavy metals in paints, primers and varnishes
	Plasticisers	Plasticizers
		Halogenated organic compounds
		Flame retardants
<b>Production process</b>	Energy consumption	Energy consumption in the production process
	Waste management	
<b>Use phase</b>	Release of dangerous substances from the final product	Emissions of formaldehyde from the floor coverings and core boards
		Emission of VOCs from the floor coverings
		Reparability and extended product guarantee
<b>Packaging</b>	Packaging	
<b>Fitness for use</b>	Fitness for use	Fitness for use
<b>Consumer information</b>	Consumer information	Consumer information
	Information appearing in the EU Ecolabel	Information appearing in the EU Ecolabel

Several current EU Ecolabel criteria have been deleted in this revision due to different reasons.

- The first one is the requirement of using non-GMO wood. It has been removed because this requirement is one of the basic requirements to award a sustainable wood, cork or bamboo certification. However, this remark has been introduced in the wording of the criterion dealing with the origin of wood, cork and bamboo materials.
- The criteria requiring a waste management system has also been removed to bring the scheme in line with other EU Ecolabel criteria sets and due to the uncertainties and difficulties that this criterion showed for verification.
- The criterion on packaging has been removed due to the low relevance of the environmental impacts caused by the packaging in comparison to the overall environmental impact of this product.

Finally, other criteria such as those dealing with the use of chemicals and raw materials have been reorganized, merged or separated trying to better accommodate and address the current market conditions. These changes are commented in more detail, where appropriate, along the TR4.0

## 2 ASSESSMENT AND VERIFICATION

### Assessment and verification

The specific assessment and verification requirements are indicated within each criterion.

Where the applicant is required to provide declarations, documentation, analyses, test reports, or other evidence to show compliance with the criteria, these may originate from the applicant or its supplier(s), etc., as appropriate.

Competent bodies shall preferentially recognise attestations which are issued by bodies accredited according to the relevant harmonised standard for testing and calibration laboratories and verifications by bodies that are accredited according to the relevant harmonised standard for bodies certifying products, processes and services. Accreditation shall be carried out according to the provisions of the Regulation (EC) No 765/2008 of the European Parliament and of the Council<sup>5</sup>.

Where appropriate, test methods other than those indicated for each criterion may be used if the competent body assessing the application accepts their equivalence.

Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications or site visits.

As pre-requisite, the product shall meet all applicable legal requirements of the country or countries in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.

If a supplier prefers not to disclose the substances constituting a mixture to the applicant, that information can be sent directly to the competent body by the supplier.

### **Rationale for the assessment and verification**

The assessment and verification texts include the type of test methods that are considered as relevant for the each type of criteria. Where appropriate, test methods other than those indicated for each criterion may be used if the component body assessing the application accepts their equivalence. Some equivalent test methods or standards are already suggested either in the wording of the criteria or in the user manual.

As a pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement. This requirement was firstly delated from the proposed assessment and verification set and then re-introduced. The reasons for this clause are that even if the legal requirements are mandatory to comply with to place the product on the EU market, they can differ between countries and provide additional information about the characteristics of the product.

A significant modification of the assessment and verification clause is the requirements a laboratory should fulfil to conduct the testings. The EU Ecolabel Regulation (EC) No 66/2010 indicates that competent bodies shall preferentially recognise verifications

<sup>5</sup> Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93 (OJ L 218, 13.8.2008, p. 30).

performed by bodies which are accredited under the EN 45011. However, this standard is nowadays phased-out and certification bodies are no longer accredited in accordance with these requirements. A new statement has been included in the text.

Another significant modification of this section deals with the deletion of the information to be provided to the competent bodies about the product. These requirements are not provided as part of the assessment and verification of the criterion 1 because applicants should demonstrate compliance with the requirements of the scope in that criterion and therefore further verification is not needed at this point.

Finally a clause indicating the possibility of sending confidential information from the suppliers of the floor covering manufacturers to the competent bodies has been introduced. This clause applies to all the criteria and therefore this sentence has been deleted from the individual criteria.

*Further information about the terms used in the criteria and assessment and verification are included in section 4.1.2. For example, in this section is defined what is understood in this document under 'third party verification' that is required in Criterion 2.*

### 3 CRITERIA PROPOSAL

This section shows the last proposal of the EU Ecolabel criteria wording and its rationale. The new criteria are included in the blue boxes and subsequently the reader can find a brief rationale that summarizes the findings and inputs received along the project and that underpin the proposed criteria.

Should the reader want to get further information about the criteria, this can be found either in the previously published preliminary report and technical reports (TR1.0 or TR 2.0 or TR3.0) or in section 4 "Table of comments" of this report.

Criteria are presented in the order proposed for the last draft. This order does not correspond to the current EU Ecolabel criteria set.

The candidate flooring, regardless the type of flooring it belongs to, shall comply with all criteria, unless specifically stated.

#### CRITERION 1: Product description

Proposal for criterion 1
<p>A technical description of the floor covering including drawings that illustrate the parts or materials that form the final floor covering product, its dimensions and a description of the manufacturing process shall be provided to the competent body. That description shall be accompanied by the bill of materials for the product that shall state the total weight of the product and how this is split between the different materials used.</p> <p>Compliance with the scope of the product group as defined in Article 1 shall be demonstrated.</p> <p><b>Assessment and verification</b></p> <p>The applicant shall provide to the competent body a declaration of compliance, supported by the following information about the floor covering:</p> <ul style="list-style-type: none"><li>brand/trade name<sup>6</sup>;</li><li>a description of the product including technical drawings that illustrate the parts or materials used in the final product;</li><li>the bill of materials: percentage composition of the raw materials, substances or mixtures in the final product in mass including any additive and surface treatment, when relevant;</li><li>a list of all the component parts of the product and the respective weight;</li><li>a description of the manufacturing process. Suppliers of raw materials or substances shall be described with the legal name, production site, contact details and description of the production step(s) they carried out or are part of.</li></ul> <p>The product data sheet, environmental product declaration or equivalent document can be accepted as evidence of compliance with this criterion provided that it includes the listed information.</p>

<sup>6</sup> Trade name means all names under which the substance is marketed within the Union market.

### **Rationale for the proposed criterion**

The inclusion of the criterion 1 in the EU Ecolabel criteria set was proposed after the 2<sup>nd</sup> AHWG meeting and it is based on the concerns of some stakeholders to verify the wood, cork and bamboo based material content of the product.

Additionally, a proper classification of the product group into any of the four proposed product groups is needed before demonstrating compliance with other criteria as thresholds can depend on the nature of the floorings.

Finally, there are other types of floorings on the market that are not covered by this scheme, such as resilient floorings. The technical description provided in this criterion should help competent bodies to verify the classification. This criterion aims at verifying that the product falls under one of the four product groups covered by the scheme.

### **Rationale for the assessment and verification of the proposed criterion**

The assessment and verification of the criterion relies on:

- Technical drawings that should show the parts of the product and materials used. Even if not all the products are manufactured in the same way, several common features allow the classification of the floor covering under wood flooring, cork flooring, bamboo flooring or laminates. These characteristics should be shown in the drawings.
- Bill of materials should provide information on the type and content of each of the materials used in the manufacturing of the floor coverings
- A list of all the component parts and their respective weight that should allow verifiers to identify the key parts of the flooring. This information would be of relevance for the assessment and verification of criteria points 3.a and 3.b. The presence of hazardous substances is restricted in that criterion being the limit applied to the component parts of the flooring.
- A description of the manufacturing process should allow verifiers to identify the key step of the manufacturing process. This information can be of relevance for the assessment and verification of other criteria such as criterion 5.

Some documents such as environmental product declarations (EDP) are suggested to be provided at this point as in most of the cases, these docs include the totally or partially the required information and the information is presented in a standardized format that makes easier its understanding.

*Further information can be found in section 4.1.1 and 4.2*

**CRITERION 2: Wood, cork and bamboo based materials**

<b>Proposal for criterion 2</b>
<p>This requirement is applied to wood, wood-based, cork, cork-based, bamboo, bamboo-based materials weighing more than 1% of the finished product.</p> <p>All wood, wood-based, cork, cork-based, bamboo, bamboo-based materials shall not originate from genetically modified organisms (GMO) and be covered by chain of custody certificates issued by an independent third party certification scheme such as the Forest Stewardship Council (FSC), the Programme for the Endorsement of Forest Certification (PEFC) or equivalent</p> <p>All virgin wood, cork and bamboo shall be covered by valid sustainable forest management certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent</p> <p>Where a certification scheme allows the mixing of uncertified material with certified and/or recycled materials in a product or production line, a minimum of 70% of the wood, cork and/or bamboo shall be sustainable certified virgin materials and/or recycled material.</p> <p>Uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.</p> <p>The certification bodies issuing forest and/or chain of custody certificates shall be accredited or recognised by that certification scheme.</p> <p><b>Assessment and verification</b></p> <p>The applicant shall provide to the competent body a declaration of compliance supported by a valid, independently certified chain of custody certificate of the manufacturer for all wood, wood-based cork, cork-based, bamboo, bamboo-based material used in the product or production line and demonstrate that no virgin material is sourced from GMO. The applicant shall provide audited accounting documents that demonstrate that at least 70% of the materials originate from forests or areas managed according to Sustainable Forestry Management principles and/or from recycled sources that meet the requirements set out by the relevant independent chain of custody scheme. FSC, PEFC or equivalent schemes shall be accepted as independent third party certification</p> <p>If the product or production line includes uncertified material, proof shall be provided that the content of uncertified virgin material does not exceed 30% and is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.</p>

**Rationale for the proposed criterion**

Unanimous agreement of drafting the wood, cork and bamboo criterion as close as possible to the criterion recently voted in the EU Ecolabel criteria for furniture was kept in mind during the whole revision process. For this reason, common points of discussion such as the extension of the criterion scope to non-wood materials, inclusion or exclusion of cork materials in the scope of this criterion or the removal of separate legal wood requirements are not addressed in this rationale and can be found in the TR 4.0 of the EU Ecolabel for Furniture.

As commented in that document, the wording of the criterion for sustainable wood is largely based on a text previously agreed by the EUEB and used in Decision 2014/256/EU for EU Ecolabel converted paper products.

Some modifications were proposed in the criteria and assessment and verification parts:

- a specific requirement indicating that the materials shall not originate from GMO species has been included. This requirement was implicit in the verification through the certification schemes proposed (FSC and PEFC) and only reinforces these schemes. The requirement was also included in the assessment and verification part. The explicit inclusion of the requirement of no using GMO materials arose along the revision process due to the revision of PEFC requirements and the possibility of opening this certification scheme to GMO.
- stakeholders suggested the need for requiring accounting documents that demonstrate that at least 70% of the materials originate from forests and areas managed according to the Sustainable Forest Management (SFM) principles. This requirement is not an extra burden for those organizations that hold a chain of custody certificate and it is of importance for those producers that follow a percentage based method instead of a physical separation method. The percentage based method applies to organizations that are mixing certified material/products with other material categories. The accounting should be associated to a single product type or a group of products which consist of the same or similar input material and have been produced or manufactured by the organization at one production site. The material entering the group of products shall have the same measurement unit or units that are transferable to the same measurement unit. The percentage can be calculated as simple percentage or rolling percentage considering, if any, conversion ratios and methods are applied. The accounting document calculates the volume credits directly from input certified material and tracks the quantity of credits which are attributed to each product. The total amount of credits cumulated in the final products shall not exceed the sum of credits entered into the production line.  
The assessment and verification of the minimum certified material in the floorings is in this way reliable and robust. Previously, the wording of the assessment and verification only required the demonstration of the minimum certified material content but it did not specify how to do it. Possibility of double counting the credits as included in EU Ecolabel products and products certified by third party certification schemes were pointed out during the revision process.
- A cut-off limit of 1% weight by weight, below which this criterion would not apply, has been proposed. The aim of this approach is to avoid disproportionate assessment and verification efforts for some parts of the floorings where wood materials are of minor importance. In all cases, the EU Timber Regulation should assure that all the wood materials used in the manufacture of the floorings are coming from legal sources.  
This is not exempted from the total percentage of wood, cork, bamboo based materials required to comply with the scope of this decision.

During the discussions held in the EUEB meeting in June 2016, it was pointed out the need of including a number of explanatory points in the accompanying user manual. Those points include:

- the type of documents that should be able to demonstrate the amount of certified or recycled wood, cork or bamboo or
- the need of reaching a consensus agreement at EUEB level about those schemes that can be considered as equivalent to FSC or PEFC for compliance with this criterion

*Further information can be found in section 4.1.3 and 4.2*

## CRITERION 3: General requirements for hazardous substances and mixtures

### Proposal for criterion 3

The presence in the product and any component parts thereof, of substances that have been identified according to Article 59 (1) of Regulation (EC) No 1907/2006 as substances of very high concern (SVHCs) or substances or mixtures that meet the criteria for classification, labelling and packaging (CLP) according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council<sup>7</sup> for the hazards listed in Table 3.1 of this Decision, shall be restricted in accordance with points 3.a and 3.b. For the purpose of this criterion, Candidate List SVHCs and CLP hazard classifications are grouped in Table 3.1 according to their hazardous properties.

**Table 3.1 Grouping of restricted hazards**

#### **Group 1 Hazards – SVHC and CLP**

*Hazards that identify a substance as being within Group 1:*

- substances that appear on the Candidate List for SVHCs
- carcinogenic, mutagenic and/or toxic to reproduction (CMR) category 1A or 1B: H340, H350, H350i, H360, H360F, H360D, H360FD, H360Fd, H360Df

#### **Group 2 Hazards – CLP**

*Hazards that identify a substance as being within Group 2:*

- category 2 CMR: H341, H351, H361f, H361d, H361df, H362
- category 1 aquatic toxicity: H400, H410
- category 1 and 2 acute toxicity: H300, H310, H330, H304
- category 1 aspiration toxicity: H304
- category 1 specific target organ toxicity (STOT): H370, H372
- category 1 skin sensitizer H317

#### **Group 3 Hazards – CLP**

*Hazards that identify a substance as being within Group 3:*

- category 2, 3 and 4 aquatic toxicity: H411, H412, H413
- category 3 acute toxicity: H301, H311, H331, EUH070
- category 2 STOT: H371, H373

### **3.a. Restriction of SVHCs**

The product and any component parts thereof shall not contain SVHCs at concentrations greater than 0,10 % (weight by weight).

No derogation from this requirement shall be given to Candidate List SVHCs present in the product or any component parts thereof at concentrations greater than 0,10 % (weight by weight).

#### **Assessment and verification**

The applicant shall compile declarations of absence of SVHCs above the specified concentration limit for the product and any component parts used in the product. Declarations shall be with reference to the latest version of the Candidate List published by ECHA<sup>8</sup>.

<sup>7</sup> Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p. 1).

<sup>8</sup> ECHA, Candidate List of substances of very high concern for Authorisation, <http://www.echa.europa.eu/candidate-list-table>.



### Proposal for criterion 3

#### **3.b. Restriction of CLP classified substances or mixtures used in the floor covering**

Substances or mixtures used by the floor covering manufacturer or his suppliers during the preparation of raw materials, manufacturing, assembly or any other treatment of the floor covering shall not be classified with any of the CLP hazards listed in Table 3.1. Restricted substances or mixtures shall include adhesives, paints, primers, varnishes, stains, resins, biocidal products, fillers, waxes, oils, joint fillers, dyes and sealants.

However, the use of such restricted substances shall be permitted if at least one of the following conditions applies:

- the restricted substance or mixture was used in quantities that amount to less than 0,10% of the total weight of the floor covering and any component part thereof;
- the restricted substance changes its properties upon processing (e.g. becomes no longer bioavailable or undergoes chemical reaction) so that the restricted CLP hazards no longer apply and any unreacted residual content of the restricted substance is less than 0,10% of the total weight of the floor covering and any component part thereof.

#### **Assessment and verification**

The applicant and/or its suppliers shall provide to the competent body a declaration of compliance with criterion 3.b. supported, where appropriate, by a list of relevant substances or mixtures used together with declarations about their hazard classification or non-classification, their added quantities and if appropriate, statements whether the substances change their properties upon processing so that the restricted CLP hazards no longer apply. If so, the quantities of any unreacted residual content of the restricted substance shall be provided.

The following information shall be provided in relation to the hazard classification or non-classification for each of the substances:

- i. the substance's Chemical Abstract Service (CAS)<sup>9</sup>, European Community (EC)<sup>10</sup> or other list number (where available for mixtures);
- ii. the physical form and state in which the substance or mixture is used;
- iii. harmonized CLP hazard classifications;
- iv. self-classification entries in ECHA's REACH registered substance database<sup>11</sup> (if no harmonized classification available);
- v. mixture classifications according to the criteria laid down in Regulation (EC) No 1272/2008.

When considering self-classification entries in the REACH registered substance database, priority shall be given to entries from joint submissions.

Where a classification is recorded as "data-lacking" or "inconclusive" according to the REACH registered substance database, or when the substance has not yet been registered under the REACH system, toxicological data meeting the requirements of Annex VII to Regulation (EC) No 1907/2006 shall be provided that are sufficient to support conclusive self-classification in accordance with Annex I to Regulation (EC) No 1272/2008 and ECHA's supporting guidance. In the case of "data lacking" or "inconclusive" database entries, self-classifications shall be verified. For that purpose, the following information sources shall be accepted:

<sup>9</sup> CAS registry: <https://www.cas.org/content/chemical-substances>

<sup>10</sup> EC inventory: <http://echa.europa.eu/information-on-chemicals/ec-inventory>

<sup>11</sup> ECHA, REACH registered substances database: <http://www.echa.europa.eu/information-on-chemicals/registered-substances>.

### Proposal for criterion 3

- i. toxicological studies and hazard assessments by ECHA peer regulatory agencies<sup>12</sup>, Member State regulatory bodies or intergovernmental bodies;
- ii. a Safety Data Sheet (SDS) fully completed in accordance with Annex II to Regulation (EC) No 1907/2006;
- iii. a documented expert judgment provided by a professional toxicologist, which shall be based on a review of scientific literature and existing testing data, where necessary supported by results from new testing carried out by independent laboratories using methods approved by ECHA;
- iv. an attestation, where appropriate based on expert judgment, issued by an accredited conformity assessment body that carries out hazard assessments according to the Globally Harmonized System (GHS) or CLP hazard classification systems.

Information on the hazardous properties of substances may, in accordance with Annex XI to Regulation (EC) No 1907/2006, be generated by means other than tests, for instance through the use of alternative methods such as in vitro methods, by quantitative structure activity models or by the use of grouping or read-across.

### **Rationale for the proposed criterion**

The criterion on restricted hazardous substances has been included as a requirement coming from the EU Ecolabel Regulation (EC) No 66/2010. The wording of this criterion is proposed in accordance with the recommendation of the latest published Task Force on Chemistry. However, it has been acknowledged to be difficult to understand and several modifications aiming to simplify the criterion are proposed.

The main points for the simplification and adaptation of this criterion to the product group under study are:

- the criterion restricts the presence in the final product of certain the substances based on their classification with H-phrases in accordance with the CLP regulation and/or the REACH regulation. This means that substances classified with a listed H-phrase can be used as raw material as long as one of the two conditions included in the criteria is observed. These two conditions ensure that the classified used as raw material no longer holds this classification.
- A list of chemical preparations of especial concern, such as adhesive, resins, fillers, coatings, etc is included in the criteria wording. The chemical preparations and final concentration of these listed products should be checked carefully.
- According to previous agreements, the content in the final product (flooring) of classified substances is allowed below 0.1% weight by weight. Depending on the type of product this limit can refer either to the final product or to a component part thereof. Initially, the limit was proposed to refer to the final product. This means that if 1m<sup>2</sup> of floor covering weights up to 7kg, up to 700gr of the classified substances can be contained. This fact was pointed out during the revision of the EU Ecolabel criteria and therefore the threshold is now referred to the components thereof.

In order to strength this change the wording of the criteria has been modified as *"and any component part thereof"*. Additionally, a definition of *"component part"* has been included in the criterion 1 making clear that the content of the classified and SVHC should be limited by the weight of the component part they are part of.

<sup>12</sup> ECHA, Co-operation with peer regulatory agencies, <http://echa.europa.eu/about-us/partners-and-networks/international-cooperation/cooperation-with-peer-regulatory-agencies>.

Component part is defined as each of the layers the floor covering consists of. These layers are homogenous parts in shape, chemical composition and function. Examples of layers are the wear layer, the stabilising layer, the baking layer, the deco layer, etc.

Most of the floor coverings consists of several layers that can be considered as components or parts of the floor covering. For example, laminate floorings consist of at least three layers, multi-layer wood floorings are also made of a variable number of layers, etc. Referring to the components of the floor coverings, the threshold of classified substances is significantly decreased. This is especially relevant due to the fact those layers that are manufactured by using classified raw materials are the lightest ones.

- No derogations are proposed to this criterion C3a. This means, that whatever classified substances is used as raw material should undergo a chemical process becoming a not-classified compound and the unreacted amount of this substance should be lower than 0.1%wt of the component weight it is content in.

Discussions during the last June 2016 EUEB meeting were focused on the wording of the criterion. Stakeholders pointed out that according to the proposed text and their understanding, SVHCs could be potentially and intentionally added up to 0.1%w/w of the component part they are part of. According to these stakeholders, it is not in line with the aim of the EU Ecolabel Regulation (EC) No 666/2004 that aims at ensuring the substitution and non-use of classified and SVHC.

However, it was pointed out that the wording of the criteria reflects the current state of the art of the testing and verification procedures. For the time being, the detection limit for measuring the quantities of classified substances and SVHC is above the absolute zero and therefore a consensus should be reached to determine which value could represent the non-presence of such as substances in the EU Ecolabel products. 0.1%wt has been, for the time being, considered as a representative value.

### **Rationale for the assessment and verification of the proposed criterion**

The assessment and verification of the criterion is proposed in line with the outcomes of the Task Force for Chemistry. The verification is proposed to be carried out differently depending on substance classification:

- The verification of the non-presence of substances classified as SVHC lies on the declarations from the manufacturers or when relevant from the suppliers. The non-presence of SVHC starts with the information about the composition of the raw materials plus the information about the chemical reactions that are undergone during the production of the floorings.
- The verification of the non-presence of substances classified with a listed H-phrase focuses on the list of substances included in the wording criteria (eg adhesives, paints, etc). For each of this substances, the manufacturer should provide:
  - a list of the ingredients of the products listed
  - the classification or non-classification of the ingredients
  - the amount of substance used in each layer or component part and
  - if the substance undergoes a chemical process that changes its properties so that the restricted CLP hazards no longer apply.
  - and if reacted, the quantities of any unreacted residual content of the restricted substance

*Further information can be found in section 4.1.4 and 4.2*

## CRITERION 4: Specific substance restrictions

### Proposal for 4a: Contaminants in recycled wood, cork and bamboo

Any recycled fibres or chips used in the manufacture of the final floor covering product shall be tested in accordance with the European Panel Federation (EPF) standard for delivery conditions of recycled wood<sup>13</sup> or with another equivalent standard that has equal or stricter limits, and shall comply with the limits for contaminants as listed in Table 4.1.

**Table 4.1. Limits for contaminants in recycled wood, cork, bamboo and their fibres or chips (mg/kg dry recycled material)**

Contaminants	Limit values	Contaminants	Limit values
Arsenic (As)	25	Mercury (Hg)	25
Cadmium (Cd)	50	Fluorine (F)	100
Chromium (Cr)	25	Chlorine (Cl)	1000
Copper (Cu)	40	Pentachlorophenol (PCP)	5
Lead (Pb)	90	Tar oils (benzo(a)pyrene)	0.5

#### **Assessment and verification**

The applicant shall provide to the competent body:  
a declaration from the manufacturer or the panel supplier, as appropriate, that no recycled wood, cork, bamboo or their fibres or chips were used in the floor covering, or

a declaration from the manufacturer or the panel supplier, as appropriate, that all recycled wood, cork, bamboo or their fibres or chips used have been representatively tested in accordance with the EPF standard for delivery conditions of recycled wood or with another equivalent standard that has equal or stricter limits, supported by test reports that demonstrate compliance of the recycled samples with the limits specified in Table 4.1

### Proposal for 4b: Biocidal products

The treatment of wood, cork and/or bamboo of the floor coverings with biocidal products shall not be permitted.

The following active substances shall not be permitted for in-can preservation of water-based mixtures such as adhesives or lacquers:

- blend (3:1) of chloromethylisothiazolinone and methylisothiazolinone (CMIT/MIT CAS No 55965-84-9) at a concentration above 15 ppm;
- methylisothiazolinone at a concentration above 200 ppm;
- other isothiazolines at a concentration above 500 ppm.

<sup>13</sup> "EPF Standard for delivery conditions of recycled wood", October 2002 at: <http://www.europanel.org/upload/EPF-Standard-for-recycled-wood-use.pdf>.

#### Proposal for 4b: Biocidal products

##### **Assessment and verification**

The applicant shall provide to the competent body a declaration of non-use of biocidal products or, if applicable, a declaration supported by an SDS from the water-based mixtures' suppliers stating what active substances have been used as in-can preservatives for the water-based mixtures.

#### Proposal for 4c: Heavy metals in paints, primers and varnishes

Any paints, primers or varnishes used on wood, wood-based, cork, cork-based, bamboo or bamboo-based materials shall not contain substances based on the following metals: cadmium, lead, chromium VI, mercury, arsenic or selenium at concentrations exceeding 0,010% (weight by weight) for each individual metal in the in-can paint, primer or varnish formulation.

##### **Assessment and verification**

The applicant or his supplier, as appropriate, shall provide to the competent body a declaration of compliance with this criterion and provide the respective SDS from the suppliers of the paints, primers and varnishes used.

#### Proposal for 4d VOC in surface treatment

Surface treatment products used on wood, wood-based, cork, cork-based, bamboo or bamboo-based materials shall have either of the following:  
a total VOC content of less than or equal to 5% weight by weight (in-can substance concentration);

a total VOC content greater than 5% weight by weight provided that they are shown to be applied in quantities that amount to less than 10 g/m<sup>2</sup> of treated surface area.

The criterion relates to the total VOC in the surface treatment products with the chemical composition they have in wet form. If the products require dilution before use, the calculation is to be based on the content in the diluted product.

For the purpose of this criterion, VOC means volatile organic compound as defined in Article 2(5) of Directive 2004/42/CE of the European Parliament and of the Council<sup>14</sup>.

This criterion does not apply to mixtures used for repairing (e.g. knots, checks, dents, etc.) during the manufacturing process.

##### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance with this criterion supported by the SDS of any surface treatment substances or mixtures used on wood, wood-based, cork, cork-based, bamboo or/and bamboo-based materials. If the SDS states that the VOC content of the surface treatment substances or mixtures used is less than or equal to 5% weight by weight, no further verification shall be necessary.

Should the VOC content information not be included in the SDS, the VOC content

<sup>14</sup> Directive 2004/42/CE of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending directive 1999/13/EC (OJ L 143 30.4.2004 p. 87).

### Proposal for 4d VOC in surface treatment

shall be calculated from the list of substances in the surface treatment mixture. The concentration of each VOC ingredient shall be stated as a percentage by weight.

Alternatively, if the VOC content is higher than 5% weight by weight, the applicant shall provide a calculation demonstrating that the effective quantity of VOC applied per m<sup>2</sup> of the treated surface area of the floor covering is less than 10 g /m<sup>2</sup>, in accordance with the guidance provided in Appendix I.

### Appendix I. Guidance on the calculation of the quantity of VOC applied

The requirement relates to the total VOC in the surface treatment products with the chemical composition they have in the wet form. If the products required dilutions, the calculation is to be based on the content in the dilutive product.

This method is based on the application method that calculates the quantities applied per m<sup>2</sup> surface area. It determines the content of the organic solvents as a percentage of quantity of the surface treatment applied.

The applied quantity of VOC is calculated using the following formula

$$\sum_{n=1}^i \text{Quantity of surface treatment product} \times \% \text{VOC} \times \text{surface treatment efficacy}$$

The formula consists in:

Quantity of surface treatment product: per each coating applied, the amount of surface treatment fed in the system shall be reported in g/m<sup>2</sup>;

The proportion of VOC in the surface treatment products: the concentration is to be stated as a percentage by weight;

The surface treatment efficiency that depends on the application method. The efficacy is tabled in accordance with the state of the art of the surface treatment industry as shown in Table 4.2;

The sum of all the coatings applied.

**Table 4.2. Efficacy of the surface treatments**

Surface treatment	Efficiency	Surface treatment	Efficiency
Automatic spray application, no recycling	50%	Roller coating	95%
Automatic spray application with recycling	70%	Curtain coating	95%
Spray application, electrostatic	65%	Vacuum coating	95%
Spray application, bell/disc	80%		

### Proposal for 4.e: VOCs content in other substances and mixtures

VOC content shall be less than:

3% weight by weight in both in-can adhesives and resins used in manufacturing of the floor coverings;

1% weight by weight in other substances apart from in-can adhesives, resins and surface treatment (criterion 4.d) used in manufacturing of the floor coverings.

Free-formaldehyde of liquid aminoplast resins used in the manufacturing of the

#### Proposal for 4.e: VOCs content in other substances and mixtures

floor coverings shall be less than 0,2% weight by weight.

The criterion relates to the total VOC in the substances with the chemical composition they have in wet form. If the mixtures require dilution prior to use, the calculation is to be based on the content in the diluted product.

For the purpose of this criterion, VOC means volatile organic compound as defined in Article 2(5) of Directive 2004/42/CE of the European Parliament and of the Council.

This criterion does not apply to mixtures used for repairing (e.g. knots, checks, dents, etc.) during the manufacturing process.

#### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance with the criterion supported by the SDS of any in-can adhesive, resin or other substances used or equivalent documentation that supports the declaration of compliance, together with a complete recipe with designation of quantities and CAS numbers.

If the SDS states that the VOC content is less than 3% weight by weight of the in-can adhesive and resin used or less than 1% weight by weight of other substances used, no further verification shall be necessary.

Should the VOC content information not be included in the SDS, the VOC content shall be calculated from the list of substances. The concentration of each VOC ingredient shall be stated as a percentage by weight.

The applicant shall provide test reports demonstrating that the free-formaldehyde content in the liquid aminoplast resins is less than 0,2% weight by weight in accordance with standard EN1243.

#### Proposal for 4.f: Plasticizers

Any adhesive, resin or surface treatment substance or mixture shall not contain any phthalate plasticisers that are referred to in Article 57 of Regulation (EC) No 1907/2006. The non-presence of these phthalates shall be considered as the total sum of the listed phthalates amounting to less than 0,10% of the adhesive, resin or surface treatment substance or mixture weight (1000 mg/kg).

#### **Assessment and verification**

The applicant shall provide to the competent body either:  
a declaration of compliance with the criterion from the supplier or the floor manufacturer stating that phthalate plasticisers were not used, or  
a declaration of compliance with the criterion from the supplier or the floor manufacturer stating that phthalate plasticisers were used and that none of the phthalates meeting the criteria of Article 57 of Regulation (EC) No 1907/2006 have been used in the adhesive, resin or surface treatment substance or mixture.  
In the absence of a suitable declaration, adhesive, resin or surface treatment substance or mixture materials shall be tested for the presence of these phthalates according to the ISO 8214-6 standard.

#### Proposal for 4g. Halogenated organic compounds

Halogenated organic compounds shall not be permitted in the substances used in the manufacture of floor coverings (e.g. as binders, adhesives, coatings, etc.).

##### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance supported by a declaration of non-use of halogenated organic compounds from the manufacturer of the substances. In addition, the respective SDS of the substances shall be provided.

#### Proposal for 4.h Flame retardants

Flame retardants shall not be permitted in the substances used in the manufacture of floor coverings.

##### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance supported by a declaration of non-use of flame retardants from the manufacturer of the substances. In addition, the respective SDS of the substances shall be provided.

#### Proposal for 4.i Aziridine and polyaziridine

Aziridine and polyaziridine shall not be permitted in the substances used in the manufacture of floor coverings (e.g. as surface treatment, coatings, etc.).

##### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance supported by a declaration of non-use of aziridine and polyaziridine from the manufacturer of the substances. In addition, the respective SDS of the substances shall be provided.

### **Rationale of the proposed criterion**

#### *a) Contaminants in recycled wood, cork and bamboo*

Possible treatment with any of a number of hazardous chemicals may have occurred during the previous manufacture and use of the wood, cork and bamboo. Even after careful pre-treatment, traces of these substances may still remain and it is necessary to test these materials prior to their re-use of any new procedures.

Initially, this sub-criterion was proposed to be applied to the recovered wood and by using the EPF standard. Two main comments were received during the revision process:

- even if for the time being wood is the only material with a collection system in place, the criterion should be applicable to all kind of materials that fall under the scope of this product group. This also ensures that once cork and bamboo will have a separated collection system, a proper testing can be conducted prior to their re-use.
- the EPF standard has been identified as a well-known and applied standard on the market that ensures a minimum quality of the materials to be recycled. However,



it is not the only one applicable for testing the re-use material across Europe. Indeed, there are MSs that oblige testing the wood materials before being reusing and consequently, they have national schemes that serve for this purpose. In order to avoid costly double testing, the verification of this criterion throughout national schemes that have an equal or higher strictness level has been proposed.

#### b) Biocidal products

Preservatives are generally not needed indoor applications since the environments are not aggressive to wood, cork and bamboo-based products. For this reason, instead of permitting the use of preservation and impregnation treatments in the EU Ecolabel floor coverings, confidence is placed in the end user to take the appropriate action if needed in individual cases.

The ban on biocidal products has been modified during the revision process regarding the following points:

- wording referring to those products and active substances that have a biocidal function has been brought in line with the recently published Biocidal Product Regulation (BPR, Regulation (EU) 528/2012). In this sense, "biocides" is no longer applicable and the restriction addresses either "biocidal products" or "active substances". Both terms, together with "preservatives" have been included in the definition list in the pre-amble of the Commission Decision.
- the exclusion of wood preservatives and any other substance with a biocidal effect has been extended to all kinds of materials (not only wood but also cork, bamboo and based materials). This means that neither cork nor bamboo can be treated with biocidal products or preservatives.
- an exemption was included regarding those substances that are used as preservative in in-can preparations. Preservatives with biocidal properties are used in the preparation of some products to ensure their duration for a specific period of time, such as paints, glues, varnishes, etc. Initially, all type of preservatives were allowed to be used in the in-can preparations but stakeholders feedback proposed to restrict the use of several compounds of isothiazoline under certain conditions.

Discussions at the June 2016 EUEB meeting were focused on the restrictions on using CMIT, MIT or other isothiazolines as preservatives of in-can preparations. Some stakeholders proposed the total exclusion of this chemical family while other proposed a maximum limit of 100ppm (proposed 200ppm).

The request for stricter limits is based on the recent outcomes of the Risk Assessment Committee (RAC) in ECHA that agreed on a harmonized classification of MIT. This fact points out the hazardous properties of MIT and indicates that the concentration should be lower, than those within the EU Ecolabel across product groups. MIT will probably already at 1.5 ppm, trigger an EUH 208 declaration in paints, varnishes or mixtures: "*Contains methylisothiazolinone. May cause allergic reactions*".

Although this information is of relevance for this product group the several points were considered for assessing the need of stricter limits:

- the paints, varnishes, adhesives, and any other chemical preparations containing isothiazolinones reach the end consumers after undergoing a drying process. This drying process guarantees that the chemical preparations became a film or matrix of high stability and decreasing significantly the release of any substances
- stricter limits would mean that current EU Ecolabel products could not be used for manufacturing EU Ecolabel floor coverings, what could be regarded as an inconsistency of the scheme.

#### c) Heavy metals in paints, primers and varnishes

Heavy metals in paints, primers and varnishes are now simply permitted by the criterion 3 based on the idea that they are not used in high quantities in the final flooring. For this

reason, an additional restriction is included in this sub-criterion. The restriction aims at prohibiting the use of paints, primers and varnishes that contain any of the heavy metals listed because:

- many of the additive compounds based on these heavy metals are REACH restricted
- even if additive compounds based on these metals are non-hazardous, the presence of these metals would make complicate recycling of the wooden materials (and cork and bamboo in the future) if the EPF 2002 is considered
- if materials containing these substances, regardless the H-phrases of the original additive, are processed, they may be transformed into more toxic and/or bioavailable forms and either remain in fly ash, bottom ash, air pollution controls residues or be released directly to the atmosphere.

The only modification introduced in this criterion since the first draft presented was in the inclusion of primers. This suggestion brings this criterion in line with other EU Ecolabel criteria set approved recently, such as EU Ecolabel for Furniture.

#### d) VOCs in the surface treatments

To guarantee low-emitting products is one of the objectives of this EU Ecolabel criteria set and limits on the VOC content of the surface treatment products used to manufacture the products is one of the multiple ways to achieve it. However, it should be kept in mind that using products with a high VOC content does not mean that the product will become a high emitting product as most of the surface treatments undergo a curing process that significantly decreases the amount of VOC remaining in the finishing and therefore their possible emission during the use phase and end of life of the product. This sub-criterion should be regarded as a precautionary measure.

The VOC definition for this criterion has been modified during the revision process so that there is no need for performing additional calculations and the threshold could be directly compared to the value reported in the SDS of the surface treatment products. This comment and modification also applies to criterion 4.e.

The products used for applying the surface treatment, such as lacquering, waxing, paints or varnishes, usually content higher amounts of VOCs the other preparations and therefore, limiting its content will ensure that the overall VOC content of the finished product is reduced. VOCs in surface treatment are needed to reticular properly the film of paint (coalescent function). VOC in paints are needed to give the aesthetic effect to meet the demands of the market (coloured antiqued, etc)

The criterion has been modified along the revision process:

- Initially it was removed because of its compliance throughout the fulfilment of criterion 6 (VOC emissions from the final product), as it was considered that both requirements were overlapping each other. However, stakeholder's feedback suggested that the possible emissions of VOC substances during the EoL were not totally covered by criterion 6. For this reason, a restriction on the VOC content was re-introduced.
- The strictness limit of the criterion has also been considered along the revision process. The strictness limit of EU Ecolabel criteria for Furniture requires an amount to less than 35g/m<sup>2</sup> of treated surface, Nordic Labelling for flooring keeps a limit at 2g/m<sup>2</sup> and the industry stakeholders have opposite views on the strictness of this requirement. Some of them asked for decreasing the strictness to 10g/m<sup>2</sup>.

VOCs in surface treatment are needed to reticular properly the film of paint (coalescent function). VOC in paints are needed to give the aesthetic effect to meet the demands of the market (coloured antiqued, etc)

Regarding the threshold of the total VOC of surface treatment, industry provided a through demonstration of the pros and cons of increasing the limits from 2g/m<sup>2</sup> to 10g/m<sup>2</sup> by means of five examples of surface treatments that are usually applied.

The examples show that the VOC content applied in the surface treatment is related to the levels of wear resistance making impossible to achieve a relevant wear resistance value (and therefore a long life product) if the surface treatment applied has a VOC content lower than 2g/m<sup>2</sup>.

10g/m<sup>2</sup> was suggested as a compromise as this value reconciles the ecological requirements with industrial and performance needs of the surface treatment.

- An exception was introduced for this sub-criterion. The exemption addresses all the preparations needed for repairing the logs and raw materials during the manufacturing process. This exemption guarantees that the material that is damaged during the manufacturing process will not be wasted and therefore that resources will be fully and efficiently used in the production process. The products used for repairing the materials during the manufacturing process contain high amounts of VOCs to make easier their application in the knots, checks, bark inclusions, dents and any other deformation of the desired shape of the final product. However, they undergo a curing process becoming a solid matrix.
- Appendix I is provided together with several examples in the User Manual, to help applicants on the calculations of the quantity of VOC applied. The method is based on the content in the dilutive product. The revision pointed out that the formula stated in the current set of criteria had a mistake that has been corrected.

#### e) VOCs content in other substances and mixtures

Manufacturing floor coverings with resins and adhesives that are low-containing VOC and free-formaldehyde can contribute to decrease the emissions of these substances during the use-phase and the EoL of the floorings. Rationale for this point has been provided above.

The revision of this sub-criterion was focussed on several points, some of them were also applied to the previous sub-criterion. :

- The definitions for "VOCs" and "free-formaldehyde" were revised. The VOC content is defined as the amount of organic compounds falling under the definition reported in the Decopaint directive divided by the total weight of the preparation (eg resin or adhesive) in its ready-to-use (dilutive) form. The VOC content limit is expressed in percentage by weight, but some other units can also be used. The ingredients classified as VOC depends on the definition considered. There are several definitions of VOC used at EU level (eg definitions included in the Paint directive or Solvent emissions regulation), in voluntary schemes or in international standards. For this revision, it is proposed to apply the definition included in the decopaint directive  
Free-formaldehyde is acting in some substances as preservative. The formaldehyde releasing preservatives are known to hydrolyse in aqueous systems. However, reliable analytical techniques have not been available for quantitating this reaction in all kind of products. Free formaldehyde is regulated in the Cosmetic Directive 76/768/EC making the industry become familiar with this term, even if no definition is provided. The issue of what constitutes "free formaldehyde" had variations on interpretation, evident from various test methodologies, on scientific literature.  
The Cosmetic Regulation proposes the EU method for determination of formaldehyde in the presence of formaldehyde donors uses HPLC to separate the aqueous formaldehyde (as methylene glycol) and forms a coloured derivative of formaldehyde which can be quantified.  
However, stakeholders commented that a round robin test performed recently demonstrated problems in applying this method to adhesives and resins and that industry recommends and adopted the EN 1243 for the determination of free-formaldehyde in aminoplast resins. As this type of resins is mostly used in the manufacture of flooring, it has been proposed this test method for measuring the free-formaldehyde content.

- Likely the previous sub-criterion, during the revision of the EU Ecolabel it was pointed out that an exemption was needed to be granted for all the preparations used for repairing the raw materials during the manufacturing process. Even, if the VOCs content of these substances is above the proposed limits, they will undergo a curing process reducing drastically the content of VOCs that remains in the final product.

#### g) Plasticizers

Plasticizers are used in very low concentration and small fraction of the total coating and likely they undergo chemical reactions during the manufacturing process. For these reasons, the use of plasticizers under certain conditions would be allowed by criterion 3.b and an additional criterion is needed to ban their use.

Even if their use is not widely spread in the current European market, the plasticizers can amount to over 20% of the composition of some top layers of resistant polymers of some floorings. Phthalate levels are very low, but even though, it can be accumulated in the dust particles because phthalates migrate from those polymers. Some phthalates are detrimental to develop mental health and some others are carcinogens, therefore this criterion excludes the use of phthalate plasticizers that are classified.

In order to prevent possible floorings candidates that can be a combination of wood, cork or bamboo and vinyl floors, this criterion was set up. This prevention is also reinforced by the scope and definition set up in article 1.

#### h) Halogenated organic compounds

Many halogenated hydrocarbons have a moderate to high toxicity by inhalation, due to the fact that these substances are not metabolized, but persist and accumulate in fatty tissues. The halogenated organic compounds that are of concern are used chemicals for manufacturing plastics containing chlorine and fluorine, brominated and halogenated flame retardants, organic solvents, insecticides, etc. The restriction of the halogenated organic compounds aim at reducing the release of persistent bioaccumulative toxic chemicals (PBTs) associated with the life cycle of some building products such as flooring.

This general ban responds therefore to the precautionary principle. Industry representative were several times contacted during the revision process. They were asked to provide information on the specific halogenated organic compounds that are used in the floor covering production to evaluate and assess the risk of those compounds. Considering the lack of feedback received in this respect during the consultation, it was decided to propose the general ban.

#### i) Flame retardants

Flame retardants (FR) are substances that may require detailed consideration in terms of their possible impact on the environment. Generally speaking, FRs are seldom used and only in certain flooring types. No "Code of Buildings" of any Member State requires the addition of flame retardants to any of these four types of floorings, according to the information provided by the stakeholders and the industry. However, industry confirmed that FRs may be added to the floor coverings in very specific circumstances and even that there are claims from part of some manufacturers regarding the resistance of some flooring to flames. The FRs are in those cases a group of anthropogenic environmental contaminants that are potentially used at relatively high concentrations.

More than 175 different types of FRs exist, commonly divided into four major groups: inorganic FRs, organophosphorus FRs, nitrogen-containing FRs and halogenated organic FRs. Inorganic FRs comprise metal hydroxides, boron salts, inorganic antimony, tin, zinc and molybdenum compounds among other substances. Inorganic FRs are added as fillers into the polymers and are considered immobile, in contrast with the organic FRs. Nitrogen-containing FRs inhibit the formation of flammable gases and are primarily used in polymers containing nitrogen, such as polyurethane and polyamide. The most

important nitrogen-based FRs are melamine and melamine derivatives. Brominated FRs are more numerous than chlorinate FRs (both classified under the halogenated FRs) due to their efficiency and because at high temperatures, the decomposition products of brominated compounds are less volatile than those structure.

Although FRs chemically differ from one another, they are all non-natural chemicals. The addition of an amount of non-natural chemicals that are not really necessary represents further environmental impacts in all the life cycle stages: extraction of the chemicals, production and end-of-life. It is clear that some of these substances may pose significant risks to the environment as for example the brominated flame retardants (BFRs) that currently are the largest market of the group of FRs because many of them are considered toxic, persistent and bio-accumulative. However, detailed investigation of the life cycle and properties of each substance is needed before firm conclusion about them can be drawn.

The proposal for restricting the use of FRs in indoor floor coverings is based on the argument that its function is not required for this application. This means that the addition of non-natural chemicals will represent further environmental impacts that can be safely and easily avoided.

#### j) Aziridine and polyaziridine

Aziridine and polyaziridine compounds can be used as cross-linkers for acid functional water-based acrylic and polyurethane wood finishes. Due to their extremely high efficient hardening properties and fast reactivity, they provide the highest cross-link density of any water borne hardener. Additional advantages are the shorter processing time as the finish can be applied in multiple coats quicker than other systems.

However from the environmental point of view, the toxicology of a particular aziridine compounds depends on its structure and activity, although sharing the general characteristics of aziridines. Some reports note that the skin content with some of these compounds can be extremely dangerous, also because relatively little human exposure data on aziridine have been collected. Additionally, aziridine compounds have been reviewed and classified as possibly carcinogenic to humans (IARC Group 2B), irritants of mucosal surfaces such as eyes, nose or respiratory tract and skin sensitizer causing allergic contact dermatitis and urticaria.

#### **Rationale for the assessment and verification of the proposed criterion**

Most of the sub-criteria are proposed to be verified by means of the information included in the Safety Datasheet (SDS) of the preparations used or of the ingredients that the preparation consists of.

The SDS of the preparations provides information related to their physical and chemical properties as well as related to the possible classification of the ingredients and the preparation it-self. The information included in the SDS should be revised every certain number of years and therefore, it should be kept updated. It is important, however, to select those SDSs as most updated as possible since the hazard classification of the ingredients and the preparation itself may have recently been changed.

The information included in the SDS is standardized and regulated at the EU level by the Annex II of REACH regulation. According to the last amendment of this annex, section 3 should display a list of those ingredients that meet the criteria for classification (H-phrase) and are included in a concentration greater than 0.1%wt. Moreover; section 9 may provide information about the VOC content of the product. However, this information is not mandatory and could be left in blank.

In those cases where the ingredients are not classified, added in small quantities, or where the information is missing, manufacturers or suppliers should provide in addition to the SDS, a full list of the ingredients of the substances. This list of ingredients should be used for the verification of the thresholds proposed in this criterion 4.

Given the list of ingredients to the manufacturers of the flooring can create confidentially conflicts as the formulation can be not revealed by the suppliers. If so, suppliers can send the required information directly to the competent bodies preserving possible damages to their business. The remark was initially included in each sub-criteria but during the revision of the criteria was decided to be included in the pre-amble of the EU Ecolabel criteria set. Therefore this remark applies to all criteria, if appropriate.

*Further information can be found in section 4.1.4 and 4.2*

## CRITERION 5: Energy consumption in the production process

### Proposal for criterion 5

The average annual energy consumed during the production of the floor coverings shall be calculated as indicated in Table 5.1 and Appendix II and shall exceed the following limits (E = score):

Product	E score
Solid wood floorings	> 11,0
Multi-layer wood floorings Wood veneer floor covering Cork floor coverings and cork tile floorings Bamboo floor coverings Laminate floorings	> 8,0

**Table 5.1. Calculation of the scoring point**

Formula	Environmental parameter			Maximum requirements
$E = \frac{A}{20} + \left(5 - \frac{B}{3}\right) + \left(5 - \frac{C}{7}\right)$	A	Proportion of renewable energy in the total annual energy consumption	%	--
	B	Annual electricity purchased	kWh/m <sup>2</sup>	15 kWh/m <sup>2</sup>
	C	Annual fuel consumption	kWh/m <sup>2</sup>	35 kWh/m <sup>2</sup>

Where A = Ratio between the energy coming from renewable energy sources and the total energy.

In the numerator of the A ratio shall read the purchased RES fuels as (amount of fuel x standard value), plus the heat generated on-site from non-fuel RES, plus 2,5 x electricity on-site generated non-fuel RES and plus 2,5 x purchased electricity from RES.

In the denominator of the A ratio shall read the purchased RES fuels as (amount of fuel x standard value), plus the purchased non-RES fuels as (amount of fuel x standard value), plus the heat generated on-site from non-fuel RES, plus 2,5 x electricity on-site generated non-fuel RES, plus 2,5 x purchased electricity from RES and plus 2,5 x purchased electricity from non-RES.

B = Annual electricity purchased means the sum of the electricity purchased from an external supplier. If the electricity purchased is electricity from RES, a factor of 0,8 shall be applied.

C = Annual fuel consumption means the sum of all fuels purchased or sourced as by-products in the manufacturing of the floorings and used to generate energy on-site.

E scoring shall be calculated per m<sup>2</sup> of produced flooring and shall account the direct energy consumed in the production of the flooring. Indirect energy consumption is not considered.

The following is an indicative list of activities that shall be included and not included in the calculations of the energy consumption. Activities shall start at the reception of the fells (tree trunks), cork and bamboo in the manufacturer's or his suppliers facilities until the end of the manufacturing process.

Product	Conditions for the electricity and fuel consumption (indicative list)
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**Proposal for criterion 5**

	<b>Included</b>	<b>Not included</b>
Solid wood floorings	<ul style="list-style-type: none"> <li>- drying, grinding and sawing</li> <li>- sizing and trimming</li> <li>- sanding</li> <li>- coating</li> <li>- packaging</li> <li>- and any other activity needed for manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>- manufacture of lacquers or any other in-can preparation</li> <li>- energy consumed in the quality control activities</li> <li>- indirect energy consumption (e.g. heating, lighting, internal transportation, etc.).</li> </ul>
Multi-layer wood floorings	<ul style="list-style-type: none"> <li>- drying, grinding and sawing</li> <li>- sizing and trimming</li> <li>- sanding</li> <li>- pressing</li> <li>- coating</li> <li>- packaging</li> <li>- and any other activity needed for manufacturing</li> </ul>	
Cork and cork tile floor coverings	<ul style="list-style-type: none"> <li>- drying, grinding and sawing</li> <li>- sizing and trimming</li> <li>- sanding</li> <li>- pressing</li> </ul>	
Bamboo floor coverings	<ul style="list-style-type: none"> <li>- or manufacturing of the core board if used in its structure</li> <li>- coating</li> <li>- packaging</li> <li>- and any other activity needed for manufacturing</li> </ul>	
Laminate floorings	<ul style="list-style-type: none"> <li>- manufacturing of the core board</li> <li>- impregnation process of the décor, overlay and backing paper</li> <li>- pressing</li> <li>- sizing</li> <li>- packaging</li> <li>- and any other activity needed for manufacturing</li> </ul>	

**Assessment and verification**

The applicant shall state and demonstrate:

the type and quantity of electricity that has been, on average, purchased from an external supplier per year. Should electricity from RES be purchased, guarantees of origin in accordance with Directive 2009/28/EC shall be provided. Where Directive 2009/28/EC is not applicable in the country where the floor covering is manufactured, an equivalent means of proof shall be provided;

the type(s) of fuels and quantities that have been used in the manufacturing of the floor coverings by means of the contracts, bills or equivalent documentation that includes dates, quantity delivered/purchased and specifications of the fuel (e.g. physic-chemical properties, Low Heating Value (LHV), etc.). Declaration of which of those used fuels are coming from RES in accordance with Directive 2009/28/EC shall be included;

- the quantity of energy that has been used in the manufacturing steps included in the calculation of the E score together with supporting documents (e.g. energy measurements at different manufacturing points, energy consumption of the equipment as reported in the product sheets, etc.);

the type and quantity of energy that has been sold. The calculations shall include the type and quantity of fuels, if any, used for generating the energy sold, the dates or periods of time



## Proposal for criterion 5

in which it was generated and the selling dates;  
a declaration of the quantity of flooring that applies for the EU Ecolabel (in m<sup>2</sup>) that has been, on average, annually produced.

The documents used to communicate the energy consumption, fuel purchase and energy generation as well as the documents to communicate flooring production to the national authorities may be used to demonstrate compliance with this criterion

### Appendix II. Guidance for calculating the energy consumption in the production process

Energy consumption per flooring m<sup>2</sup> is calculated as an annual arithmetic average of the last three years. Should the company not have these data, the competent bodies will assess the acceptance of equivalent data.

If the producer has an energy surplus that is sold as electricity, steam or heat, the sold quantity can be deducted from the fuel consumption. Only fuel that is actually consumed in the manufacture of the floor covering<sup>15</sup> is to be included in the calculation.

Energy consumption is reported in kWh/m<sup>2</sup>, although calculations may also be made in MJ/m<sup>2</sup> (1 kWh=3,6 MJ).

The energy content of the fuels is calculated based on the table 5.2. If electrical energy is produced on-site, one of the following methods can be used for calculating fuel consumption:

Actual annual consumption of fuel;

Consumption of electricity produced on-site multiplied by 2,5, if the origin is a non-combustible renewable source.

Values of the energy consumption shall be calculated by means of the standard fuel values. The energy contents of various fuels are given in Table 5.2.

**Table 5.2. Standard fuel values<sup>16</sup>**

Fuel	MJ/kg	Fuel	MJ/kg
Petrol	44,0	Pellets (7% W)	16,8
Diesel		Peat	7,8-13,8
LPG	45,2	Straw (15% W)	
Eo1 oil	42,3	Biogas	
Eo5 oil	44,0	Wood chips (25%W)	13,8
Natural gas	47,2	Waste Wood	
Power station coal	28,5	<i>GJ/ton is equivalent to MJ/kg</i>	

(% W) is the percentage by weight of water in the fuel and is given the letter *f* in the formulas below. If nothing else is stated, *f* = 0% W and the ash content is average.

<sup>15</sup> Manufacture of the floor covering included energy used in the production line as well as other auxiliaries (e.g. lighting, heating, energy consumed in offices, etc.).

<sup>16</sup> The values are laid down in Annex IV to Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012 p. 1).

## Proposal for criterion 5

The formula for calculating the energy content of woodchips depends on the water content. Energy is required to evaporate the water in the wood. This energy reduces the heat value of the woodchips. The energy content can be calculated as:

$$\text{Woodchip} = 19,0 \left( \frac{\text{MJ}}{\text{kg}} \right) - 21,442 \times \frac{f}{100}$$

Where f is the water content in %W of the wood. The factor 21,442 is the sum of water's heat of evaporation (2,442MJ/kg) and the energy content of dry wood 19,0 MJ/kg. If the applicant has laboratory analyses of the heat value of a fuel, the competent bodies may consider using this heat value for calculating the energy content.

### **Rationale for the proposed criterion**

An ambitious energy consumption criterion is key to tackle the environmental impacts of this product group during the production because the energy consumed for manufacturing is causing the highest environmental impact. Two complementing ways of reducing the associated environmental impacts are: a) decreasing the overall energy consumption (either as electricity purchase or the fuel to generate electricity, heat or steam onsite), and b) increasing the renewable origin of the energy

Both aspects are considered in the new formula proposed in this criterion. The formula is based on the Nordic Ecolabelling for floor coverings version 6. Detailed explanations of the terms as well as other aspects related to the formula can be found in the accompanying background report.

Additionally, some aspects have been discussed and modified along the revision of the EU Ecolabel criteria as follows:

- A conversion factor of 2.5 in accordance with Directive 2006/32/EC has been introduced in the factor A of the formula. This factor has been calculated as an average ratio between the useful electricity output from the generating unit in a specific time unit and the energy value of the energy source supplied to the unit, within the same time. The previous criteria wording included a correction factor of 1.25 that was incorrect.
- The definition of renewable energy sources (RES) has been aligned with the Renewable Energy Directive 2009/80/EC. This definition should be considered to calculate the share of RES reflected in the factor A
- To credit the purchase of the RES electricity a factor of 0.8 is proposed. The purchase of RES electricity should be demonstrated by the guarantee of origin and this factor decrease the weighting of the overall purchased electricity in the score E, making easier to achieve the required threshold. In order words, the larger the amount of RES electricity, the easier the compliance with the criteria.
- The user manual includes several examples on how to calculate the score E under different conditions.

### **Rationale for the assessment and verification**

The purchase of RES electricity and the production of on-site energy should be demonstrated by means of well-established mechanisms. The purchase of RES electricity is required to be demonstrated by the guarantee of origin as defined in the Directive 2009/28/EC.

The number of years used for calculating and reporting the E score is three. This number can be changed under specific conditions and within the approval of the respective competent bodies if it is considered that they don't represent the current situation (eg changes in the production chain, main renovations of the facilities, and modernization of

the production equipment). Values are proposed to be calculated as the arithmetic average of the consumptions and productions during those years.

The manufacturing steps to be considered in the calculation of the E score should be accompanied by an estimation of their energy consumption. The estimation can be supported by energy measurements at different points or any other proof. These supporting documents should be submitted to the respective competent bodies. The steps that should be included in the calculation are those directly needed for the flooring manufacturing (eg treatment of the raw materials, application of the coating, sewing, drying, pressing, etc). Other activities that also consumed energy such as the heating and lighting of the administrative buildings should not be included.

Energy produced onsite and sold to third parties should be demonstrated by contracts and/or bills. If it is RES, the guarantee of origin can be accepted as proof of compliance.

Similarly, the amount of flooring produced and that is a candidate for being awarded with the EU Ecolabel should be demonstrated. This can be done by the intern balance sheets, delivery contract, etc

*Further information can be found in section 4.1.5 and 4.2*

## CRITERION 6: Emissions of VOC from the floor coverings

Proposal for criterion 6		
<p>The floor coverings shall not exceed the emission values listed in Table 6.1 measured in a test chamber in accordance with testing standard CEN/TS16516. Packaging and delivery of samples sent for testing, their handling and conditioning shall follow the procedures described in CEN/TS 16516.</p>		
<p><b>Table 6.1. Emission requirements</b></p>		
Products	Emission requirements	
	Compound	Limit value after 28 days storage in a ventilated test chamber (see CEN/TS16516) in mg/m <sup>3</sup> air <sup>d</sup>
Solid wood floorings Multi-layer wood floorings Wood veneer floor covering	Total VOC minus acetic acid (CAS 64-19-7)	< 0,3
Cork floor coverings Bamboo floor coverings	Total VOC	
Laminate floorings	Total VOC	< 0,16
All floor coverings	Total SVOC	< 0,1
Solid wood floorings Multi-layer wood floorings Wood veneer floor covering	R-value for LCI substances minus acetic acid (CAS 64-19-7)	≤1
Cork floor coverings Bamboo floor coverings Laminate floorings	R-value for LCI substances	≤1
All floor coverings	Carcinogenic substances	< 0,001
<p><sup>d</sup> The chamber test has to be carried out 28 days after the conclusion of the surface treatment. Up to this point in time the product to be tested is stored in a sealed package at the production site and thus delivered to the test laboratory.</p>		
<p>For the purpose of this criterion, VOC means all volatile organic compounds eluting between and including n-hexane and n-hexadecane on a gas chromatographic column and having a boiling point in the range of approximately 68 °C and 287 °C, where the measurement has been carried out using a capillary column coated with 5 % phenyl/95 % methyl-polysiloxane.</p>		
<p><b>Assessment and verification</b></p>		
<p>The applicant shall provide to the competent body a declaration of compliance supported by the test reports from chamber tests carried out in accordance with CEN/TS16516 or an equivalent method showing that the limits in the Table 6.1 have been met. Test reports shall include:</p>		
<p>The test method used;</p>		

### Proposal for criterion 6

The test results and needed calculations showings the limits in Table 6.1.

If the chamber concentration limits specified at 28 days can be met 3 days after placing the sample in the chamber, or any other time period between 3 and 27 days after placing the sample in the chamber, then the compliance with the requirements may be declared and the test may be stopped prematurely.

Test data from up to 12 months prior to the EU Ecolabel application shall be valid for products as long as no changes to the manufacturing process or chemical formulations used have been made that would be considered to increase VOC emissions from the final product.

A valid certificate from relevant indoor climate labels may also be used as proof of compliance if the indoor climate label fulfils the requirements of this criterion, and if it is judged by the competent body to be equivalent

### **Rationale for the proposed criterion**

The criterion 6 aims at limiting the emissions of VOCs into the indoor environment and by doing so, to limit people's exposure to proven harmful substances. Therefore, floor coverings are required to be low-emitting products and comply with the proposed thresholds.

For the purpose of this criterion VOC is defined in accordance with CEN/TS 16516. This alignment allows for a direct comparison between the thresholds proposed and the values reported in the test report that shall be provided to show compliance with this criterion.

The revision of this criterion focused on three aspects:

- the type of compounds to be tested: the type of VOCs, the definition of VOCs, avoidance of double checking in terms of types and number of testings, if it is mandatory in certain MSs, etc
- the test methods to be used: the availability and adequacy of international well-accepted standards to perform the test and communicate the results (report the results)
- the thresholds trying to align the requirements with other national schemes

Regarding the first point, the relevance of testing TVOC and TSVOC after 28 days, R-value of substances with a LCI and carcinogenic substances was identified. These four basic values are typically checked in most of the schemes and national regulations, ensuring and at the same time, making easier the testing. Testing of these parameters is currently proposed in some national regulations such as Belgium, Germany or France among other emissions. Thus, in those three countries the testing of the products to apply for the EU Ecolabel should not bring additional costs.

Regarding the test method to be used, the recently published European Emission test method CEN/TS 16516 is proposed. The advantage of this standard is that it can be considered equivalent to the mandatory test methods used in some Member States and that it is an updated and well-accepted testing method.

The thresholds required for each type of floor covering has been a point of discussion during the revision of this scheme. The discussion leads to the different thresholds proposed depending on the type of floor covering.

- the requirement for solid and multi-layer wood floor coverings has been modified due to the high emission of acetic acid coming from the natural wood. It is showed that wood floorings in general but especially those made of oak, pine and beeches exceed the current VOC limits because the natural wood contains and releases acetic acid.

Tests show that acetic acid accounts for approx. 70% wt of the total VOC emissions in oak wood floorings and to a large percentage in those coming from beech wood floorings. In order to adapt this limit to the specific conditions of the floorings made of natural wood, the new limit is based on the difference between the TVOC emissions from the final product minus the emission of the acetic acid. This modification aims at preventing an excessive use of surface treatment to avoid the release of VOC from the natural wood. In order to achieve the current threshold the manufacturers of wood floorings would have to apply additional surface treatment (eg extra layers or thicker layers of the treatment surface) to block the emission of acetic acid from the wood. If this modification is not included, higher environmental impacts would come from the wood floorings because the manufacture would imply higher energy consumption and higher consumption of chemicals and resources among other issues. Additionally, the use of higher quantities of surface treatment would compromise the compliance with criteria 4 (VOC in the surface treatment) and 5 (Energy consumption in the production process)

This rationale also applies to the R-value.

- The requirement regarding the TVOC for laminate floorings has been modified to better reflect the characteristics of this product group. It has been reported that laminate floorings are very low-emitting products getting easily the current threshold. A tougher but achievable threshold is proposed for this type of products.
- The threshold regarding the carcinogenic substances has been long discussed. Most of the ecological schemes include this threshold (in most of them the limit is set at the same value, <0.001 mg/m<sup>3</sup> air). The compliance with this value is not expected to cause any trouble for those products that have a high environmental performance.

Only these four parameters are considered to be of relevance from joint environmental and economic perspective. An estimate of the testing costing was already provided previously and summarized in Table 4.

**Table 4.** Testing costs in euro in 2015 in Italy

	Standard	Samples/conditions	Euro
Formaldehyde	EN 717-2	3 sample (400x50xpanel thickness)	290
VOC - 1 sample	ISO 16000-9	28 days	990
VOC - 2 sample	ISO 16000-9	28 days	700

Further information can be found in section **Error! Reference source not found.** and 4.2

**CRITERION 7: Emissions of formaldehyde from the floor covering and the core board**

Proposal for criterion 7	
<p>The floor covering manufactured by using formaldehyde-based core boards, adhesives, resins or finishing agents and if used, the untreated core boards manufactured by using formaldehyde-based adhesives or resins shall have either of the following:</p> <p>formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1 as defined in Annex B to EN 13986+A1 (applying to all floor coverings and non-MDF/non-HDF core boards);</p> <p>formaldehyde emissions that are lower than 65% of the E1 as defined in Annex B to EN 13986+A1 threshold limit applying to untreated MDF/HDF core boards;</p> <p>formaldehyde emissions that are lower than the limits set out in the California Air Resources Board (CARB) Phase II or the Japanese F-3 star or F-4 star standards.</p>	
<p><b>Assessment and verification</b></p> <p>The applicant shall provide to the competent body a declaration of compliance with this criterion. The assessment and verification of low formaldehyde emission floor coverings and core boards shall vary depending on the certification scheme it falls under. The verification documentation required for each scheme is described in Table 7.1.</p>	
<p><b>Table 7.1. Verification documentation of low formaldehyde emission floor coverings</b></p>	
Certification scheme	Assessment and verification
<p>E1 (as defined in Annex B to EN 13986+A1)</p>	<p>A declaration from the manufacturer and the core board supplier if applicable, stating that the floor covering and untreated non-MDF/non-HDF core boards are compliant with 50% of E1 as defined in Annex B to EN 13986+A1 emission limits<sup>17</sup> or, in the case of untreated MDF/HDF core boards, with 65% of E1 as defined in Annex B to EN 13986+A1 emission limits, supported by test reports carried out according to either EN 120, EN 717-2 or EN 717-1 or an equivalent method.</p>
<p>CARB: Phase II limits</p>	<p>A declaration from the manufacturer and the core board supplier if applicable, supported by test results according to ASTM E1333 or ASTM D6007, demonstrating floor covering compliance with the formaldehyde Phase II emission limits defined in the California Composite Wood Products Regulation 93120<sup>18</sup>.</p> <p>The floor covering and the core board if applicable may be labelled in accordance with Section 93120.3(e), containing details in respect of the manufacturer's name, the product lot number or batch produced, and the CARB assigned number for the third party</p>

<sup>17</sup> The requirements apply to floor coverings with a moisture content of H=6,5%.

<sup>18</sup> Regulation 93120 "Airborne toxic control measure to reduce formaldehyde emissions from composite wood products" California Code of Regulations.

Proposal for criterion 7	
	certifier (this part is not mandatory if the products are sold outside of California or if the products were made using no-added formaldehyde or certain ultra-low emitting formaldehyde-based resins).
F-3 or 4 star limitis	A declaration from the manufacturer and the core board supplier if applicable, of compliance with the formaldehyde emission limits as per JIS A 5905 (for fibreboard) or JIS A 5908:2003 (for particleboard and plywood), supported by test reports according to the JIS A 1460 desicator method.

### **Rationale for the proposed criterion**

The criterion 7 aims at limiting the emissions for formaldehyde during the use phase. Floor coverings produced from wood, cork or bamboo-based materials bonded with adhesives, glues or resins that contain formaldehyde are common as well as laminate floorings made of a core board that has been produced by using formaldehyde containing adhesives or resins.

A crucial step in the production is the optimization of thermosetting resins used to bind the wood, cork or bamboo materials together to produce the solid core boards or the floor coverings with useful technical properties. Up to know, almost all the resins used have been formaldehyde based: urea formaldehyde (UF), melamine-urea-formaldehyde (MUF), melamine-formaldehyde (MF) and phenol-formaldehyde (PF).

Formaldehyde has been classified as CMR and consequently also the formaldehyde-based resins. This is generally related to the free-formaldehyde content of the in-can mixtures. Additionally, criterion 4 restricts the use of in-can mixture with levels of free-formaldehyde above a specific threshold.

The resins (with a limited among of free-formaldehyde) are then used in the factory and undergo a polymerization reaction to set into hard resins, which can account for 5 to 20% weight by weight of some wood-based panels. Any unreacted formaldehyde is quickly lost from the product as volatile emissions in the factory.

At this point the resin, as a thermoset polymer is no longer classified under REACH and additionally criterion 3 would restrict the content of any remaining unreacted formaldehyde below 0.1% weight by weight of the component parts. But floorings can be exposed to degradation (low-level hydrolysis in contact with atmospheric humidity which may result in emission of trace levels (ppm) of free formaldehyde. These emissions do not remain the product but pass to the atmosphere. This criterion 7 aims at reducing precisely these possible emissions.

The only significant non-formaldehyde based resin used is methylene di-isocynate (MDI). MDI is in a similar situation to free-formaldehyde (i.e. it is the monomer and after reaction, the resin in the final product would at most only result in trace (ppm) emissions of MDI to the atmosphere). In terms of optimum cost and technical quality, MDI is only used in specific situations. Therefore, it cannot be considered as perfect substitute. In many cases, formaldehyde resins are the only option

A modification regarding the inclusion of an additional testing for those floor covering made of a core board manufactured by using formaldehyde based resins has been introduced in the last steps of the revision of this criterion. This new requirement applies mostly to laminate floorings and it is based on the higher amount of resins and adhesives used for its manufacture.

Two levels of ambition are proposed depending on the nature of the core board (MDF and non-MDF boards being 50% E1 and 65% E1 respectively). This fact is in accordance with



the Nordic Ecolabelling criteria for floor covering and the CARB emission limits that also recognized the difficulties that face MDF manufacturers to reach low emissions values.

Finally, the level of ambition proposed for the final products has also been increased and homogenized. In the last proposal all final products shall achieve a level of emission lower than 50% of E1 regardless of the type of core board they are made of. This enhancement towards lower emissions would benefit the end consumers.

#### **Rationale for the assessment and verification**

World-wide there are there reliable standards to rate the boards regarding their formaldehyde emissions: E1standard, F standard and CARB standard. These standards are kept to be used to rate the floor covering emissions as well as the emissions of the core board of the floor coverings, if used. The level of ambition of these last two schemes goes slightly beyond half the E1 standard and therefore this limit is the benchmark proposed. Suggesting this level of ambition, the strictness of this criterion has been slightly enhanced. However, feedback from stakeholders confirmed its feasibility. They showed the existence of final products on the market that comply with the proposed limits.

*Further information can be found in section **Error! Reference source not found.** and 4.2*

## CRITERION 8: Fitness for use

### Proposal for criterion 8

Only the requirements associated with the specific type of flooring have to be fulfilled.

The floor coverings shall be tested and classified in accordance with the latest versions of the standards and indications included in Table 8.1.

**Table 8.1. Standards for testing and classifying the floor coverings**

Flooring	Test method	Classification
Wood veneer floor covering <sup>19</sup>	EN 1534 for Resistance to indentation EN 13329 for Thickness swelling Appropriate testing method for impact resistance <sup>20</sup> Appropriate testing method for wear resistance <sup>20</sup> ISO 24334 for Locking strength	EN ISO 10874 <sup>a</sup>
Factory lacquer solid and multilayer wood floorings	Thickness of the top layer Wood hardness of the surface layer <sup>b</sup>	EN 685 <sup>b</sup> CTBA
Factory oiled, uncoated wood and uncoated multilayer wood flooring		
Cork tile floor coverings	EN 12104	EN ISO 10874
Cork floor coverings	EN 660-1 for wearing group EN 425 for castor chair EN 425 for simulated movement of a furniture leg ISO 24343-1 for residual indentation	
Bamboo floor coverings	EN 1534 for resistance to indentation (Text to be added as per the approval by the CEN for top layer thickness or wear layer)	--
Laminate flooring	EN 13329 EN 14978 EN 15468	EN ISO 10874

<sup>a</sup> The abrasion resistance test method used (Annex D or Annex E) shall be declared and in the case of Annex D, the thickness of the top layer.

<sup>b</sup> Classification of wood species regarding the wood hardness and correlations between the use classes in the EN 685 and the thickness of the wear top layer and the species of wood can be found in CTBA Revetements intérieurs Parquet 71.01.

Floor coverings shall achieve at least:

Flooring	Limits
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<sup>19</sup> Wood veneer floor covering means rigid floor covering consisting of a substrate made from a wood-based panel, with a top layer of wood veneer and possibly a backing.

<sup>20</sup> For the purposes of compliance, measurements and calculations shall be made using reliable, accurate and reproducible methods that take into account the generally recognised state of the art measurement and calculation methods, including harmonised standards that have their reference published in the Official Journal of the European Union. They shall meet the technical definitions, conditions and parameters as described in the Criteria User Manual.

### Proposal for criterion 8

Veneer wood flooring	- the level of use of class 23 for floorings intended for private use - the level of use of class 32 for floorings intended for commercial use.
Factory lacquer solid and multilayer wood floorings	- the level of use of class 23 for floorings intended for private use and for commercial use
Factory oiled, uncoated solid wood and uncoated multilayer wood flooring	
Cork tile floor coverings	- the level of use of class 23 for floorings intended for private use
Cork floor coverings	- the level of use of class 32 for floorings intended for commercial use.
Bamboo floor coverings	- Equilibrium Moisture Content: 8% at 20°C and 50% rel. - Resistance to Indentation : ≥ 4 kg/mm <sup>2</sup> for plain and side pressed floor coverings ≥ 9,5 kg/mm <sup>2</sup> for high density floor coverings
Laminate flooring	- the level of use of class 23 for floorings intended for private use - the level of use of class 32 for floorings intended for commercial use.

#### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance with the criterion. The declaration shall be supported by test reports that shall include:

the type of flooring;

the test method/s selected;

the test results and the classification of the flooring according to the results and the appropriate standard, if applicable.

If the floor covering has been tested according to a test method other than what is specified above, this may be acceptable if the test methods are comparable in the opinion of the competent body

#### **Rationale for the proposed criterion**

Floor coverings are products with a relatively long life span that varies between 15 and 50 years. Despite the long life, LCA studies showed that a reduction of the environmental impacts caused by the floor covering can be achieved if the service life of the product is extended since a lower number of turn-overs is required. To guarantee a long durability of the finished products a design for durability, reparability, maintenance and fitness for use is needed. Therefore this criterion plays an important role in minimizing the overall environmental damages.

Due to the different characteristics of the floor coverings included in this product group, a variety of standards and thresholds should be applied. Long discussions were held along the revision process due to a number of reasons such as the lack of standards for testing the durability and for classifying the floor coverings, the fast development of some sectors of the industry regarding this aspect, the use of durability indicators as market tool for some flooring and the decrease in prices. All those aspects lead to a complete new drafting of the criterion for fitness for use after each stakeholder consultation.

The fitness for use characteristics of each type of floor coverings will be discussed separately.

- Wood veneer floor coverings: this type of flooring has been introduced in a latter step as it was previously included in the wood flooring type. However, stakeholders commented that they should be a separate group as they cannot be refurbished. Additionally, wood veneer floor coverings, which has a thin top layer, are manufactured with a thicker surface treatment layer than other wood floorings. Four testing were considered to be relevant for this type of floorings. For the time being only two international standards are fully agreed and listed in the Table 8.1: EN 1534 for Resistance to indentation EN 13329 for Thickness swelling. The other two test methods proposed to be measured to get the classification of the ISO EN 1087 are still in a draft status (prEN 13454). The quotation of this not fully approved standard is not possible in the wording of the criteria due to legal aspects. For this reason several alternatives are still under discussion, among them, to include a reference to Annex C, D and E of the prEN 13454 in the User Manual of this product group.
- Wood floorings (both solid and multi-layer wood floorings) are characterized because they allow the refurbishment after several years of service. In order to guarantee that the wood floorings can be refurbished and consequently that their service life can be extended a proper combination of wood type and thickness of the top layer should be selected. These two characteristics are therefore the ones that should be measured for verifying this criterion.  
The combination to be selected should be at least the equivalent to the performance class 23 of the EN standards. The measurements of both parameters and the table of equivalences are based on the French norm.  
The differences in performance between the finished and unfinished wood floorings are not significant to achieve the proper combination
- Some types of cork floorings are lacking a specific standard to measure their resistance and performance. Due to this fact, the closest standards or parts of standards are proposed to be used.
- Likely, bamboo floor covering standards for ensuring the fitness for use are not yet developed. Industry, however, tends to use the measurements and results of the resistance to indentation in combination to the moisture content to assess the performance of this type of floorings.
- Finally, laminated floorings are the only ones for which a full set of standards were developed. These standards cover both the test methods to be performed as well as the classification of the floorings depending on the results.  
The performance in the European standards is classified into classes. Each class defines minimum values for a range of parameters to be achieved. However, the industry and the retailers mainly focused on one parameter: the abrasion resistance index (AC), being the evaluation of the fitness for use of the laminated flooring not so comprehensive as if the class system is used.  
Discussions were focused on the level of ambition of this criterion. The classification of the laminated floorings based on classes is split between private and commercial use and into each group in three levels depending on the intensity of use. Level class 2x corresponds to private use and level class 3x corresponds to commercial use. Nowadays, even if the differences in performance are noticeable, the difference in price is negligible, becoming classes 3x more and more popular for all kind of applications.  
Stakeholders asked for increasing the threshold related to the laminated floorings intended to be used in private sector up to a class 32. However, it was considered that this requirement is contracting the standard as class 32 is classified for commercial areas. A compromise was found setting the highest class intended to be used in the private sector as minimum requirement for this criterion.

*Further information can be found in section 4.1.8 and 4.2*

## CRITERION 9: Reparability and extended product guarantee

### Proposal for criterion 9

Only the requirements associated with the specific type of flooring have to be fulfilled.

For the purpose of undertaking repair and replacement of worn out parts, the floor covering shall meet the following requirements:

- Reparability: Information shall be included in the consumer instructions or the manufacturer's website to be accessible to the users and installers.

a) *Design for repair and repair document*: For floor coverings that are not glued down, the flooring shall be designed for disassembly with a view to facilitating repair, reuse and recycling. Simple and illustrated instructions regarding the disassembly and replacement of damaged elements shall be provided. Disassembly and replacement operations shall be capable of being carried out using common and basic manual tools. Information/recommendation of keeping spare floor covering elements in stock for possible event of repair shall be provided;

- Extended product guarantee:

b) The applicant shall provide at no additional cost a minimum of a five year guarantee effective from the date of delivery of the product. This guarantee shall be provided without prejudice to the legal obligations of the manufacturer and seller under national law.

#### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance supported by:

a copy of the repair document or any other material where the information on design for repair is provided;

a copy of the guarantee that indicates the terms and conditions of the extended product guarantee that are provided in consumer information documentation and that meet the minimum requirements set out in this criterion.

### **Rationale for the proposed criterion**

Addressing durability and reparability of the products is one of the key pillars of the circular economy as stated in the EU Commission Communication on the Circular Economy. Therefore, a move towards a truly circular economy requires a horizontal approach across different policy areas on durability and reparability of products and the EU Ecolabel policy tool can contribute to this aim ensuring that the products last longer and that they are easily repaired if needed. Communication of these characteristics to the consumers is also important, but it is addressed in criterion 10.

So far, the EU Ecolabel did not address information or design requirements effectively, even if construction products and thus floor coverings are considered as resource-intensive products. This is the main reason why the idea of including this criterion was brought on the table. Apart from the requirements of providing information on repairing and the extension of the product guarantee, no additional input was suggested by the stakeholders.

The inclusion of this criterion came before the 2<sup>nd</sup> AHWG meeting and the wording of the criterion was inspired in other EU Ecolabel criteria sets. The issues identified as requirements to ensure the reparability and long lasting of the floor coverings are grouped under:

- Reparability: that includes the requirements on the design of the products, making easier its disassembly (non-destructive) into individual parts or components for replacement and substitution of damaged parts and on the information to carry out or to have this work performed.
- Extended product guarantee to five years instead of the legally bounded two years guarantee. This extension of the product guarantee free of cost and under the same conditions of the legal one is a powerful tool to ensure and demonstrate the quality of the product and its excellent performance. Additionally, the extended product guarantee will help to increase the confidence of the consumers to purchase EU Ecolabel products.

*Further information can be found in section 4.1.8 and 4.2*

## CRITERION 10: Consumer information

### Proposal for criterion 10

The product shall be sold with the relevant consumer information on the packaging or any other documentation accompanying the product. Only the requirements associated with the specific type of flooring have to be fulfilled.

Instructions shall be legible and be provided in the language of the country where the product is placed on the market and/or include graphical representation or icons related to the following aspects:

- Information on the subgroup to which the product belongs (solid or multi-layer wood flooring, cork flooring, cork tile flooring, bamboo flooring, laminate flooring, etc.), the amount of wood, cork or bamboo material in the final product in mass percentage and if a surface treatment is still needed at user's place.

- Recommendations for the installation:

All relevant instructions referring to the best environmental installation practices shall be included:

- floating installation is recommended whenever possible. Reference shall be made to the necessary preparation of the underlying surface and the auxiliary materials needed;

- if a glued down installation is recommended due to the possible longer duration, recommendation of using an adhesive/glue certified with a Type I Ecolabel or a low emission adhesive complying with EMICODE EC1 or equivalent shall be included;

- illustrated assembly and disassembly instructions as per the requirements of criterion 9.a. (if applicable).

- Recommendation for the surface treatment for uncoated floor coverings and floorings needing an oiled surface:

- relevant information about the type and quantity of the coating products needed (e.g. oil or lacquer) to achieve the intended durability;

- relevant information about the coating of the floorings with low emitting coating products in accordance with the Directive 2004/42/EC;

- information about how the service life of the flooring can be extended through renovation e.g. sanding and surface treatment.

- Recommendations for the use, cleaning and maintenance of the product:

- relevant information for routine cleaning shall be included if applicable to the floor covering type, with a mention to cleaning products with a Type I ecolabel;

- maintenance instructions, including maintenance products, and products for renovation or intensive cleaning. If possible, maintenance products with a Type I ecolabel should be recommended;

- a clear statement of the flooring's areas of use and a statement of compliance with the relevant EN standards for the product as referred to in criterion 8.

- Information related to the reparability:

- a clear statement recommending the provision of spare parts as per the

### Proposal for criterion 10

requirements of criterion 9.a.;

- relevant information regarding the terms and conditions of the product guarantee as per the requirements of criterion 9.b.

- Information related to the end-of-life of the product:

A detailed description of the best ways to dispose of the product (i.e. reuse, recycling, energy recovery, etc.) shall be given to the consumer, ranking them according to the impact on the environment.

#### **Assessment and verification**

The applicant shall provide to the competent body a declaration of compliance with the criterion supported by a copy of the consumer information document that is to be provided with the product. The copy shall show compliance with each of the points listed in the criterion, as appropriate

### **Rationale for this proposed criterion**

Information is essential for a proper environmental friendlier behaviour of the end users. Although the floor coverings are not likely to cause significant environmental impacts during the use phase, the information given to the end users is the only way to guarantee that these smaller impacts are reduced.

The first block of information related to the type of flooring awarded with the EU Ecolabel has been introduced during the revision of the criteria due to the discussions on the scope of this scheme. The information regarding the content of wood, cork or bamboo as well as the classification of the floor covering will help consumers to take the purchase decision that better fits their needs.

The second and third block of information regards the installation of the floor covering at the end user's place. Information on this section should indicate/recommend those materials that awarded distinctions due to their outstanding environmental performance such as products labelled by a Type I ecolabel (e.g. type I ecolabel glues or Emicode EC1 glues). If the product is an unfinished product recommendations on the surface treatment to be used should be given.

The fourth block of information regards the use, cleaning and maintenance of the floor covering. A proper cleaning and maintenance ensure the long-lasting life of this type of products. This information includes recommendations on where the floor covering should be installed (e.g. dorms, living rooms, etc), recommendations of the cleaning products and methods as well as recommendation on the maintenance depending on the nature of the floor coverings. Examples of the information to be included are provided in the user manual.

Finally information on the reparability and EoL is provided to help consumers to extend the life of the products and to properly manage it when it is completely replaced.

*Further information can be found in section 4.1.8 and 4.2*



**CRITERION 11: Information appearing on the EU Ecolabel**

<b>Proposal for criterion 11</b>
<p>The logo shall be visible and legible. The EU Ecolabel registration/licence number shall appear on the product and shall be legible and clearly visible.</p> <p>The optional label with text box shall contain the following text: Wood, cork or bamboo material from sustainably managed forests Lower energy consumption for manufacturing Low-emitting product.</p> <p><b>Assessment and verification</b></p> <p>The applicant shall provide to the competent body a declaration of compliance with the criterion supported by a copy of the information appearing on the EU Ecolabel.</p>

**Rationale for this proposed criterion**

Among the proposed changes are the importance of including the EU Ecolabel logo and the application number clearly visible and the limitation to three statements that highlight the main characteristics of the product from the environmental point of view. These modifications are included in the EU Ecolabel regulation (EC) No 66/2010.

Recommendation of the statements to be included has been changing along the revision process. For example, the statement and message highlighting with the sentence "wood, cork or bamboo materials from sustainably managed forest" can also be communicated through the certification logo of the PEFC or FSC schemes if used. Similarly, the communication of being a low emitting product can be communicating by using the logo of E1 and including the remark that this product achieves half to the limits.

However, these characteristics are considered to be the most remarkable ones and therefore it is important to note them. Additionally, the use of the other logos is not mandatory and consequently, it could happen that this information was not communicated to the end users.

*Further information can be found in section 4.1.8 and 4.2*



## 4 TABLE OF COMMENTS

### 4.1 Table of comments from the 2nd AHWG meeting to the TR3.0 (January 2016)

#### 4.1.1 Table of comments and further research on name, scope and definition of the product group

The name, scope and definition wording the comments are on are as follows:

The product group of '**wood-based floor covering**' shall comprise wood- and plant-based pre-manufacturing floor coverings including wood and timber coverings, laminate floorings, cork coverings and bamboo floorings which are made, for more than 80 % in mass (in the final product), from wood, wood powder and/or wood/plant-based material.

Details of the rationale and previous stakeholders' comments considered to redrafting the name, scope and definition can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting.

The comments received through BATIS are summarized in **Table 5**

**Table 5. Stakeholders' feedback on the name, scope and definition**

	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
<b>Name</b>	<p>A precise name for the product group would be "<u>Wood, cork, bamboo and laminate floorings</u>".</p> <p>At the working group meeting it has been discussed whether the name of the product group "Wooden Floor coverings" should be changed into "<u>wood-based floor coverings. We agree with this proposal.</u>"</p> <p>However, since wood might not be the only one material present in floor coverings, we suggest to use the term "<u>wood-derivate floor coverings</u>" in order to avoid confusion for the customer.</p>	<p><b>Partially accepted.</b></p> <p>Two options are pointed out for a new product group name:</p> <p>a) <i>based on the main raw material used for the production.</i> The materials would be wood, wood-based materials, cork and bamboo</p> <p>b) <i>based on the type of floor covering:</i> the name will mainly include wood flooring, engineered wood floorings, cork floorings, cork tiles, bamboo floorings and laminate floorings.</p> <p>Option (a) follows the current name and seems to be supported by a larger number of stakeholders. However, there is no consensus on the exact name.</p>

<p><u>But it does not state clear enough that other floorings e.g. bamboo floorings are not wood or not wood-based since bamboo is a grass and bamboo floorings completely made of bamboo are on the market. In this case the title is misleading the end-user who thinks he buys a wooden-product.</u></p>		<p>Among the proposals received during the project, at the 2<sup>nd</sup> AHWG meeting it was proposed "<b>wood, wood-based, cork and bamboo floor coverings</b>". A new proposal after the meeting suggested "<b>wood, wood-based, cork, cork-based, bamboo and bamboo-based floor coverings</b>" which for the moment is most complete one. However, it is a bit too long and therefore also "<b>wood, cork, bamboo and plant-based floor coverings</b>" is proposed as alternative. Any of the proposals considers the main materials flooring can be made of, is not misleading regarding the wood content of the floorings and included all type of manufacturer processes.</p>
<p><u>Wood-based floor coverings</u> This title is a good improvement. But it does not state clear enough that other floorings e.g. bamboo floorings are not wood or not wood-based since bamboo is a grass and bamboo floorings completely made of bamboo are on the market. <u>In this case the title is misleading the end-user who thinks he buys a wooden-product.</u> That is the reason why in CEN/TC 175/WG 33 the scope is broadened to <u>lignified material other than wood</u>.<sup>21</sup></p>		<p><b>Partially accepted</b></p> <p>Although the proposed idea of including in the product group name the "lignified material other than wood" to indicate the possibility of awarding floorings that are not made of wood or wood-based materials is of significant importance, the terms are considered as too technical and not easy to be understood by the consumers.</p> <p>Keeping in mind the idea proposed, it is suggested in the third revision of the criteria to include the terms of cork and bamboo indicating the two additional materials (cork and bamboo) the flooring included in this scheme can be made of (see above the propose new name).</p>

<sup>21</sup> To understand and clearly differentiate the following definitions and botanic facts have to be taken into consideration:

- wood: lignocellulosic substance between the pith and bark of a tree or a shrub [Source: ISO 24294:2013]
- biological view: Dicotyledones or dicots are characterized by cotyledons (seeds with two embryonic leaves) and produce wood by the activity of the cambium. For the dicots it is the cambium as secondary meristem which is responsible for the growth of thickness. Intervascular and vascular cambium together form the lateral meristem between the xylem and phloem. By that wood is built up inwards as secondary xylem.
- lignified material other than wood: lignocellulosic material deriving from bark of a tree or shrub or from monocotyledonous plants which due to the lack of a growth layer (cambium) are not able to form wood, e.g. bamboo, rattan.
- biological view: Monocotyledonous or monocots do not have a cambium and do not produce wood. Lignified materials may presume a tree-like character by their lignified straws by enclosing lignin in the cell walls and by growing tall. Hereby the growth is determined by the primary apical meristem. The diameter of the stems corresponds to the diameter of the shoot, it becomes hardly thicker. Because of the dissimilarities in the characteristics compared to wood, e.g. mechanical performance, resistance to fungi and insects, deliquescence, and lots more, differences in manufacturing of products from lignified materials other than wood result as well as in their treatment and processability.
- cork: protective layer of the cork oak tree (*Quercus Suber* L), which can be periodically removed from its trunk and branches to provide the raw material for cork products [Source: ISO 9229:2007]
- biological view: Cork develops from the cork cambium, the phellogen outward and is characteristic of the secondary phloem, the inner part of the bark.

<b>Scope and definition</b>	<p><u>Exclusion of floor adhesives:</u> It ensures that end users are provided with the needed information to lay the flooring respecting the environment: not relevant for products (e.g. two-layer parquet) to be glued on the subfloor (e.g. concrete) by specialists because end users do not have the skills for doing so</p>	<p><b>Accepted</b></p> <p>Adhesives for gluing the floor coverings on the structural floor are left out of the EU Ecolabel scope. The main reason is that both products do not fall under the same "<i>product group</i>" defined in the EU Ecolabel Regulation (EC) No 666/2010 as "<i>a set of products that serve similar purposes and are similar in terms of use, or have similar functional properties, and are similar in terms of consumer perception</i>". Adhesives and floor coverings are complemented products but each of them has a different purpose and functional properties.</p>
	<p>for <u>non-structural indoor use</u>? if so, please add</p>	<p><b>Partially accepted</b></p> <p>The word "floor covering" is, according to the definition given in the dictionary, a term to generically describe any finish material applied over a floor structure to provide a walking surface. This term is used interchangeably with flooring but floor covering refers more to the loose-laid materials. Therefore the "non-structural" function is implicit in the term "floor covering" and its addition seems to be redundant.</p> <p>The specification of "indoor" is however needed and therefore accepted.</p>
	<p>It is reasonable to restrict the product group so, that it includes <u>only the pre-manufactured floor coverings</u>.</p> <p>"The products falling under the first group are so-called <u>pre-manufactured</u> wood-based floor coverings and they are the ones to be considered in this revision."</p> <p>If only these products are dealt with and can be awarded the Ecolabel this might be mentioned in the scope write <u>ready to use</u>: The product group of '<u>wood-based floor covering</u>' shall <u>comprise wood- and plant-based pre-manufacturing ready-to-use floor coverings</u></p>	<p><b>Rejected</b></p> <p>Both types of products can be included in the Ecolabel as expressed by stakeholders during the 2nd AHGW. The products as sold are complying with all the criteria and therefore both product types can be awarded. Due to the fact that untreated floorings are usually finished at the user's place, information about the most recommended surface treatment method and materials should be attached to the product.</p>
	<p><u>Linoleum could be included</u> in the product group.</p>	<p><b>Rejected</b></p> <p>Linoleum is a kind of flooring that has likely a higher level of adhesives and which forestry materials do not reach the required level (90% by weight)</p>

	<p>We are in favour of <i>the inclusion of cork</i> in the scope of the product group.</p>	<p><b>Accepted</b></p> <p>Cork floorings are considered as part of this product group due to the large quantities of cork used in the production of the floorings and the global market share (around 2% in EU). The inclusion of cork and bamboo in the criterion has also been supported by several competent bodies after consultation at the EUEB level (meeting held in June 2015).</p>								
	<p>Following the discussions during the 2<sup>nd</sup> AHWG meeting, BEUC and EEB would like to reiterate the need to <i>exclude hybrid floors</i> from the EU Ecolabel scope.</p> <p>Floors which are not made of wood are likely to contain a higher amount of hazardous and unwanted substances. Indeed, hybrid floor can comprise floors made of PVC, carpets or other materials which do not comply with the high safety standards usually required in Ecolabel products.</p>	<p><b>Accepted</b></p> <p>The risk of including hybrid floorings into this product group is limited because of the definition and the scope.</p> <p>Setting up specific thresholds (ie 80% ) will ensure also that only the minimum amount of chemicals needed for a good technical performance of the floorings is used and additionally it will be ensured that only those products classified with laminate, wood, cork or bamboo floorings are able to apply for this scheme.</p> <p>Should the hybrid floorings comply with both requirements (threshold and definition), should they be considered as candidates</p>								
<p><b>Comments during the EUEB meeting June 2016</b></p>										
<p>Product group definition</p>	<p>It is not clear whether or not the paper of the surface layer of the laminate floor coverings is considered to be fibers and if it is included in the 80% of the floor material.</p>	<p><b>Accepted</b></p> <p>The amount of paper is considered in the minimum percentage of wood, cork or bamboo based materials that floor covering shall be made of to award the EU Ecolabel.</p> <p>Although this percentage varies depending on the type of laminate floor covering under consideration the following ranges can be reported:</p> <table border="1"> <thead> <tr> <th>Type of laminate</th> <th>Content of paper</th> </tr> </thead> <tbody> <tr> <td>HDF</td> <td>2-4 % paper</td> </tr> <tr> <td>PDL</td> <td>1.5-1% of paper and water based acrylic paints</td> </tr> <tr> <td>HPL</td> <td>2.2-4.4% of paper</td> </tr> </tbody> </table>	Type of laminate	Content of paper	HDF	2-4 % paper	PDL	1.5-1% of paper and water based acrylic paints	HPL	2.2-4.4% of paper
Type of laminate	Content of paper									
HDF	2-4 % paper									
PDL	1.5-1% of paper and water based acrylic paints									
HPL	2.2-4.4% of paper									

	<p>The very different kind of products in the scope are not clearly separated (nor the relevant criteria) as if all the products had the same environmental impacts in all phases of their life cycle.</p> <p><u>Such a combination would create a dangerous market distortion which will specifically penalize wooden floorings in favour of laminated.</u></p> <p>In conclusion with the aim to avoid any mistake or confusion by consumers and all the negative consequences that the foregoing entails we strongly suggest that specific criteria tailored on the specific life cycles for each kind of products in the scope are defined in specific chapter.</p> <p>The title of the Decision as well as art. 1 should be modified accordingly with regard not to pretend to consider laminated floorings as “wood-based” products.</p>	<p><b>Rejected</b></p>
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As our initial recommendation has been maintaining 90%, any lower threshold will not be supported by us. We advocate for a maximum amount of wood or wood-based material in the product to ensure its safety. As we consider that less wood content means more chemicals, we still disagree with the change of content in the content of the product.

Considering that the current Ecolabel criteria require 90% of wooden material in Floor Coverings, EEB and BEUC are concerned that the change from 90% to 80% or 75% will lead to a less ecological product.

An increase of 15% of other materials than wood which are made of non-renewable sources implies almost doubling the current amount of synthetic or plastic components, which can correlate with higher emissions of formaldehyde or VOCs. By lowering the scope to 75% there will be other materials or glues that may have a higher impact on the environment, lead to higher energy consumption in production and more emissions. Besides the negative environmental impacts inherent to the non-wooden components there may be possible negative effects on recyclability as mixing together materials of a different type are always problematic. Additionally, depending on hazardous substances potentially present in the material, waste materials of mixed wooden flooring might have to be treated as chemical waste<sup>22</sup>.

BEUC and EEB want to avoid any hazardous substances that could undermine the product's potential for re-use, remanufacturing and recycling activities. Hazardous chemicals present in the product will without any doubts hinder the recycling process, remain in the recycled material

and therefore affect consumers' health during the second life of the material. In the context of a circular economy, we consider that the EU Ecolabel is an excellent tool to promote and allow safe, efficient and high quality recycling. The EU Ecolabel can contribute towards reaching the recycling target set by the EC and closing loopholes in a circular economy. We reiterate that the objectives of the EU Ecolabel scheme are to promote safe and environmental-friendly products in a matter of health and environment protection<sup>23</sup>

**Rejected**

No scientific evidence has been found that a lower wooden material content leads neither to a lower environmental impact nor prevents floorings from being recycled, this proposal is rejected and the new proposal suggests a minimum plant-based material limit of 80% wt

A high wooden material content in the floorings ensures a lower used of chemicals and likely makes easier to produce a low emitting VOC and formaldehyde final product. Therefore, 90% in mass could also have been proposed to be kept for solid wood, cork and bamboo floorings, as it seems an ambitious but feasible limit for them

A threshold of 90% in mass for laminate floorings would mean that most of the laminates are excluded from the scope of this EU Ecolabel scheme. As commented, laminate floorings are around 70% of the European market and therefore it does not seem to be appropriate to leave out this product and leave consumers without the information on the best environmental performing products of this subgroup, even if they are a priority choice.

Therefore, a threshold for the wooden material to be contented in the laminate floorings is proposed and set at 80% in mass. The average value of wood-based material content in laminate floorings is around 80-75% in mass. This value will ensure that a large share of the market can be a candidate to be awarded with the EU Ecolabel if all the other requirements are fulfilled.

<sup>22</sup>According to the Commission Decision of 3 May 2000 replacing Decision 94/3/EC Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste: waste from wood preservatives, wastes from the manufacture, formulation supply and use of coating paints (paints, varnishes and vitreous enamels), adhesives, sealants, have to be treated as hazardous waste



	We support this threshold value. (80% in mass)	
other	BEUC and EEB would like to make a suggestion that the JRC has not considered in their report but that we think can have a very valuable contribution for consumers. We suggest requiring <i>manufacturers to apply a detailed composition label in a standardized format on the product</i> which would <i>properly inform the customer about the materials and their quantities being used in the product</i> . Since there are many possibilities of materials such as cork, wood and bamboo, it is essential that the customer knows exactly what the material he is buying for floor covering is made of.	<p><b>Partially accepted</b></p> <p>Information appearing in the EU Ecolabel is proposed to include the type of flooring the product is classified.</p> <p>The environmental product declaration (EPD) is a standardized way of communicating the environmental information of a product. as far as we know, EPD are not mandoty for floorings and therefore criteria cannot rely on this doc as a way of verification.,</p>

### **Further research on extending the scope for the inclusion of linoleum**

**Linoleum** is a floor covering made from materials such as solidified linseed oil (linoxyn), pine rosin, ground cork dust, wood flour, and mineral fillers such as calcium carbonate, most commonly on a burlap or canvas backing; pigments are often added to the materials. Linoleum floors can last for as much as forty years if properly maintained. High quality linoleum is still in use in many places (especially in non-allergenic homes, hospitals and health care facilities) but most of the linoleum floorings has been largely replaced with polyvinyl chloride (yet still colloquially known as "linoleum"), which has similar properties of flexibility and durability, but which has greater brightness and translucency and which is relatively less flammable. The range of material composition for this type of floorings has not been found.

The largest present day manufacturer of linoleum is Kirkcaldy-based Forbo Nairn, which sells the material under the trademarked name of Marmoleum. The company, which is part of the Switzerland-based Forbo Group, is the oldest manufacturer of linoleum in the world.

### **Further research on extending the scope for the inclusion of hybrid floorings**

**Hybrid floorings** are all possible combination of moisture sensitive cores (mainly wood based panels) or temperature sensitive cores (polymers) and surface layers that are thermosetting like melamine or thermoplastics such as but absolutely not restricted to PVC. The surface layers are provided with a coating of all possible materials<sup>24</sup>. Hybrid floorings may have unique properties which differ significantly from the original materials such as higher mechanical strengths (i.e. stiffness), higher biological resistance (i.e. resistances

<sup>23</sup> We are very concerned that the JRC suggestion to reduce the content of wood is *likely to degrade the environmental profile of the EU Ecolabel products*. If the scope lowers to 80% or 75% the content of wood, we strongly recommend to the JRC investigating further and coming up with stringent criteria on dangerous substances and waste treatment.

<sup>24</sup> TH Yang, TH Yang, WC Chao, SY Leu, Characterization of the property changes of extruded wood-plastic composites during year round subtropical weathering, Construction and building materials 83 (2015) 159-168

of hybrid floorings to water absorption and thickness swelling can be significantly improved) or better thermal performance (i.e higher thermal mass that can be used for off-peak storage of thermal energy and reduced and shift to night-time electricity consumption when its costs are lower)<sup>25</sup>. Literature on the properties and characteristics of this product is scarce and for the moment no market data are available.

### **Further research on the minimum quantity of wood, wood-based materials, cork, cork-based materials, bamboo or bamboo-based materials**

The minimum quantity of plant-based materials has been a point for discussion in the last AHWG meetings as well as the EUEB meetings. An open consultation was opened in June 2015 for several weeks. This consultation enquired the opinion of the EUEB members on the type of floorings to be covered by this scheme regarding two points: a) the inclusion or not of flooring with ready finishing and b) the amount of wood, wood-based materials, cork and bamboo.

Four competent bodies replied to the open consultation and the feedback is shown in Table 6. As shown, 2 out of 4 replies are in favour of including the pre-finished and untreated floorings what reveal a tendency to open the scope of the product group. Concerning the percentage of forestry materials, there is no a unanimous opinion on the limit to be set up. One Member State is in favour of keeping the current threshold, another one considered better lowering it and two other considered that it can be lowered if this fact is reflected somehow in the criteria included in the scheme. This diversity in the feedback is in agreement with the feedback received from other stakeholders.

Considering both questions together and the reasons given, and remarking the repeating reasoning of keeping the scope as broad as possible while preserving the coverage of unknown products such as hybrid floorings, a differentiate threshold depending on the type of flooring is proposed. In this sense to minimum material content can be set up:

- a) the current threshold (90% wt) for solid wood, cork and bamboo floorings
- b) 80% in mass for laminate floorings

The advantages of splitting the threshold are among others:

- a) a lower content of chemicals (ie adhesives, surface treatment chemicals, etc) is ensured in three out of four product groups this scheme consists of. In this sense, the expressed concerns about possible higher environmental impacts of the floorings due to their higher content in adhesives is partially dismissed
- b) most of the laminate floorings can be candidates for this scheme. In this sense, the scheme under revision will cover most of the laminate floorings produced and consumed in Europe.

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<sup>25</sup> SG Jeong, J Jeon, J Seo, JH Lee, S Kim, Performance evaluation of the microencapsulated PCM for wood-based flooring application, Energy conversion and management 64 (2012) 516-521

c) the EU Ecolabel does not cover hybrid flooring and this exclusion is supported by two main facts. The first one is that hybrid flooring is not defined as a sub product in the definition (solid wood, laminate, cork or bamboo floorings) and the second one is that it material should be more than 80%.

**Table 6 Feedback from stakeholders regarding the scope and definition of the wooden floor covering product group**

	<b>Should the scope of the product group be <u>narrowed by including the terms 'pre-manufactured' or 'pre-finished' into the definition of the product group?</u></b>	<b>Should the <u>percentage of wood, wood powder and/or wood-plant-based material (in the final product) be reduced from current 90% down to 80- 75%?</u></b>
Denmark	The <i>scope should be as broad as possible</i> and not only include "ready to use products".	The <i>limit of 90% can be discussed</i> but if lowering the limit more weight should be put to the non-wood fraction, hence this part will then have a higher weight looking at the whole product.
Belgium	We are <i>not in favour to narrow the scope</i> of the product group by including the terms "pre-finished" into the definition of the product group. The scope should be as broad as possible	We <i>would like to keep the current limit of 90%</i> . A reduction of this limit needs to be in balance with the other criteria.
Estonia		We <i>support 75%wt for minimum wood and plant-material quantity</i> . We support excluding hybrid flooring.
Italy	The p. g. scope should not be narrowed to only "pre-finished" products. For the unfinished coverings it should be clearly stated in EU Ecolabel Box 2 that a surface treatment is needed at the user's place. For the pre-finished coverings it should be clearly stated in EU Ecolabel Box 2 that no other surface treatment is needed at the user's place.	The percentage of wood in the final wooden as well as wood-based products shouldn't be lower than 90%. The percentage of bamboo in the final bamboo products shouldn't be lower than 90%. The percentage of cork in the final cork products shouldn't be lower than 90%. The percentage of wood in the final laminated products shouldn't be lower than 90%.

Industry Parquet	<p>YES the scope of the product group is narrowed to only 'pre-finished' products, because the unfinished floorings need surface treatment to be applied at user's place with lower amount of chemicals used by the manufacturers and easier compliance with the Ecolabel criteria.</p> <p>An Ecolabel unfinished flooring can't give guarantee to consumers about the indoor quality, VOC content, hazardous substances or SVHC substances, content, etc. after the surface treatment that is applied at user's place with no ecolabel criteria on chemical products used.</p> <p>Ecolabel 'pre-finished' products give to consumer the guarantee of the respect of Ecolabel criteria. If the unfinished flooring will be included in the scope of the product group it is necessary to eliminate the verification of VOCs and formaldehyde emissions/content at the final product level (the criterion 6.1 Indoor emission) and leave only the verification of VOCs and formaldehyde emissions/content at the raw materials level.</p>	<p>NO because scope of the product group is wood-based floor covering and it is necessary valorise the naturally origin of the product.</p> <p>If the percentage of wood will be reduced to 75% it is necessary verify if specific criteria or thresholds different for laminate and solid wood/parquet have to be defined in this Decision (for example for indoor emission like Nordic Eco labelling Floor coverings version 6.0) or if it is better define another specific decision for laminate.</p> <p>If the percentage of wood will be reduced to 75% it is necessary to introduce in criterion 7 Information obligation to communicate the percentage of wood.</p>
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Due to the fewer responses collected, a second questionnaire was sent to all competent bodies in September 2015. In this occasion, competent bodies were asked to express their preferences on three alternatives. The questionnaire contained the following information:

*"If the threshold is kept at 90% in mass, most of the laminate floorings on the market (representing 70% of the whole WFC market) can not apply for the EU Ecolabel. Therefore, it has been proposed to reduce this threshold, but concerns have been expressed by some stakeholders that a higher amount of other materials may mean a higher environmental impact. This fact is not scientifically proven. The remaining 10-20% in mass of the product will consist of components (such as adhesives, sealants, coatings, etc) which include chemicals whose environmental impacts are expected to be covered mainly by criterion 2 and 3 (restriction of general and specific chemicals). ..... Then, at this point, we would like to have your opinion on reducing the limit on wood, wood powder and/or wood/plant based materials. The options that we have for the scope are the following ones:*

- a) Keep the current threshold (90% in mass) covering totally the wood and bamboo flooring markets and partially the cork flooring market. Only few laminates floorings will be able to apply for, and therefore we will continue to address only a limited portion of the market (currently 1 EU Ecolabel license holder)*
- b) Decrease the threshold to 80% in mass: the four product groups will be able to apply for*

- c) *Split the threshold keeping a minimum content of 90% in mass for wood flooring and bamboo flooring (even cork flooring could be included here) and setting a new separate threshold of 80% in mass for laminates covering most of the laminate floorings.*

The replies are collected in Table 7

**Table 7. Replies to the second questionnaire sent to the competent bodies in September 2015 on the scope and definition of this product group**

<b>Competent body</b>	<b>Opinion/feedback</b>
Belgium	We could accept to split the threshold but we would like to amend the option c) as follows : <ul style="list-style-type: none"> <li>- Min. 90% (in mass) in the final product for wood flooring and bamboo flooring (even cork flooring could be included here).</li> <li>- For laminate flooring: min. 80% (in mass) in the final product, but min. 90% (in mass) in the wood-based panel.</li> </ul>
Czech Republic	Considering very low attractiveness of most of the new/revised criteria sets lately, we think that option c) is well justified
Norway	Norway thinks we should have a broad product group covering as many wooden floors as possible. We will therefore accept to reduce the threshold of wood to 80% of the final product. We must of course also have good criteria on the remaining 20% of the product. In line with this, we also want to include floorings that are installed as untreated floors, and where the customer chooses the final finish with the final oil/wax/varnish and matt or glossy as he wish. We can either look at this in the same way as we look at textile-fiber which can be ecolabelled on their own, or we can require that the floor producer shall include one or more preferred surface treatments in the application, complying with the criteria. This or these surface treatments shall be offered to be sold together with the flooring, but made optional for the final customer. Both options are acceptable for us.
Denmark	Our major concern in regards to lowering the limit I what about the not material – this will have a higher weight. Your suggestion will lower our concerns and we will support to have also laminate flooring included. I think you have argued that the non-wood part of a laminate floor is covered by chemical requirement. I will recommend repeating this and explaining again which materials we are taking about at the next meeting. This will probably hinder a discussion of the non-wood part.
Finland	We can accept alternatives b) and c). The Finnish ecolabelling board has in their opinion already stated that alternative b) is acceptable. If it can be justified that the alternative c) would be more reasonable, we can accept it also

Italy	<p>The percentage of wood in the final wooden as well as wood-based products shouldn't be lower than 90%.</p> <p>The percentage of bamboo in the final bamboo products shouldn't be lower than 90%.</p> <p>The percentage of cork in the final cork products shouldn't be lower than 90%.</p> <p>The percentage of wood in the final laminated products shouldn't be lower than 90%.</p>
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### **Further research on the references to CEN/TS in the definition of the products**

The existing definitions of the four main products this scheme consists in are followed by a reference to the CEN/TS, where the technical position of the industry is reflected. For example, in the case of wood and timber coverings reference to the CEN/TS 112 is added or in the case of laminate floorings reference to the CEN/TS 134.

The core business of the Technical Specification (CEN/TS) is to develop and publish European Standards and technical specifications that meet the evolving needs of European business and other organizations. This important work brings concrete benefits, such as improving safety, quality and reliability of products, services and processes, reinforcing a single market and the economic growth and the spread of technologies and innovation.

The standards, under CEN, are developed on the knowledge of experts and the cooperation with organizations representing the different stakeholders, including consumers, workers, environmental interests and SMEs. CEN produces a set of deliverables - differing in the levels of transparency, consensus and approval required before issue, offering a flexible means to meet market needs for technical requirements and information. Amongst these, CEN/TS serves as normative document in areas where the actual state of the art is not yet sufficiently stable for a European Standard (EN).

CEN/TS is, then, a normative document made available by CEN, approved by a CEN Technical Committee by a weighted vote of CEN National Member and announced and made available at national level. Conflicting national standards may continue to exist. CEN/TS may compete against another CEN/TS with the same scope, but a CEN/TS may not conflict with a European Standard. This implies that existing CEN/TS shall be withdrawn if the publication of a subsequent EN brings the CEN/TS conflict with that EN.

The reason why CEN/TS is chosen/selected to be developed is to provide an 'appropriate' consensus/transparency solution to a market need where there is no immediate need for national implementation and withdrawal of conflicting national standards. CEN/TS can be transformed into a EN and thus may serve as a CEN 'pre-standard'. This pre-standardization role is further acknowledged through the possibility of allowing 'competing' Technical Specifications which permits CEN to test two (or more) solutions to a specific market need: with experience, the preferred solution could then be transformed into EN.

The CEN/TS can act as a pre-standard, but it can also be accepted that the 'appropriate consensus' represented by the CEN/TS could continue to meet a market need without eventual conversion into an EN. CEN/TS may be established with a view to serving for instance the purpose of:

- publishing aspects of a subject which may support the development and progress of the European market but where a European standard is not feasible or not yet feasible;
- giving guidance to the market on or by specifications and related test methods;

- providing specifications in experimental circumstances and/or evolving technologies

Furthermore, a CEN Technical Committee may decide to publish a work item, originally intended to result in an EN, as a CEN/TS where:

- there had been insufficient support at the CEN Enquiry for the work item to progress to an EN;
- no consensus can be reached on the submission of the work item to Formal Vote within the given target date.

It may also be preferable to publish two or more CEN/TS if, for instance, the draft EN had dealt with more than one class of product, or included alternative methods of test. CEN/TS may, therefore, compete with each other. The process of elaboration (drafting), translation and voting is summarized in <http://boss.cen.eu/developingdeliverables/TS/Pages/default.aspx>

The CEN/TS 112 aggregates norms and standards focused on the definition, characteristics, classification and other aspects related to the wood core boards. The list of standards compiled in 2012 is shown in Table 8

**Table 8. List of standards grouped under CEN/TS 112 in 2005**

Norm	Date	Title-definition
EN 120	1992-07-00	Wood based panels; determination of formaldehyde content; extraction method called the perforator method
CR 213	1984-06-00	Particle boards; determination of formaldehyde emission under specified conditions; method called formaldehyde emission method
EN 300	1997-03-00	Oriented Strand Boards (OSB) - Definitions, classification and specifications
EN 309	1992-07-00	Wood particleboards; definition and classification
EN 310	1993-02-00	Wood-based panels; determination of modulus of elasticity in bending and of bending strength
EN 311	2002-05-00	Wood-based panels - Surface soundness - Test method
EN 312	2003-08-00	Particleboards - Specification
EN 313-1	1996-03-00	Plywood - Classification and terminology - Part 1: Classification
EN 313-2	1999-10-00	Plywood - Classification and terminology - Part 2: Terminology
prEN 314-1	2001-10-00	Plywood - Bonding quality - Part 1: Test methods
EN 314-1	1993-02-00	Plywood; bonding quality; part 1: test methods

EN 314-2	1993-02-00	Plywood; bonding quality; part 2: requirements
EN 315	2000-07-00	Plywood - Tolerances for dimensions
EN 316	1999-09-00	Wood fibreboards - Definition, classification and symbols
EN 317	1993-02-00	Particleboards and fibreboards; determination of swelling in thickness after immersion in water
EN 318	2002-03-00	Wood based panels - Determination of dimensional changes associated with changes in relative humidity
EN 319	1993-02-00	Particleboards and fibreboards; determination of tensile strength perpendicular to the plane of the board
EN 320	1993-02-00	Fibreboards; determination of resistance to axial withdrawal of screws
EN 321	2001-11-00	Wood-based panels - Determination of moisture resistance under cyclic test conditions
EN 322	1993-02-00	Wood-based panels; determination of moisture content
EN 323	1993-02-00	Wood-based panels; determination of density
EN 324-1	1993-02-00	Wood-based panels; determination of dimensions of boards; part 1: determination of thickness, width and length
EN 324-2	1993-02-00	Wood-based panels; determination of dimensions of boards; part 2: determination of squareness and edge straightness
EN 325	1993-02-00	Wood-based panels; determination of dimensions of test pieces
EN 326-1	1994-02-00	Wood-based panels - Sampling, cutting and inspection - Part 1: Sampling and cutting of test pieces and expression of test results
EN 326-2	2000-07-00	Wood-based panels - Sampling, cutting and inspection - Part 2: Quality control in the factory
EN 326-3	2003-11-00	Wood-based panels - Sampling, cutting and inspection - Part 3: Inspection of an isolated lot of panels
EN 335-3	1995-07-00	Durability of wood and wood-based products - Definition of hazard classes of biological attack - Part 3: Application to wood-based panels
EN 382-1	1993-02-00	Fibreboards; determination of surface absorption; part 1: test method for dry process fibreboards



EN 382-2	1993-11-00	Fibreboards; determination of surface absorption; part 2: test method for hardboards
EN 622-1	2003-04-00	Fibreboards - Specifications - Part 1: General requirements
prEN 622-2	2003-08-00	Fibreboards - Specifications - Part 2: Requirements for hardboards / Note: Intended as replacement for EN 622-2 (1997-06).
EN 622-2	1997-06-00	Fibreboards - Specifications - Part 2: Requirements for hardboards / Note: To be replaced by prEN 622-2 (2003-08).
prEN 622-3	2003-08-00	Fibreboards - Specifications - Part 3: Requirements for medium boards / Note: Intended as replacement for EN 622-3 (1997-06).
EN 622-3	1997-06-00	Fibreboards - Specifications - Part 3: Requirements for medium boards / Note: To be replaced by prEN 622-3 (2003-08).
EN 622-4	1997-06-00	Fibreboards - Specifications - Part 4: Requirements for softboards
EN 622-5	1997-06-00	Fibreboards - Specifications - Part 5: Requirements for dry process boards (MDF)
EN 633	1993-10-00	Cement-bonded particleboards; definition and classification
EN 634-1	1995-03-00	Cement-bonded particleboards - Specification - Part 1: General requirements
EN 634-2	1996-08-00	Cement-bonded particleboards - Specifications - Part 2: Requirements for OPC bonded particleboards for use in dry, humid and exterior conditions
EN 635-1	1994-12-00	Plywood - Classification by surface appearance - Part 1: General
EN 635-2	1995-05-00	Plywood - Classification by surface appearance - Part 2: Hardwood
EN 635-3	1995-05-00	Plywood - Classification by surface appearance - Part 3: Softwood
ENV 635-4	1996-09-00	Plywood - Classification by surface appearance - Part 4: Parameters of ability for finishing, guideline
EN 635-5	1999-03-00	Plywood - Classification by surface appearance - Part 5: Methods for measuring and expressing characteristics and defects
EN 636	2003-07-00	Plywood - Specifications
prEN 717-1	2002-05-00	Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method

ENV 717-1	1998-12-00	Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method
EN 717-2	1994-11-00	Wood-based panels - Determination of formaldehyde release - Part 2: Formaldehyde release by the gas analysis method
EN 717-2/AC	2002-07-00	Wood-based panels - Determination of formaldehyde release - Part 2: Formaldehyde release by the gas analysis method; Amendment AC
EN 717-3	1996-03-00	Wood-based panels - Determination of formaldehyde release - Part 3: Formaldehyde release by the flask method
EN 1072	1995-07-00	Plywood - Description of bending properties for structural plywood
EN 1084	1995-06-00	Plywood - Formaldehyde release classes determined by the gas analysis method
EN 1087-1	1995-02-00	Particleboards - Determination of moisture resistance - Part 1: Boil test
ENV 1099	1997-10-00	Plywood - Biological durability - Guidance for the assessment of plywood for use in different hazard classes
EN 1128	1995-10-00	Cement-bonded particleboards - Determination of hard body impact resistance
ENV 1156	1998-12-00	Wood-based panels - Determination of duration of load and creep factors
EN 1328	1996-08-00	Cement bonded particleboards - Determination of frost resistance
EN 12369-1	2001-01-00	Wood-based panels - Characteristic values for structural design - Part 1: OSB, particleboards and fibreboards
EN 12369-2	2004-02-00	Wood-based panels - Characteristic values for structural design - Part 2: Plywood
EN 12775	2001-01-00	Solid wood panels - Classification and terminology
EN 12871	2001-05-00	Wood-based panels - Performance specifications and requirements for load bearing boards for use in floors, walls and roofs
ENV 12872	2000-07-00	Wood-based panels - Guidance on the use of load-bearing boards in floors, walls and roofs
EN 13017-1	2000-11-00	Solid wood panels - Classification by surface appearance - Part 1: Softwood
EN 13017-2	2000-11-00	Solid wood panels - Classification by surface appearance - Part 2: Hardwood

EN 13353	2003-06-00	Solid wood panels (SWP) - Requirements
CEN/TS 13354	2003-05-00	Solid wood panels - Bonding quality - Test method
EN 13446	2002-05-00	Wood-based panels - Determination of withdrawal capacity of fasteners
EN 13810-1	2002-12-00	Wood-based panels - Floating floors - Part 1: Performance specifications and requirements
CEN/TS 13810-2	2003-04-00	Wood-based panels - Floating floors - Part 2: Test methods
EN 13879	2002-05-00	Wood-based panels - Determination of edgewise bending properties
prEN 13986	2004-03-00	Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking / Note: Intended as replacement for EN 13986 (2002-06).
EN 13986	2002-06-00	Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking / Note: To be replaced by prEN 13986 (2004-03).
ENV 14272	2002-06-00	Plywood - Calculation method for some mechanical properties
prEN 14279	2001-10-00	Laminated Veneer Lumber (LVL) - Specifications, definitions, classification and requirements
prEN 14322	2003-10-00	Wood-based panels - Melamine faced boards for interior uses - Definitions, requirements and classification
prEN 14323	2003-10-00	Wood-based panels - Melamine faced boards for interior uses - Test methods
prEN 14354	2001-12-00	Wood-based panels - Wood veneer floor covering
prEN 14755	2003-08-00	Extruded particleboards - Specifications

Similarly, the CEN/TS 134 groups the standards and norms that are related to the laminate and cork floorings. Further details are given in Table 9

**Table 9. List of standards grouped under CEN/TS 134 in 2005**

Norm	Date	Title-definition
EN 423	2001-12-00	Resilient floor coverings - Determination of resistance to staining

EN 424	2001-12-00	Resilient floor coverings - Determination of the effect of simulated movement of a furniture leg
EN 425	2002-04-00	Resilient and laminate floor coverings - Castor chair test
EN 426	1993-09-00	Resilient floorcoverings; determination of width, length, straightness and flatness of sheet material
EN 427	1994-08-00	Resilient floor coverings - Determination of the side length, squareness and straightness of tiles
EN 428	1993-09-00	Resilient floor coverings; determination of overall thickness
EN 429	1993-09-00	Resilient floor coverings; determination of the thickness of layers
EN 430	1994-08-00	Resilient floor coverings - Determination of mass per unit area
EN 431	1994-08-00	Resilient floor coverings - Determination of peel resistance
EN 432	1994-08-00	Resilient floor coverings - Determination of shear force
EN 433	1994-08-00	Resilient floor coverings - Determination of residual indentation after static loading
EN 434	1994-08-00	Resilient floor coverings - Determination of dimensional stability and curling after exposure to heat
EN 435	1994-08-00	Resilient floor coverings - Determination of flexibility
EN 436	1994-08-00	Resilient floor coverings - Determination of density
prEN 548	2004-01-00	Resilient floor coverings - Specification for plain and decorative linoleum / Note: Intended as replacement for EN 548 (1997-05).
EN 548	1997-05-00	Resilient floor coverings - Specification for plain and decorative linoleum / Note: To be replaced by prEN 548 (2004-01).
EN 649	1996-10-00	Resilient floor coverings - Homogeneous and heterogeneous polyvinyl chloride floor coverings - Specification
EN 649/A1	2003-10-00	Resilient floor coverings - Homogeneous and heterogeneous polyvinyl chloride floor coverings - Specification; Amendment A1
EN 650	1996-10-00	Resilient floor coverings - Polyvinyl chloride floor coverings on jute backing or on polyester felt backing or on polyester felt with polyvinyl chloride backing - Specification

EN 651	1996-10-00	Resilient floor coverings - Polyvinyl chloride floor coverings with foam layer - Specification
EN 651/A1	2003-10-00	Resilient floor coverings - Polyvinyl chloride floor coverings with foam layer - Specification; Amendment A1
EN 652	1996-10-00	Resilient floor coverings - Polyvinyl chloride floor coverings with cork-based backing - Specification
EN 653	1996-10-00	Resilient floor coverings - Expanded (cushioned) polyvinyl chloride floor coverings - Specification
EN 654	1996-10-00	Resilient floor coverings - Semi-flexible polyvinyl chloride tiles - Specification
EN 654/A1	2003-10-00	Resilient floor coverings - Semi-flexible polyvinyl chloride tiles - Specification; Amendment A1
EN 655	1996-10-00	Resilient floor coverings - Tiles of agglomerated composition cork with polyvinyl chloride wear layer - Specification
EN 660-1	1999-04-00	Resilient floor coverings - Determination of wear resistance - Part 1: Stuttgart test
EN 660-1/A1	2003-04-00	Resilient floor coverings - Determination of wear resistance - Part 1: Stuttgart test; Amendment A1
EN 660-2	1999-04-00	Resilient floor coverings - Determination of wear resistance - Part 2: Frick-Taber test
EN 660-2/A1	2003-04-00	Resilient floor coverings - Determination of wear resistance - Part 2: Frick-Taber test; Amendment A1
EN 661	1994-11-00	Resilient floor coverings - Determination of the spreading of water
EN 662	1994-11-00	Resilient floor coverings - Determination of curling on exposure to moisture
EN 663	1994-11-00	Resilient floor coverings - Determination of conventional pattern depth
EN 664	1994-11-00	Resilient floor coverings - Determination of volatile loss
EN 665	1994-11-00	Resilient floor coverings - Determination of exudation of plasticizers
EN 666	1994-11-00	Resilient floor coverings - Determination of gelling
prEN 667	1992-03-00	Rubber floor coverings; determination of indentation hardness by means of a durometer (Shore A hardness)

prEN 668	1992-03-00	Rubber floor coverings; determination of abrasion resistance using a rotating cylindrical drum device and non-rotating sample holder
EN 669	1997-09-00	Resilient floor coverings - Determination of dimensional stability of linoleum tiles caused by changes in atmospheric humidity
EN 670	1997-09-00	Resilient floor coverings - Identification of linoleum and determination of cement content and ash residue
EN 672	1996-12-00	Resilient floor coverings - Determination of apparent density of agglomerated cork
EN 684	1995-12-00	Resilient floor coverings - Determination of seam strength
EN 685	1995-12-00	Resilient floor coverings - Classification
EN 685/A1	2003-04-00	Resilient floor coverings - Classification; Amendment A1
EN 686	1997-05-00	Resilient floor coverings - Specification for plain and decorative linoleum on a foam backing
EN 687	1997-05-00	Resilient floor coverings - Specification for plain and decorative linoleum on a corkment backing
EN 688	1997-05-00	Resilient floor coverings - Specification for corklinoleum
EN 718	1995-12-00	Resilient floor coverings - Determination of mass per unit area of a reinforcement for a backing of polyvinyl chloride floor coverings
EN 984	2001-12-00	Textile floor coverings - Determination of the mass per unit area of the use surface of needled floor coverings
EN 985	2001-07-00	Textile floor coverings - Castor chair test
EN 986	1995-04-00	Textile floor coverings - Tiles - Determination of dimensional changes due to the effects of varied water and heat conditions and distortion out of plane / Note: To be replaced by prEN 986 (2004-03) (in preparation).
EN 986/AC	1998-04-00	Textile floor coverings - Tiles - Determination of dimensional changes due to the effects of varied water and heat conditions and distortion out of plane; Amendment AC
EN 994	1995-07-00	Textile floor coverings - Determination of the side length, squareness and straightness of tiles
EN 995	1995-07-00	Textile floor coverings - Assessment of the creep of the backings
EN 1081	1998-01-00	Resilient floor coverings - Determination of the electrical resistance

EN 1269	1997-02-00	Textile floorcoverings - Assessment of impregnations in needled floorcoverings by means of a soiling test
prEN 1307	2002-09-00	Textile floor coverings - Classification of pile carpet
EN 1307	1997-01-00	Textile floor coverings - Classification of pile carpets
EN 1318	1996-12-00	Textile floor coverings - Determination of the apparent effective thickness of the backing
EN 1399	1997-09-00	Resilient floor coverings - Determination of resistance to stubbed and burning cigarettes
EN 1399/AC	1998-04-00	Resilient floor coverings - Determination of resistance to stubbed and burning cigarettes; Amendment AC
EN 1470	1997-10-00	Textile floor coverings - Classification of needled floor coverings except for needled pile floor coverings
EN 1471	1996-12-00	Textile floor coverings - Assessment of changes in appearance
EN 1471/A1	2003-10-00	Textile floor coverings - Assessment of changes in appearance; Amendment A1
EN 1813	1997-10-00	Textile floor coverings - Determination of wool fibre integrity using an abrasion machine
EN 1814	1997-11-00	Textile floor coverings - Determination of resistance to damage at cut edges using the modified Vettermann drum test
EN 1815	1997-11-00	Resilient and textile floor coverings - Assessment of static electrical propensity
EN 1816	1998-03-00	Resilient floor coverings - Specification for homogeneous and heterogeneous smooth rubber floor coverings with foam backing
EN 1817	1998-03-00	Resilient floor coverings - Specification for homogeneous and heterogeneous smooth rubber floor coverings
EN 1818	1998-09-00	Resilient floor coverings - Determination of the effect of loaded heavy duty castors
EN 1963	1997-10-00	Textile floor coverings - Tests using the Lisson Tretrad Machine
EN 12103	1999-03-00	Resilient floor coverings - Agglomerated cork underlays - Specification
EN 12104	2000-05-00	Resilient floor coverings - Cork floor tiles - Specification

EN 12105	1998-07-00	Resilient floor coverings - Determination of moisture content of agglomerated composition cork
EN 12199	1998-03-00	Resilient floor coverings - Specifications for homogeneous and heterogeneous relief rubber floor coverings
EN 12455	1999-09-00	Resilient floor coverings - Specification for corkment underlay
EN 12466	1998-03-00	Resilient floor coverings - Vocabulary
EN 13297	2000-08-00	Textile floor coverings - Classification of needled pile floor coverings
EN 13329	2000-06-00	Laminate floor coverings - Specifications, requirements and test methods
EN 13413	2001-12-00	Resilient floor coverings - Polyvinyl chloride floor coverings on a filled fibrous backing - Specification
EN 13553	2002-04-00	Resilient floor coverings - Polyvinyl chloride floor coverings for use in special wet areas - Specification
prEN 13845	2003-08-00	Resilient floor coverings - Polyvinyl chloride floor coverings with enhanced resistance - Specification
EN 13893	2002-11-00	Resilient, laminate and textile floor coverings - Measurement of dynamic coefficient of friction on dry floor surfaces
prEN 14041	2003-10-00	Resilient, textile and laminate floor coverings - Health, safety and energy-saving requirements
EN 14085	2003-03-00	Resilient floor coverings - Specification for floor panels for loose laying
prEN 14159	2001-05-00	Textile floor coverings - Recommendations for tolerances on (linear) dimensions of rugs and wall-to-wall carpet and for tolerances on pattern repeat
EN 14215	2003-05-00	Textile floor coverings - Classification of machine-made pile rugs and runners
CEN/TS 14472-1	2003-06-00	Resilient, textile and laminate floor coverings - Design, preparation and installation - Part 1: General
CEN/TS 14472-2	2003-06-00	Resilient, textile and laminate floor coverings - Design, preparation and installation - Part 2: Textile floor coverings
CEN/TS 14472-3	2003-06-00	Resilient, textile and laminate floor coverings - Design, preparation and installation - Part 3: Laminate floor coverings
CEN/TS 14472-4	2003-06-00	Resilient, textile and laminate floor coverings - Design, preparation and installation - Part 4: Resilient floor coverings



prEN 14499	2002-06-00	Textile floor coverings - Classification of carpet underlays
prEN 14521	2004-01-00	Resilient floor coverings - Specifications for smooth rubber floor coverings with or without foam backing and with a decorative layer
prEN 14565	2003-12-00	Resilient floor coverings - Floor coverings based upon synthetic thermoplastic polymers - Specification
EN ISO 11378-2	2001-05-00	Textile floor coverings - Laboratory soiling tests - Part 2: Drum test (ISO 11378-2:2001)
EN ISO 11857	2002-01-00	Textile floor coverings - Determination of resistance to delamination (ISO 11857:1999)
prEN ISO 21868	2002-02-00	Textile floor coverings - Guidelines for maintenance and cleaning (ISO/DIS 21868:2002)

As shown, the reference to the CEN/Ts that group the standards where the products are classified do not bring additional information to the definition although it restricts or limits other norms and standards that can be proposed to define the products. It is proposed to leave them out of the definition.

#### 4.1.2 Table of comments and further research on definitions

Several terms are defined in the legal text. These terms are needed to be revised as well. This section provides an overview of the terms required to be revised, the new definitions and the sources of information used

**Table 10 Definitions: terms revised**

Term	Definition	Rationale and sources of information
Certified evidence	No definition was found.	The meaning in context would mean that any evidence provided by a certified institution
Final product	In production, a final product is a product that is ready for sale without significant further processing	Wouters, Mark; Selto, Frank H.; Hilton, Ronald W.; Maher, Michael W. (2012): <i>Cost Management: Strategies for Business Decisions</i> , International Edition, Berkshire (UK), p. 532.

Final stages of the production	No definition was found No longer needed as the focus of the criterion has been changed to the whole product.	The meaning in context would mean the last stages of the flooring production. Generally speaking the production stages are reception and preparation of the log (including cleaning, drying and cutting), hot pressing (being different processes depending on the type of flooring) and subsequently application of the surface treatment (if needed). Afterwards the floorings are packed, storage and delivered. Context indicates that final stages of the production mainly refer to the application of the surface treatment.
Parquet	1. Wood floor covering element with a top layer of minimum 2 mm prior to installation. 2. Assembly of the above with a defined pattern.	prEN 13756:1999
Solid wood floor coverings	<u>Solid wood floors a solid piece of wood from top to bottom.</u> The thickness of solid wood flooring can vary, but generally ranges from 3/4" to 5/16". One of the many benefits of solid wood flooring is that it can be sanded and refinished many times. Solid wood flooring can be installed above or on grade <u>Engineered wood floors are real wood floors that are manufactured using multiple layers of different wood veneers.</u> The sub layers can be of the same species, or of different species. The grain of each layer runs in different directions, which makes it very stable. This means that the wood will expand and contract less than solid wood flooring during fluctuations in humidity and temperature. The top layer of engineered wood flooring consists of high-quality wood. While this type of flooring can be sanded and finished, it cannot be done as many times as solid wood flooring. Engineered wood flooring can be installed above, on or below grade.	<a href="http://woodfloors.org/types.aspx">http://woodfloors.org/types.aspx</a> The so-called "solid wood flooring" in the TR2.0 refers to both types of flooring.

Third party certification body	Third-party certification means that an independent organization has reviewed the manufacturing process of a product and has independently determined that the final product complies with specific standards for safety, quality or performance. This review typically includes comprehensive formulation/material reviews, testing and facility inspections. Most certified products bear the certifier's mark on their packaging to help consumers and other buyers make educated purchasing decisions.	<a href="http://www.nsf.org/about-nsf/what-is-third-party-certification/">http://www.nsf.org/about-nsf/what-is-third-party-certification/</a>
Accredited third party laboratories	See below the description for: - accredited testing laboratory - third party laboratory An accredited third party laboratory is an independent testing laboratory that meets the general requirements of ISO/IEC 17025	Accredited laboratory requirement has been removed in line with other EU Ecolabel criteria sets. This requirement has been replaced by "Where possible, the testing should be performed by laboratories that meet the general requirements of EN ISO 17025 or equivalent"
Accredited laboratory	Accredited laboratories are testing organizations that meet the general requirements of ISO 17025 or any other scheme considered as equivalent. In the case of ISO 17025, a list of accredited third party laboratories, and the tests for which they are accredited, may be found on the web site <a href="http://european-accreditation.org/">http://european-accreditation.org/</a> .	
Third party laboratory	Third party laboratories are testing organizations that carried out third-party activities independent of the activities carried out by manufacturers and suppliers and activities performed by buyers, users or consumers. Third party laboratories are independent organizations that may include non-federal government, university, private and other institutional laboratories.	

**Further research on accredited laboratories.**

The requirement of testing the product in an accredited laboratory is deleted in the last proposal. However, in the EU Ecolabel regulation states: ***"Where possible, the testing should be performed by laboratories that meet the general requirements of EN ISO 17025 or equivalent"***. This requirement indicates the preference of testing the products by laboratories that have certain management procedures in place that guarantee the reproducibility and repeatability of the testing.

The **ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories"** specifies the general requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed

using standard methods, non-standard methods and laboratory-developed methods. This ISO standard is applicable to all organizations performing tests and/or calibrations. These include first-, second- and third-party laboratories and laboratories where testing and calibration forms part of inspection and production certification. ISO/IEC 17025 is for use by laboratories in developing their management system for quality, administrative and technical operations. Laboratory customers, regulatory authorities and accreditation bodies may also use it in confirming or recognizing the competence of laboratories. The laboratories that are accredited are listed by country and it is available at: <http://european-accreditation.org/>.

However, there is a scarcity on the market of laboratories and institutions complying with the requirements of ISO 17025 due to the phase-out of this standard. This is the main reason (the market distortion that this requirement will create) why the compliance with ISO 17025 has been deleted from the wording of the assessment and verification of the last voted EU Ecolabel criteria sets. The requirements are no longer explicitly required and an open formulation has been preferred.

Good laboratories practice (GLP) is another regulation to assure data quality, but if it shares the same end objective that ISO 17025, their means to this end are markedly different. GLP regulations focus on requirements for a study plan, appointment of a study director, inspections of each study by a Quality Assurance Unit and specific requirements for data storage. ISO 17025 provides much more detailed requirements than GLPs for analytical issues as the selection of method, equipment maintenance and calibration and measurement traceability. ISO 17025 also requires a Quality manual, GLP regulations don't. When some laboratories have to comply with both GLP regulations and ISO 1705 requirements they generate a quality manual and standard operating procedures that meet the general requirements of ISO 17025 and include additional specifications for GLP studies. All in all the GLP regulation can be considered, in most of the cases, as equivalent to the ISO 17025

Further information about what can be considered as equivalent can be found in the user manual

#### **Further research on first- second- and third party laboratory**

Testing is defined according to EN 45020 as "technical operation that consists of the determination of one or more characteristics of a given product, process or service according to a specified procedure". Different parties can be involved in testing activities and therefore one distinguishes between

first-party activities carried out by manufacturers and suppliers

second-party activities performed by buyers, users or consumers

third-party activities done by organisations independent of the above mentioned parties.

First-party testing is for example used as an internal quality control measure that the products, materials, items and services are up the requirements expressed in legislation, standards, technical specifications and contracts with the clients. The manufacturers' declaration of conformity expressed by different ways of marking the product is often based also on the outcome of these tests.

Second-party testing is performed by the receiver of the products, materials, items and services mainly in order to ensure that agreed requirements and specifications are fulfilled. For ordinary consumers, testing can be performed by consumer interest organisations or buyer organisations of products.

Third-party testing is especially required, preferred or used if the results have a considerable influence or effect on public or societal issues, in particular related to health, environment, safety and large economic values. Third-party testing is expected to provide a nonbiased view and thus a better confidence in the test results. The public sector prefers to use independent third-party testing laboratories to provide objective evidence and facts for studies, evaluations, analyses and technical support for decision making processes. This is the main reason why third party verification is large proposed in the EU Ecolabel.

### **Further research on third party accreditation**

Independent, third-party testing and certification helps organizations to

- Demonstrate compliance with national and international standards and regulations
- Demonstrate independent validation and verification and their commitment to safety and quality
- Increase credibility and acceptance with retailers, consumers and regulators
- Benefit from enhanced product quality and safety

### **4.1.3 Table of comments and further research on wood, cork and bamboo based material**

The sustainable certified wood, cork and bamboo criteria wording the comments are on are as follows:

The term "wood" applies not only to solid wood but also wood chips and wood fibres.

All wood, wood-based materials, cork and bamboo shall be covered by chain of custody certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent

All virgin wood, cork and bamboo shall be covered by valid sustainable forest management certifies issued by an independent third party certification scheme such as FSC, PEFC or equivalent.

When certification schemes allow mixing of uncertified material with certified and/or recycled materials in a product or product line, a minimum of 70% of the wood, cork and/or cork shall be sustainable certified virgin materials and/or recycled material

Uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

The certification bodies issuing forest and/or chain of custody certificates shall be accredited or recognised by that certification scheme.

**Assessment and verification**

The applicant shall provide valid, independently certified chain of custody certificates for all wood, cork and bamboo used in the product or production line and demonstrate that at least 70% of the wood, cork or bamboo originates from forest managed according to Sustainable Forestry Management principles and/or from recycled sources that meet the requirements set out by the relevant independent chain of custody scheme. FSC, PEFC or equivalent schemes shall be accepted as independent third party verification

If the product or production line includes uncertified material, proof should be provided that the content of uncertified materials does not exceed 30% and is covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material.

Details of the rationale and previous stakeholders' comments considered to redrafting the name, scope and definition can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting. The comments received through BATIS are summarized in Table 11

**Table 11. Stakeholders' feedback on certified sustainable wood**

Stakeholder's feedback	Decision taken and IPTS analysis and further research
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Scope	<p><i>These criteria apply to solid wood, wood chips and wood fibres as well as cork and lignified materials other than wood such as bamboo. Hereinafter, these distinct materials are simply referred to as "wood".</i></p> <p>First sentence: perfect!</p> <p>Second sentence: you <i>shall not call something wood that is not wood</i>. Maybe an abbreviation of "<i>cork and lignified materials other than wood</i>" like "c&amp;lmow" would be a solution.</p>	<p><b>Partially accepted</b></p> <p>Precision on the wording of the criteria bring clarity and avoid possible misunderstandings. Therefore, it is proposed to keep the first sentence that clearly refer to the scope of the criteria and the materials that are covered and keep this list of materials whenever needed in the criteria body without using any type of abbreviation.</p>
certified %	<p>The EEB and BEUC highly recommend having <i>requirements that as far as virgin wood is concerned, 100% should come from certified sustainably managed forests</i>, instead of the current 70% threshold proposed by the EC.</p> <p>We reiterate therefore that for virgin wood, 100% certified sustainable wood should be required.</p>	<p><b>Rejected</b></p> <p>Requiring 100% certified virgin wood can, on the one hand, but create market restrictions of the market fluctuates or cut-offs in the production if there is no supply</p>
certified %	<p>50% of certified materials should be the threshold for cork content because of the availability of certified material</p>	<p><b>Rejected</b></p> <p>Requiring 50% of certified virgin cork is difficult to verify throughout the proposed schemes</p>
Requirements on uncertified wood	<p>In addition, we have concerns about the origin of the remaining non-certified wood: the EC proposes to require that "<i>Uncertified material shall be covered by a verification system which ensures that it is legally sourced.</i>"</p> <p>We consider that the requirements for the sourcing of the remaining wood are not stringent enough which could result in suspicious and unknown wood material being present in Ecolabel products which is not in line with consumer expectations. Therefore, we strongly recommend the JRC aligning with the wording used in the EU Ecolabel Furniture product group – version February 2015, which states: "<i>Uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirements of the certification scheme with respect to uncertified material.</i>"</p>	<p><b>Accepted</b></p> <p>The wording referring to the materials that do hold a certification showing their sustainable management origin has been redrafted before the meeting and will be kept as such.</p> <p>These uncertified materials are required to comply with the requirements of the certification for "controlled materials". Although these requirements are different depending on the scheme, there are three common ones:</p> <ul style="list-style-type: none"> <li>- Illegally harvested wood</li> <li>- Wood harvested from natural forests that were converted to non-forest uses</li> <li>- Wood from genetically modified trees.</li> <li>- Wood harvested in violation of traditional and civil rights (only FSC)</li> <li>- Wood harvested in forests where High Conservation Values are</li> </ul>

<p>For keeping an FSC or PEFC claim, <u>the part not from certified forests or not being recycled, the remaining component has to comply with Controlled Wood (FSC) or Controlled Sources (PEFC) requirements</u>, which go beyond verifying the legality of the wood. Indeed, they also tackle wood harvested in violation of traditional and human rights (FSC), wood harvested in forests in which High Conservation Values are threatened by management activities (HCVs are areas particularly worth of protection) (FSC), wood harvested in forests being converted to plantations or non-forest use (FSC/PEFC), Genetically Modified Wood (FSC/PEFC).</p>	<p>threatened by management activities (only FSC)</p>
<p><u>If the product or product line includes uncertified material... this again is only pointing at certified material.</u>  please add and if not originating from regional forests and which have not been further processed in regional saw mills where national forest laws include SFM and the Corruptions Perception Index by Amnesty International is higher than 70</p>	<p><b>Acknowledged</b></p>



<p>We call upon the Commission and the EUEB members to include, as done in all criteria for wood relevant products, that the part <u>not coming from certified forest should be legal and comply with all further requirements the respective forest certification scheme sets</u>. In this way we can at least prevent wood to be included that comes from plantations <u>where GMOs are used or wood that is linked to deforestation</u>. Obviously we regret that PEFC does not include the two other requirements of FSC, and that brings us back to a proposal we have made before, to look into what different certification schemes actually require and how they operate.</p> <p>please add to the sentence above: <u>"and meets any other requirement of the certification scheme with respect to uncertified material."</u></p> <p>This addition is consistent with the Ecolabel criteria for sustainable sourcing of wood based products of the last few years. It <u>ensures that the claims of FSC and PEFC can actually be used by Ecolabel applicants</u>.</p> <p>Because FSC and PEFC require for the 30% non-certified, non-recycled materials not only that it is legally sourced, but they have 2 (PEFC) or 4 (FSC) additional requirements. These additional requirements are quite relevant for the environmental quality of the Ecolabel.</p>	<p><b>Accepted</b></p> <p>The part of the sentence "... and meets any other requirement of the certification scheme with respect to uncertified materials..." has been added to the criterion body draft. This inclusion has been already presented in the 2<sup>nd</sup> AHWG meeting and therefore it appears on the above table.</p> <p>Likely, the same wording has been added in the assessment and verification part</p>
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	<p>First of all, <u>both PEFC and FSC require that no GMOs are being used in this controlled wood/sources component</u>; secondly, they require that the <u>wood does not originate from plantations which are the result of conversion of natural forests</u>. In addition, in the case of FSC, respect for <u>customary rights and protection of areas with High Conservation Value</u> is included.</p> <p>Indeed, the requirements of FSC and PEFC are not the same, and this is one of the reasons why FSC is more complete than PEFC. But at least no-GMOs and non-conversion are ensured with the addition, and it is consistent with earlier Ecolabel decisions. <i>The addition should be made BOTH in the criterion itself and the assessment and verification part.</i></p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Verification schemes</b></p>	<p>If this will not be supported by other EUEB members, we strongly call on the JRC and the Competent Bodies to further investigate the <u>mixture of certified and non-certified wood</u>. We remind that, in case certified wood is mixed with non-certified wood which is checked on legal origin only, <u>the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) forbid to make any FSC/PEFC claim on the product</u>.</p> <p>A company cannot make reference in output information to the FSC/PEFC component.</p>	<p><b>Acknowledged</b></p> <p>If the certified material is mixed with the uncertified material, the product can claim the FSC or PEFC award if the mixture of the material content more than 70% of certified material, the uncertified material complies with the criteria to be classified as "controlled material" and the chain of custody has been preserved.</p> <p>According to the revised wording of the criterion, this will be the case of the EU Ecolabel products, as the criterion requires a minimum of 70% certified material, that the uncertified material is legally sourced and meets any other requirement of the certification scheme with respect to uncertified materials and that all the materials are covered by chain of custody certificates issued by FSC, PEFC or equivalent.</p>

<p>However, BEUC and EEB <u>do not support allowing other certification schemes in addition to FSC/PEFC without naming them explicitly</u> in the criteria document and without assessing whether the criteria or non-GMO wood are stringent enough.</p> <p>In our view <u>referring to too many other schemes is not useful because it always contains the risk that the criteria of other schemes change over time which makes enforcement quite complicated.</u></p>	<p><b>Rejected</b></p> <p>"... or equivalent" is a condition that should be introduced in all the criteria that require the verification of the conditions through a specific scheme or test method. This "... or equivalent" gives flexibility to demonstrate that the requirements have been fulfilled with the same level of ambitious as in the criteria wording.</p> <p>The flexibility is a key aspect in the workability of the criteria as they are designed to be implemented across Europe, where very different conditions exist simultaneously. This "... or equivalent", although deeming the harmonization that the EU Ecolabel aims to achieve in all Member States allows feasibility in the implementation of the criterion</p> <p>Guidance about the assessment of equivalent schemes for certification of wood, cork, bamboo and plant-based schemes will be included in the user manual. However, this guidance can not be development in in-depth detail as even FSC and PEFC consider themselves as not equivalent.</p>
<p><u>Sustainable Forest Management (SFM) is the best way to protect endangered flora and fauna in the world.</u> But still there is no consensus or a clear definition at political stage about SFM.</p> <p>There are some countries like <u>Germany, Austria, Switzerland and others</u> that <u>do have SFM as national laws</u>. E.g in Germany you have this since Carlowitz "invented" SFM 300 years ago. So why should these well and sustainable forests be certified again stating what is legally binding? In this case, this is a finance programme for FSC/PEFC. In other countries for sure third party auditing is absolutely necessary, but not in all.</p>	<p><b>Accepted (Acknowledged)</b></p> <p>Information received from the stakeholders is appreciated and in this case, this information will be used to elaborate the guidance to be included in the user manual to help competent bodies and verification bodies to assess the possibility of establishing other schemes as equivalent to FSC or PEFC.</p>

<b>Verification schemes</b>	<p><u>Who is by which criteria verifying the accredability of FSC/PEFC or equivalent?</u> That is unclear. Furthermore this seems to be a charter for those schemes since the criteria the COM as granting the Ecolabel does not release these.</p> <p><u>What if the schemes are changing their rules in a contraproductive way?</u></p> <p>please modify: "Virgin wood shall be covered by valid sustainable forest management and chain of custody certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent. <i>Alternatively it shall be possible to demonstrate by documentation that wood and wooden products which originate from regional forests and which have been further processed in regional saw mills where national forest laws include SFM and the Corruptions Perception Index by Amnesty International is higher than 70"</i></p> <p>The certification bodies issuing forest and/or chain of custody certificates shall be accredited or recognised by that certification scheme.</p> <p><u>Who is by which criteria verifying the accredability of FSC/PEFC or equivalent.</u></p>	<p><b>Accepted (Acknowledged)</b></p> <p>Doubts concerning who is and by which criteria are both FSC and PEFC accredited and what can happen if the schemes decide to change their rules in a contra-productive way are sensible doubts that arisen during the revision process. Investigations led us to contact FSC and PEFC representatives and ask similar questions.</p> <p>A change of their rules is possible but unlikely to happen as the standards and criteria are voted and approved by the members. For example, in FSC commenced in 2009 a comprehensive review, which resulted in major revisions to the wording, although not the substance, of the Principles and Criteria being proposed in 2011. Voting on the new version closed in January 2012, with the new version of the FSC Principles and Criteria (FSC-STD-01-001 V5-0 D5-0 EN) being approved by 75% of the membership vote. This procedure makes rather difficult that changes are made drastically. Further information about the process to develop the standards is available at: <a href="https://ic.fsc.org/setting-standards.212.htm">https://ic.fsc.org/setting-standards.212.htm</a></p>
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**Acknowledged**

Due to the scarce information provided in the feedback, we suppose that it intends to propose the due diligence system or the due care system as mean of verification. This is the assessment carried out in this box.

Both terms are used in legal terms and show little differences:

- Due diligence is performing reasonable examination and research before committing to a course of action, eg researching the terms of a contract before signing it. The opposite of due diligence might be "not doing your homework."
- Due care is performing the ongoing maintenance necessary to keep something in proper working order, or to abide by what is commonly expected in a situation. The opposite of due care is "negligence."

Neither one nor the other option seems to be feasible ways of verification for the sustainable certified material criterion.

The core of the 'due diligence' notion in the EU Timber Regulation<sup>26</sup> (EUTR) is that operators undertake a risk management exercise so as to minimise the risk of placing illegally harvested timber, or timber products containing illegally harvested timber, on the EU market. The three key elements of the "due diligence system" are:

- (1) - Information: The operator must have access to information describing the timber and timber products, country of harvest, species, quantity, details of the supplier and information on compliance with national legislation.
- (2) - Risk assessment: The operator should assess the risk of illegal timber in his supply chain, based on the information identified above and taking into account criteria set out in the regulation.
- (3) - Risk mitigation: When the assessment shows that there is a risk of illegal timber in the supply chain that risk can be mitigated by requiring additional information and verification from the supplier.
- (4) - Although the due diligence concept covers the legality of the materials there are raw materials such as cork that is not covered by the EUTR and other aspects such as the non-GMO origin that is required by the EU Ecolabel criteria and not considered in the EUTR.

Verification system due diligence system / due care system?

<sup>26</sup> OJ L 295, 12.11.2010, p. 23. Regulation (EU) No 995/2010 Laying down the obligations of operators who place timber and timber products on the market (EU Timber Regulation; EUTR)

	<p><i>"Virgin wood shall be covered by valid sustainable forest management and chain of custody certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent"</i></p> <p>Notice that the only way the wood in the floor can be <u>"covered by valid sustainable forest management and chain of custody certificates"</u> is that the floor producer has its own CoC certificate.</p> <p>However, even if the floor producer has it, there is no guarantee that there is any wood that is certified with a FSC or PEFC forest management standard. Therefore, <i>in the V&amp;A it should be written that the verification is a valid CoC certificate of the floor producer and an extract or copy of the balance sheet where it can be checked that there are enough certified wood in the production for all the claims and labels that the producers puts on the product.</i></p> <p>The balance sheet is the book keeping system of the CoC system (like a bank account) where all purchases and sales of the wood are booked. Normally there are no physical transfers of certified wood but the amount of it is traced and booked in the invoices for the transfers between the parts in the delivery chain. <i>It must be checked that after deductions done for the FSC/PEFC certified wood in the balance sheet there must still be enough certified wood left for the EU Ecolabel floor that is not labelled with FSC or PEFC. Otherwise the certified wood would be sold twice.</i></p>	<p><b>Rejected (acknowledged)</b></p> <p>An example of the use of balance sheets was proposed in the 2nd AHWG and both competent bodies and representatives of the certification schemes rejected the idea, ensuring that the CoC is enough to assess and verify the compliance with the criterion.</p>
<b>GMO</b>	<p>EEB and BEUC insist that Ecolabel <u>wooden floor coverings should not contain Genetically Modified (GMO) Wood</u> and the final criteria document must clearly state such a ban. The GMO wood might indeed be covered under the criterion 1 on sustainable wood and we know that the FSC and PEFC schemes do not allow the use of GMO Wood.</p> <p>This is discriminating wood. What about the other GMO plant materials?</p>	<p><b>Partially accepted</b></p> <p>As state FSC and PEFC schemes do not allow the use of GMO wood. Therefore the requirement of being certified by FSC and PEFC already demonstrates the requirement that the wood is not GMO. In this revision, simplified criteria are intended to be developed avoiding redundancy among other issues.</p> <p>The extension of this requirement to other types of materials will be introduced in the wording of the certified sustainable forest material criteria. However, as this criterion relies on the FSC and PEFC schemes, it is up to those schemes to require this requirement to non-wood materials.</p>

<b>Wordin g</b>	<i>Note 1:</i> It should be clarified that this note refers only to this criterion and not to the whole document	<b>Accepted</b> The note will be removed and the full list of materials the criterion applies to introduced in the main body of the criterion body
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Additionally, feedback from the stakeholders was requested a posteriori regarding the possible exception of cork and bamboo materials from this criterion.

The reasons why this question was sent are as follows:

- *bamboo* is not wood, it is a grass. To produce bamboo products no deforestation is necessary or even possible. The bamboo is harvested when the plants are only 5-6 years old. Bamboo is an agricultural product, mainly grown in plantations from where it is harvested and where replanting is not needed as no clear cutting is taken place. Even though, there are certifications regarding the sustainable origin of the bamboo. These schemes are also in place for practical reasons as the no certification of the materials (ie bamboo) could exclude them for taking part of public contracts or competitions.

However, the existence of a recognized certification and consequently the administration procedure to keep records of the paths followed by the bamboo has a cost. The certification costs of the whole chain within FSC certification, will bring the price of the bamboo products at least 8-10% higher, according to stakeholders. This means that a higher cost of the materials is required without a clear evidence of the environmental preference for this type of products.

- *cork* is defined in ISO 9229 as the protective layer in the inner bark layer of the cork oak tree which can be periodically removed from its trunk and branches to provide the raw material for cork products. It is defined in a separate way than the wood that is defined in ISO 24294 as a lignocellulosic substance between the pitch and bark of a tree or a shrub.

Cork is a natural, renewable material and is typically Mediterranean in the sense that this area, in particular the Iberian Peninsula, is home of the majority of cork oak forests and, therefore, most cork extraction activity. The cork oak tree is a long-life species (250- 350 years) with an outer bark, the cork; whose extraction occurs every 9-14 years, depending on the area, until the tree is about 200 years old<sup>27</sup>. Approximately 80% in mass of the cork produced worldwide is originated in Portugal and Spain, as seen in Table 12

**Table 12. Cork certified forest area and annual productions around the world<sup>28</sup>.**

Forest Area	Annual production
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<sup>27</sup> [http://icta.uab.cat/ecotech/jornada/ISIE2014/ISIE14\\_cork.pdf](http://icta.uab.cat/ecotech/jornada/ISIE2014/ISIE14_cork.pdf)

<sup>28</sup> Sierra-Perez et. al., Production and trade analysis in the Iberian cork sector: Economic characterization of a forest industry, 2015. Resources, Conservation and Recycling, Vol. 98 p.55-66. Feedback from PEFC Espana.

Country	Area (ha)*	% of global area	Certified area (ha) (FSC+PEFC)	% area Certified	Country	Annual production of cork (tons)*	Percentage
Portugal	715.992	34	110.000	15,3%	Portugal	100.000	49,6
Spain	574.248	27	116.000	20,2%	Spain	61.504	30,5
Morocco	383.120	18	?	?	Morocco	11.686	5,8
Algeria	230.000	11	?	?	Algeria	9.915	4,9
Tunisia	85.771	4	?	?	Tunisia	6.962	3,5
France	65.228	3	?	?	Italy	6.161	3,1
Italy	64.800	3	86,5	0,1%	France	5.200	2,6
<b>Total</b>	<b>2.119.089</b>	<b>100</b>	<b>≥ 226.086</b>	<b>≥ 10,6%</b>	<b>Total</b>	<b>201.428</b>	<b>100</b>

The industry of the cork sector is composed of private industries and can be divided into the stopper producers (including the natural cork producers that prepare the raw material of the stoppers) and the industry of other cork good producers. Other cork good products are mainly produced from forest cork by-products and wastes from the natural cork industry that are cut into small particles of cork getting the cork granulates. From the 100kg of the initial raw cork in the forest, only 23.2% will be transformed into natural cork products after passing through the preparation industry and natural cork industry. This means that although 865kg really enter the natural cork product production system; significant amounts of cork waste or by-products will be generated and consequently recycled into cork granulates, concretely more than 70% of the material that enters this system will be later sent to the granulate-agglomerate industry<sup>29</sup>. Cork granulates are mixed with adhesives or other binding techniques such as temperature to form agglomerate products. In general two type of granulates can be found: white cork granulate generated mainly from natural cork industry wastes that will be used in the technical stopper industry and the black cork granulate generated from forestry cork by-products and used for decoration, construction, insulation material and other non-food applications (this subsector represents in Catalonia around 2% of the total turn-over)

However, although the granulate-agglomerate industry is a solution to manage the large amount of forestry and industry wastes generated being an example of a raw material optimization system (all the cork flows that were a waste in one point could become granulates and used as resources for other products) it cannot be classified as waste and therefore it cannot be considered as a recycled materials and accounted as sustainable material.

On the other hand, since some years ago there are certification schemes FSC and PEFC that certify the sustainable management of the oak forest. The area covered by FSC and PEFC varies widely depending on the country but it can reach around 20% but these schemes guarantee that the harvest of the cork is done regarding the regeneration times.

<sup>29</sup> Environmental assessment of the cork industrial sector in Catalonia, Part III, <http://www.tdx.cat/bitstream/handle/10803/51440/jrb1de1.pdf?sequence=1>



The possible exclusion of cork and bamboo from these requirements was presented in the EUEB meeting held in Brussels in June 2015. Competent Bodies were requested to provide their view in written and although replies were very scarce all of them indicated the preference of keeping both materials in the sustainable certified wood, wood-based materials, cork and bamboo.

### **Further research on the verification process by means of chain of custody and/or balance sheets.**

Between the forest and the final consumer, forest products may undergo many stages of processing, transformation, manufacturing and distribution. Chain of Custody certification verifies that certified material is identified or kept segregated from non-certified or non-controlled material through this chain. Mixing of certified and non-certified products must be done under controlled procedures that meet the Chain of Custody requirements of the scheme. As commented by the schemes, Chain of Custody certification is essential for businesses seeking to access environmentally and socially aware markets, or to demonstrate compliance with public and private procurement policies that specify environmentally responsible materials. This is the case of the EU Ecolabel, where a certain amount of certified material is required, being this limit set up in accordance to the possible combinations offered by the schemes.

There are three types of labels that can be displayed on the products if all the members that touch the material, from the forest managers to the retailers, are chain of custody certified. There are several types of chain of custody certificates, but all are developed with the same aim: they monitor, control and enforce sustainable material. The chain of custody system provides information about the path taken of the product from the forest to the consumer through the certificates that accompany certified goods.

The label informing about the quantity of material that can be certified can only be displayed on the product if the chain of custody is kept. In this way, the three types of labels that can be displayed are

- The FSC Recycled label and PEFC recycled were introduced in recognition of the important role that reclaimed material plays in protecting the world's forests. FSC certified reclaimed materials can also be used in products carrying the FSC Mix label and FSC certified projects.
- FSC certified (100%) ensure that all the wood in the product comes from FSC-certified forests. Research suggests one-third of all FSC-certified products are FSC 100%.
- FSC mix and PEF certified means at least 70% of the wood in the product is from FSC-certified or PEFC-certified material, respectively or recycled material that meets or exceeds FSC or PEFC's Sustainability Benchmark requirements; and 30% is controlled wood. While not fully FSC-certified or PEFC-certified, controlled wood cannot be:
  - Illegally harvested
  - Harvested in violation of traditional and civil rights (only FSC)
  - Harvested in forests where High Conservation Values are threatened (only FSC)
  - Harvested in forests being converted to plantations or non-forest use
  - Harvested in forests where genetically modified trees are planted.

#### **4.1.4 Table of comments and further research on general requirements for hazardous substances and mixtures and on specific substance requirements**

The general restrictions on hazardous substances criterion wording the comments are on is as follows:

The presence in the product of substances that meet the criteria for identification with the Article 59 of the REACH Regulation<sup>30</sup> or meet the criteria for classification according to the CLP Regulation<sup>31</sup> for the hazards listed in Table 2.1 shall be restricted in accordance with sub-criterion 2.a and 2.b.

**Table 2.1. Grouping of Candidate List SVHCs and CLP hazards**

<p><b>Group 1 hazards – Substances of Very High Concern</b>  <i>Hazards that identify a substance as being within Group 1:</i>            Substances that appear on the Candidate List for Substances of Very High Concern (SVHC).            Category 1A or 1B CMR*: H340, H350, H350i, H360F, H360D, H360FD, H360Fd, H360Df</p>
<p><b>Group 2 hazards – CLP</b>  <i>Hazards that identify a substance as being within Group 2:</i>            Category 2 CMR*: H341, H351, H361f, H361d, H361fd, H362            Category 1 aquatic toxins: H400, H410            Category 1 and 2 acute toxins: H300, H310, H330, H304            Category 1 STOT*: H370, H372            Category 1 Skin Sensitiser H317</p>
<p><b>Group 3 hazards – CLP</b>            Category 2, 3 and 4 aquatic toxins: H411, H412, H413            Category 3 acute toxins: H301, H311, H331, EUH070            Category 2 STOT*: H371, H373</p>

\*CMR = Carcinogenic, reproduction; STOT = Toxicity

Mutagenic or toxic to Specific Target Organ

<sup>30</sup> Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency (OJ L 136, 29.05.2007, p.3).

<sup>31</sup> Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ L 353, 31.12.2008, p.1).

## **2.a) Restriction of Substances of Very High Concern (SVHC's)**

The wood-based floor covering product shall not contain substances that have been identified according to the procedure described in Article 59(1) of the Regulation (EC) No 1907/2006 (the 'REACH' Regulation) and included in the Candidate List for SVHCs, at concentrations of greater than 0.10% wt.

No derogation from this requirement shall be given to Candidate List SVHCs present in the product if they are present in the final product in concentrations greater than 0.10%wt.

### ***Assessment and verification***

The applicant and/or chemical product supplier shall provide a declaration of compliance supported, where relevant, by declarations from chemical product supplier or component part suppliers regarding the non-presence of SVHCs above the specified concentration limit for the final product. Declarations shall be with reference to the latest version of the Candidate List published by ECHA<sup>32</sup>

## **2.b) CLP restriction of the chemical products used in the wood-based floor covering product**

*Note 1: This requirement specifically refers to chemical products that are used in the manufacture of the wood-based floor covering product. The criterion is split into two parts.*

*2.b.1) Referring specifically to chemical products used by the wood-based floor covering manufacturer during the production or assembly and any other treatment of the wood-based floor covering and*

*2.b.2) Referring only to listed chemical products used in the production of certain component materials that are bought from suppliers<sup>33</sup>.*

### **2.b.1) CLP restriction of chemical products used by wood-based chemical**

Chemical products used by the wood-based floor covering manufacturer during manufacture, assembly or any other treatment of the wood-based floor covering product shall not be classified with any of the CLP hazards listed in Table 2.1. Restricted chemical products shall include adhesives, paints, varnishes, wood stains, wood preservatives, resins and sealants.

However, the use of such restricted chemical products shall be permitted if one or more of the following conditions apply:

- that the restricted chemical product was used in quantities that amount to less than 0.10% of the final wood-based floor covering product weight
- that the restricted chemical product changes its properties upon processing (e.g. becomes no longer bioavailable or undergoes chemical modification so that the restricted CLP hazards no longer apply and that the residual content of the restricted chemical product in the final product is less than 0.10%wt
- that compliance with specific derogation conditions, as set out in Table 2.2 is demonstrated.

### **2.b.2) CLP restriction of chemical products used by suppliers in components of the wood-based chemical**

*Note 2: any individual component part from suppliers used in the wood-based floor covering product that does not come into direct contact with users during normal use shall be considered exempt from the requirements set out in criterion 2.b.2*

Suppliers of solid wood and plant-based panels, paper layers or other components shall demonstrate that the components have not been produced using chemical products that are classified with any of the CLP hazards listed in Table 2.1.

However, the use of such restricted chemical products shall be permitted if one or more of the following conditions apply:

<sup>33</sup> e.g. if the wooden core panel is directly bought and not manufactured by the applicant

- that the restricted chemical product was used in quantities that amount to less than 0.10% of the final wood-based floor covering product weight
- that the chemical product changes its properties upon processing (e.g. becomes no longer bioavailable or undergoes chemical modification so that the restricted CLP hazards no longer apply and that the residual content of the restricted chemical product in the final product is less than 0.10%wt
- that compliance with specific derogation conditions, as set out in Table 2.2 is demonstrated.

**Table 2.2. Derogations to the hazard restrictions in Table 2.1 and applicable conditions.**

<b>Chemical product type</b>	<b>Applicability</b>	<b>Derogated classification</b>	<b>Derogation conditions</b>
(a) biocides/preservatives	Treatment of wooden materials and components to be used in the final product	All group 3 hazard listed in Table 2.1	Only permitted when the formulation and any active substance(s) present are approved under Product Type 6 as per the requirements of the Biocidal Products Regulation (EU) No 528/2012
(b) flame retardants		H351	The product must be intended to be used in applications in which it is required to meet fire protection requirements in ISO, EN, Member State or public sector procurement standards and regulations

### **Assessment and verification**

The applicant shall provide a declaration of compliance with criterion 2.b.1), supported by a list of all the chemical products used by the wood-based floor covering manufacturer during the production, assembly and any treatment of the wood-based floor covering product together with their hazard classification (if any).

The applicant shall compile declarations of compliance with criterion 2.b.2) from suppliers of any of the components. These declarations shall be supported by lists of any relevant chemical products used and their hazard classifications (if any).

The following information shall be provided to support declarations of the hazard classifications or non-classification for each substance or mixture identified as being present in the product/component part:

- substance's CAS34, EC35 or list number
- the physical form and state in which the substance is used
- harmonised CLP hazard classifications
- self-classification entries in ECHA's REACH registered substance database<sup>36</sup>

Self-classification entries from joint submissions shall be given priority when comparing entries in the REACH registered substance database.

<sup>36</sup> CAS, <https://www.cas.org/content/chemical-substances/faqs>

<sup>35</sup> EC, [http://en.wikipedia.org/wiki/European\\_Community\\_number](http://en.wikipedia.org/wiki/European_Community_number)

- Toxicological studies and hazard assessment by ECHA peer regulatory agencies <sup>37</sup>, Member State regulatory bodies or intergovernmental bodies
- A Safety Data Sheet (SDS) completed in accordance with sections 2, 3, 9, 10, 11 and 12 of the Annex II of the Regulation (EC) No 1907/2006
- A documented expert judgement based on a review of scientific literature and existing testing data, where necessary supported by results from new testing carried out by independent laboratories using methods approved by ECHA
- An attestation, where appropriate based on expert judgment, issued by an accredited conformity assessment body that carries out hazard assessments according to the GHS or CLP hazard classification systems.

Information on the hazardous properties of chemical products may, in accordance with Annex XI to Regulation (EC) No 1907/2006, be generated by means other than tests, for instance through the use of alternative methods such as in vitro methods, by quantitative structure activity models or by the use of grouping or read-across.

For criterion 2.b.1) or 2.b.2), as appropriate, where chemical products with the restricted hazards listed in **Error! Reference source not found.** are added in a concentration no greater than 0.10%wt of the final product or are considered to no longer exhibit any restricted hazardous properties in the final product or relevant component part due to physical and/or chemical changes during processing, and residual levels in the final product, or relevant component, can be considered to be present at concentrations less than 0.1% by weight, the applicant shall specifically mention this in their declaration and provide supporting arguments.

For criterion 2.b.1) or 2.b.2), as appropriate, where the use of restricted chemical products may be subject to derogation as per Table 2.2, the applicant shall provide proof that all the derogation conditions are met, as described in Table 2.2. Where test reports are required, they shall be valid at the time of application for a production model

The specific restrictions on hazardous substances criteria wording the comments are on is as follows:

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<sup>36</sup> ECHA, REACH registered substances database: <http://www.Echa.europa.eu/information-on-chemicals/registered-substances>

<sup>37</sup> ECHA, Co-operation with peer regulatory agencies, <http://echa.europa.eu/en/about0us/partners-and-networks/international-cooperation/cooperation-with-peer-regulatory-agencies>

### **3. a) Contaminants in recycled wood**

Any recycled wood fibres used in the manufacture of wood-based panels included in the final wood-based floor covering product shall be tested for delivery conditions in accordance with the 2002 "EPF standard conditions for the delivery of recycled wood" (Table 3.1) or any other national regulation in place with equivalent or stricter limit values.

**Table 3.1. Limit values for delivery conditions if no other national regulation is in place (mg/kg dry panel)**

<b>Elements and compounds</b>	<b>Limit values</b>	<b>Elements and compounds</b>	<b>Limit values</b>
Arsenic	25	Mercury	25
Cadmium	50	Fluorine	100
Chromium	25	Chlorine	1000
Copper	40	Pentachlorophenol (PCP)	5
Lead	90	Tar oils (benzo(a)pyrene)	0.5

#### ***Assessment and verification:***

The applicant and/or his/her supplier(s) shall provide a declaration of compliance with the criterion supported by the following documentation:

- A declaration that no recycled wood fibres are used in the panel, or
- A declaration that all recycled wood fibres used have been tested in accordance with the 2002 "EPF standard conditions for the delivery of recycled wood" or any other national regulation with equivalent or restricted limits, supported by appropriate test reports that demonstrate compliance of the recycled wood samples with the limits specified in the table 3.1 or those of the national regulation.

### **3.b) Wood preservatives**

Treatment of wooden components with preservatives shall not be permitted.

#### ***Assessment and verification:***

The applicant shall provide a declaration of non-use of wood preservatives

### **3.c) Biocides**

Biocides shall not be permitted. Biocides exclusively used for in-can preservation in aqueous coating materials and glues or flame retardants according to criterion 3.d) shall be exempt from this requirement.

#### ***Assessment and verification***

The applicant shall either:

- Provide a declaration of non-use of biocides
- Provide a declaration stating what biocides or formulation(s) have been used with wood and wood-based materials, supported by SDS from the in-can preservation suppliers.





### **3.d) Flame retardants**

Flame retardants should not be permitted in wood and wood-based materials unless specifically required for the wood-based floor covering to meet fire safety requirements in the country or countries where it is to be sold. Flame retardant substances shall comply with the general hazardous substance requirements set out in Criterion 2.

#### ***Assessment and verification***

The applicant shall either

- Provide a declaration of non-use of flame retardants or,
- Provide a declaration stating what flame retardant substance(s) or formulation(s) have been used with wood and wood-based materials, supported by SDS from the flame retardant suppliers. The flame retarding substances shall meet the requirements on criterion 2 and being demonstrated in accordance with the "Assessment and verification" requirements of criterion 2,
- Provide evidence that the wood-based floor covering, when treated with flame retardant substance(s) or formulation(s), meets the fire safety requirements in the country or countries where it is to be sold.

### **3. e) VOCs and formaldehyde in adhesives and resins**

Adhesives and/or resins used in manufacturing of the wooden boards should have

- VOC content less than 3% by weight,
- Free-formaldehyde less than 0.2% by weight.

#### ***Assessment and verification***

The applicant and/or its supplier shall provide the material SDSs or an equivalent declaration of the compliance of this requirement, together with a complete recipe with designation of quantities and CAS numbers for constituent substances.

The content of free-formaldehyde in the resin and/or adhesive formulation shall be in accordance with ISO 11402

### **3.f) Heavy metals in paints and varnishes**

Paints and varnishes used on wood and wood-based materials shall not contain additives based on cadmium, lead, chromium VI, mercury, arsenic, barium, selenium, antimony or cobalt at concentrations exceeding 0.010% by weight for each individual metal in the in-can paint or varnish formulation.

#### ***Assessment and verification***

The applicant shall declare that the paint or varnish formulations do not contain the aforementioned heavy metals in concentrations > 0.010% by weight and provide the respective SDS from the suppliers of the coating substances used.

### **3. g) VOC content in surface treatment**

*Note 1: It shall not be necessary to meet the requirements of this sub-criterion if compliance with criterion 6.1 can be demonstrated*

Surface treatment chemical products used to coat wood and wood-based materials, cork or bamboo panels used in the wood-based floor covering product shall either:

- a) Have a total VOC content of less than 5% by weight (in-can substance concentration), or
- b) Be greater than 5% by weight VOC content but be shown to be applied in quantities that amount to less than 2g/m<sup>2</sup> of the coated surface area

**Assessment and verification**

The applicant shall provide the SDS of any coating substances used on wooden materials. If the SDS states that the VOC content of the surface treatment chemicals used is less than 5% by weight, then no further verification shall be necessary. If the VOC content is higher, then the applicant shall either:

- Provide calculations that demonstrate the effective quantity of VOC applied per m<sup>2</sup> of the coated surface area of the final wood-based floor covering product is < 2g/m<sup>2</sup>. Guidance on these calculations is provided in Appendix I, or
- Provide a test report demonstrating compliance with criterion 6.1 for the finished product.

**Appendix I. Guidance on the calculation of the quantity of VOC applied**

The requirement relates to the total VOC in the chemical products with the chemical composition they have in the wet form. If the products required dilutions, the calculation is to be based on the content in the dilutive product.

This method is based on the application method that calculates the quantities applied per m<sup>2</sup> surface area but it determines before the content of organic solvents and/or environmentally harmful substances as percentage of the surface treatment quantity applied.

The applied quantity of VOC according to option b) is calculated using the following formula

$$\frac{\text{Applied quantity } \left(\frac{g}{m^2}\right) \times \text{proportion VOC in surface treatment (\%)}}{\text{surface treatment efficacy}}$$

The formula consists in three parameters:

- The applied quantity of surface treatment reported in g/m<sup>2</sup>. It depends on the number of coats and the quantity applied per coat,
- The proportion of VOC in the surface treatment: the concentration is to be stated as a percentage by weight,
- The surface treatment efficiency that depends on the application method is tabled in accordance with the state-of-the-art of the coating industry as shown in Table 3.2.

**Table 3.2. Efficiency of the surface treatments**

Surface treatment	Efficiency	Surface treatment	Efficiency
Automatic spray application, no recycling	50%	Roller coating	95%
Automatic spray application with recycling	70%	Curtain coating	95%
Spray application, electrostatic	65%	Vacuum coating	95%
Spray application, bell/disc	80%		

**3.h) Halogens**

No halogenated organic compounds may be used (e.g. as binders, flame retardants) in the manufacture of the products, including the materials used in the manufacture (wood-based materials, adhesives, coatings, etc). Paints and varnishes with long chain perfluoroalkyl sulfonates (>C<sub>6</sub>) and/or perfluorocarboxylic acids (>C<sub>8</sub>) shall not be used on wood and wood-based materials

**Assessment and verification**

The applicant shall provide a declaration of non-use of halogenated organic compounds, supported by SDS in the case of the paints and

Details of the rationale and previous stakeholders' comments considered to redrafting the name, scope and definition can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting. The comments received through BATIS are summarized in Table 13

**Table 13. Stakeholders' feedback on general and specific**

	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
<b>Restriction based on hazard CLP classification</b>	<p>We disagree with the <i>derogation proposed for flame retardant H351 as we do not consider its use as necessary</i>. We remind that flame retardants are <i>neither needed nor compulsory to fulfil fire safety requirements in domestic houses, in public and commercial buildings</i>; there are no legal requirements existing for normal floorings.</p> <p>In addition, manufacturers who were directly asked by the EC at the technical meeting confirmed that they do not need flame retardants when producing wooden floor coverings. There are therefore no obstacles to ban it completely from EU Ecolabel products.</p>	<p><b>Accepted</b></p> <p>Derogation for flame retardant H351 has been removed based on the information provided by the industry that confirm the no obligation of adding flame retardants according to the national legislation</p>

	<p>"The final product shall not contain substances that have been identified according to the procedure described in Article 59(1) of the Regulation (EC) No 1907/2006 and included in the Candidate List for SVHCs at or above the concentrations limit 0.10% wt".</p> <p><u>The JRC proposes to restrict SVHC that are present in concentrations above 0.1% by weight of the product.</u></p> <p>In reaction to the discussions during the 2<sup>nd</sup> AHWG meeting, BEUC and the EEB are in favour of a <u>stricter approach, which is to establish the 0.1% threshold by weight of one of the layers involved and not by weight of whole product as it is the case now.</u> Therefore, <u>SVHC above 0.1% by weight of one of the layers should be considered and assessed.</u></p> <p>In case of laminate, it would restrict further the most hazardous chemicals in all three layers composing the floorings; this is to say the upper varnish, the core board or the balance sheet at the bottom. There are no doubts that our proposal brings more stringency with regards to hazardous and unwanted substances present in the components of the floor and would result in safer final products.</p>	<p><b>Rejected</b></p> <p>According to the decisions taken in the EUEB meeting held in April 2015, the general threshold should be applied, whenever possible to the whole product. This is the case of floor coverings. The concerns expressed in this feedback about the lowering in strictness of the criterion on general hazardous substances are reasonable and the proposed idea could be a solution. However, the layers the floorings consist of are not homogenous and applying the same threshold to all the layers can be regarded as unfair.</p> <p>Regarding the strictness of the proposed criterion, it should be noted that this criterion is complemented by criterion 3 where all the substances of concern are restricted or banned. In this way, no hazardous substances are expected to be remaining in the final product.</p>
	<p>The name of the criterion seems wrong.</p>	<p><b>Acknowledged</b></p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Assessment and verification</b></p>	<p>This part should be simplified. Do we need more than a list of chemicals used and their SDS?</p> <p><i>"a complete recipe with designation of quantities and CAS numbers for constituent substances".</i></p> <p>This is the secret of the <u>suppliers</u>. They <u>will not hand out the recipes to the manufacturer or to anyone else</u>. The one having it might go to another producer of the resin, adhesive, etc. asking for a better price. There is a lot of knowledge behind that. Very often recipes are custom-made for the manufacturer. That is why they also do not want their supplier to hand out this secret that then may get into the hands of a competitor taking advantage of that.</p>	<p><b>Acknowledged</b></p> <p>Confidently and competition between suppliers want to be preserved in the EU Ecolabel scheme and therefore it is offered the possibility of sending the documentation straight to the Competent bodies, without disclosing this information to the flooring manufacturers. Revision of the wording on this procedure seems to prevent future misunderstandings.</p> <p>However, in most of the cases the screening of the hazardous substances will not go beyond information contented in the SDS of the suppliers. Suppliers should include in the SDS of their products all those compounds that can be classified with a CLP phrase the limit</p>

	<p>The assessment and verification should be simpler.  <u>Provide the SDS of the chemical products (substances or mixtures) is enough because SDS contains all the information about hazard components.</u></p> <p>It could be clearer specifying that the assessment and verification of the respect of the threshold 0.1%wt, regarding CLP requirement, shall be done <u>first on the entire chemical product and not at the individual substances in the product, and then on the individual substances in the product that are classified with any of the CLP hazards listed in table 2.1</u></p>	
<b>Contaminants in recycled wood</b>	<p>Pollutants in recycled wood in accordance with EPF 2002 standards.          We can't give opinion because we don't use recycled wood</p> <p>This is <u>discriminating wood</u>. What about the contaminants in recycled lignified materials other than wood (e.g. bamboo)?</p> <p>What about contaminants in <u>other recycled fibres</u>? This is only targeting at wood and by that discriminating since other materials are under the scope that could possibly come from recycling materials.</p> <ol style="list-style-type: none"> <li>1. Change headline to Contaminants in recycled wood, cork and lignified material other than wood.</li> <li>2. Leave text and table as it is</li> <li>3. add: This requirements are also applicable for cork and lignified material other than wood</li> <li>4. Assessment and verification: bullet points , please add: ... recycled fibres of wood, cork and lignified material other than wood ...</li> </ol>	<p><b>Accepted</b></p> <p>Discrimination of materials should be allowed in the EU Ecolabel criteria. We appreciate the comments and the wording of the criteria is modified as requested.</p> <p>However, and for the best of our knowledge, nowadays wood is the only fibre that is separately collected and consequently, recycled. Limits included in the EPF standard are for recycled wood and no information about the appropriateness of these limits for other types of fibres is included in the standard.</p>

<p><i>"or any other national regulation in place with equivalent or stricter limit values".</i></p> <p>We support the provisions added at the end of the 1<sup>st</sup> paragraph. We agree with the fact that <i><u>if national mandatory legislations in place are stricter, the applicant has to comply with this national legislation and there is no need to require additional testing in accordance with the European Panel Federation (EPF) Standards.</u></i> Avoiding double testing result indeed in time and cost savings.</p> <p>However, <i><u>taking into account that the national rules differ,</u></i> this could lead to <i><u>conflicts regarding the coherence of the scheme</u></i> and it could trigger competition between the Competent Bodies for new applicants which might want to shop around for the lowest requirements. <i><u>If thresholds for contaminants are not the same for everyone, it would result in slightly different levels of contaminants being present in EU Ecolabel products, depending on in which country the applicant requested the Ecolabel.</u></i></p>	<p><b>Rejected</b></p> <p>Although it is true that if the thresholds for contaminants are not the same for everyone, it could result in slightly different levels of contaminants being present in EU Ecolabel products, it is consider that setting minimum requirements across Europe is enough to ensure that the wood can be recovered at the end of its life and that a high quality can be achieved in the production of the flooring.</p> <p>Additionally, it is considered that the reduction in the cost-testing is also a positive effect of this modification that will be set off if the exemption is not introduced.</p>
<p><i><u>Table 3.1 Limit values for delivery conditions if no other national regulation is in place</u></i></p> <p>BEUC and EEB are concerned that the Commission still proposes to apply the EPF standards as limit values for contaminants in recycled wood, like in the first draft criteria proposal published in October 2014. Indeed, we are concerned about the ambition level of these EPF values: BEUC and EEB consider that these values are not stringent enough compared to the German recycled Wood Directive (Altholzverordnung). Likewise they are not stringent enough compared to the test parameters set by the Naturplus label. We strongly recommend the JRC coming up with a more ambitious proposal to further reduce the level of contaminants in wood.</p>	<p><b>Rejected</b></p> <p>The proposal of setting the minimum values in accordance with the EPF standards has been supported by other stakeholders. A balance should be found between the strictness of the criteria and the promotion of recycling</p>

	<p>Any recycled wood fibres used in the manufacture of wood-based panels included in the final wood-based floor covering product shall be tested for delivery conditions in accordance with the 2002 "EPF standard conditions for the delivery of recycled wood" (Table 3.1) or any other national regulation in place with equivalent or stricter limit values.</p> <p><u>To verify this criterion, an extensive testing is required and we have our doubts about if it is even possible in practice.</u> Is it possible to do this type of testing on each incoming batch of recycled wood to the factory? What would the cost for the tests be? <u>We would like to promote the use of recycled wood but this criterion including extensive testing can be contra productive</u></p>	<p><b>Rejected</b></p> <p>Relying on EPF standard that is widely used in the sector, it is ensured that the testing can be carried out and that there is enough expertise in place to be performed. Although it is understandable to consider that extensive testing can prevent the use of recycled wood, wood-based materials, cork or bamboo, minimum requirements are needed to ensure that a high quality finished product is achieved.</p> <p>Considering the costing, the acceptance of the compliance with mandatory national regulation in this area as a proof of compliance with this criterion will significantly reduce the cost of testing in some Member States.</p>
<b>Biocides</b>	<p><u>No preservatives, biocides or flame retardants apart from those required by national legislation</u></p> <p>Our opinion is that the use of <u>wood preservatives is no needed for indoor products.</u></p> <p>Our opinion is that the use <u>of biocides is no needed for indoor products.</u></p> <p>Biocides is needed for in-can preservation in aqueous coating materials so the formulation of the criterion 3c) is correct.</p> <p><u>The SDS of those formulations is enough to ensure that no other biocidal substances are used, Is no needed a derogation for, any biocide or biocidal product to comply with this criterion.</u></p> <p>That is discriminating wood. Consumers may think that only wood is treated with biocides but not cork and lignified material other than wood.</p>	<p><b>Accepted</b></p> <p>Preservatives and biocides are banned for indoor floorings.</p> <p>The verification of these criteria should be carried out by checking the ingredients included in the SDS of the substances used for manufacturing the flooring</p> <p>The wording of the criteria has been checked to remove any discrimination of wood with respect to other materials</p>
<b>VOCS and formaldehyde in adhesives</b>	<p><u>The new limits are adequate.</u></p> <p>Are those kinds of adhesives with concentrations of VOCs and formaldehyde higher than 3% and 0.2% by weight respectively widely used in the wood based floor covering manufacturing?</p> <p><u>NO (parquet industry)</u></p> <p><u>YES (laminat industry)at least for free formaldehyde</u></p> <p>Would it be necessary to introduce derogation for some specific substances? If so, which of them and why? NO</p>	<p>No further data provided even if JRC explicitly contacted stakeholders asking for further information. No changes proposed for the time being.</p> <p><b>Accepted</b></p>

	<p><u>The assessment and verification should be simpler. Provide the safety data sheet of the chemical products (substances or mixtures) is enough because SDS contains all the information about hazard components.</u></p>	<p><b>Accepted</b></p>
	<p>Important for health and safety is what is coming out of the product?  <u>So the VOCs and HCHO in adhesives and resins is not this important.</u>  Re-introduction in TR 2.0 is not necessary</p>	<p><b>Rejected</b>  Although the aim of the criterion 3 restricting the use of VOC and formaldehyde containing adhesives and the criteria 6.1 restricting the emissions of these compounds from the final product is pretty similar, both criteria are proposed to be kept, as unanimously expressed in the EUEB meeting held in June 2015 and the posteriori feedback</p>
	<p><u>"Adhesives and/or resins used in manufacturing of the wooden boards should have... "</u> that is again discriminating wood and wood-based materials, instead of "of the wooden boards" use floor covering</p>	<p><b>Accepted</b>  Discriminating wording has been removed from the criteria body as proposed</p>
<p><b>VOC content in surface treatment</b></p>	<p>Is the limit of total <u>VOC content &lt; 5% by weight</u> (in-can preparations) appropriate? <u>The limit is too low(parquet industry)</u>  Which value of applied quantity would you suggest to ensure that the final product meets all the needed technical requirements and at the same time has an outstanding environmental performance? Would 2 g/m2 limit be an appropriate benchmark?  <u>The limit is too low. You can find a value between this limit and the limit in the Current criteria (35 g/m2 ).</u></p>	<p>No further data provided even if JRC explicitly contacted stakeholders asking for further information. No changes proposed for the time being.</p>
	<p>Is the note "compliance with the VOC emission limits as specified in criterion 5.2" equivalent to the previous ones or should the criterion be drafted in a different way?  <u>If you leave note 1 (note 1: It shall not be necessary to meet the requirements of this sub-criterion if compliance with criterion 6.1 can be demonstrated) you can introduce in paragraph 6 that if the applicant respects the limit a) (in criterion 3.g) is not necessary verify the respect of the limit in criterion 6.1.</u>  In the criterion 6.1 the LIMITS ARE TOO LOW. It is very difficult guaranteeing high quality products with these limits.</p>	<p><b>Accepted</b>  Corresponding notes have been added to the criteria bodies.  Limits proposed for criteria 6.1 have been revised as those proposed in TR2.0 were wrong.</p>



	According to Italian stakeholders the threshold of 2 g/m <sup>2</sup> is very too low. With the aim to promote the diffusion of the EU Ecolabel it should be raised to 10 g/m <sup>2</sup> .	No further data provided even if JRC explicitly contacted stakeholders asking for further information. No changes proposed for the time being.
	This criterion refers to the surface treatment phase (production phase). Criterion 6.a "Indoor emissions" refers to the use phase. It is not very clear why to accept that "It shall not be necessary to meet the requirements of this sub-criterion if compliance with criterion 6.a can be demonstrated". The respect of criterion 6.1 can't prove the compliance with criterion 3.g). Moreover the two criteria can be considered equivalent.	<b>Acknowledged</b>
3.f) Heavy metals in paints and	The criterion 3f) is adequate. Is not necessary to introduce derogation for some specific substances	<b>Accepted</b>
flame retardants	"with wood and wood-based materials" that is discriminating wood. Consumers may think that only wood is treated with flame retardants (because wood burns - people think) but not cork and lignified material other than wood. that is discriminating wood. Consumers may think that only wood is treated with flame retardants but not cork and lignified material other than wood.	<b>Accepted</b> Discriminating wording has been removed from the criteria body as proposed

phthalate	<p>"Additionally DNOP (di-n-octyl phthalate), DINP (di-isononyl phthalate), DIDP (di-isodecyl phthalate) are not permitted in the product"</p> <p><u>We suggest removing this sentence due to its inaccuracy. This restriction of DINP and DIDP is not based on science.</u></p> <p>DINP and DIDP are not classified and been the object of a risk assessment conducted by ECHA and which lasted four years. The conclusions of this re-evaluation of new scientific evidence concerning DINP and DIDP have been endorsed by the Commission in January 2014, confirming that "no unacceptable risk has been characterised for the uses of DINP and DIDP in articles other than toys and childcare articles which can be placed in the mouth".</p> <p><u>Therefore, DINP and DIDP are safe for all current consumers' application and the already existing restriction on toys and childcare articles that can be put in the mouth is maintained, based on the precautionary principle.</u></p> <p>Please replace "all phthalates" with "classified phthalates". The exclusion of "all phthalates" is discriminatory because only low molecular weight phthalates are classified.</p>	<p><b>No correct</b></p> <p>The comments do not refer to the last Criteria draft presented during the 2<sup>nd</sup> AHWG. Although these comments provide general information about the classification of these substances, what is welcome and will be considered, it can not be considered in the revision of this last proposal as phthalates were not included.</p>
plasticiser	<p>"<u>plasticisers or additives based on lead, cadmium, chrome (VI), mercury and their compounds, arsenic, boron, copper and organic tin compounds</u>".</p> <p>Please note <u>that plasticisers are not based on lead, cadmium, chrome (VI), mercury and their compounds, arsenic, boron, copper and organic tin compounds.</u> Please remove the word "plasticisers"</p>	<p><b>Accepted</b></p> <p>Wording will be changes are recommended</p>
preservatives	<p>This is discriminating wood. What about the preservatives in lignified materials other than wood (e.g. bamboo)? please clarify. <u>Delete wood remain: stains, preservatives</u></p> <p>"wood stains, wood preservatives" This is only targeting at wood and by that discriminating since other materials are under the scope.</p> <p>this shall also be applicable for , cork and lignified material other than wood , just use "Preservatives" as headline</p>	<p><b>Accepted</b></p> <p>Discriminating wording has been removed from the criteria body as proposed</p>

	<p>Preservatives may be used in cork and lignified material other than wood too.  Rephrase: Treatment of wooden, cork and lignified materials other than wooden components with preservatives shall not be permitted.</p> <p><i>"The applicant shall provide a declaration of non-use of wood preservatives"</i>. consequently it shall be rephrased, The applicant shall provide a declaration of non-use of preservatives</p>	
	<p><i>Halogenated organic compounds shall not be allowed in substances and mixtures</i></p>	<b>Accepted</b>
<b>Comments during the EUEB meeting June 2016</b>		
Biocidal products	<p>The following text is very unclear. We actually, don't understand which substances are exempted and which are not. Please clarify the text.</p> <p><i>Active substances, other than blend (3:1) of chloromethylisothiazolinone (CMIT CAS No 26172-55-4) and methylisothiazolinone (MIT CAS No 2682-20-4), used for in-can preservation of water-based mixtures such as adhesives or lacquers shall however be exempt from this requirement.</i></p> <p><i>Among active substances exempted from this requirement, methylisothiazolinone shall not be included in the adhesive, resin or surface treatment at a concentration above 200 ppm; other isothiazolines at a concentration above 500 ppm.</i></p>	

	<p><i>Methylisothiazolinone</i></p> <p>Denmark supports the exclusion of the blend (3:1) of chloromethylisothiazolinone (CMIT) and methylisothiazolinone (MIT), used for in-can preservation of water-based mixtures used for treatment of the floor. However, Denmark has also asked for an exclusion of methylisothiazolinone (MIT). This is an ongoing discussion since criteria for soaps and shampoo and paints and varnishes.</p> <p>Denmark has several times raised the relevance of restricting this substance as much as possible. Now, the Risk Assessment Committee (RAC) in ECHA has agreed on a harmonised classification of MIT, indicating the concentration should be much much lower, than those we operate within the EU Ecolabel, across product groups. MIT will probably already at 1.5 ppm, trigger an EUH 208 declaration in paints/varnishes/mixtures: "<i>Contains methylisothiazolinone. May cause allergic reactions</i>".</p> <p>This should be reflected in ecolabelled products with the exclusion of MIT.</p> <p>In this product group, wooden/plant based flooring, Denmark proposes as a compromise here, a limit on 100 ppm for MIT.</p>	
	<p>MIT is then difficult to substitute, for the moment being. We can cope with &lt;200 ppm requirement, but if this would be lowered to &lt;100ppm I have to check with suppliers of these products. I would be glad to do so, but it would take some time (2 to 4 weeks I guess). On the other hand one has to take into account that, in case of lacquered parquet in a worst case scenario 1 % ww is applied. So the final content of MIT on the total product is VERY low and the resin is fully cured!</p> <p>I would plead for 200 ppm if possible, but if you want me to get more information I will be glad to do so</p>	

	<p>The proposed limit (100ppm) for MIT is too strict for the chemicals used for surface treatment of floor coverings because under 200 there may be problems of stability over time of in-can water-based mixtures.</p> <p>Furthermore the 100 ppm threshold would be contrary to the limits set on Ecolabel for paints COMMISSION DECISION 2014/312/EU of 28 May 2014 establishing the ecological criteria for the award of the EU Ecolabel for indoor and outdoor paints and varnishes</p>	
	<p>The CAS number for the blend CMIT/MIT is : n°55965-84-9. Furthermore other preservatives from Isothiazolines family should also be banned because of their properties. Why are CMIT/MIT banned and MIT and other isothiazolines are accepted under a limit value ? We suggest the following rewording : <i>"The treatment of wood, cork and/or bamboo of the floor coverings with biocidal products shall not be permitted. Biocidal products used for in-can preservation (PT6) of water-based mixtures such as adhesives or lacquers containing active substances from the group of isothiazolinone (CMIT/MIT (3:1) CAS n° 55965-84-9, MIT cas n° 2682-20-4, BIT CAS n° 2634-33-5 [and maybe other ones, it would be necessary to check ]) shall not be permitted. Others biocidal products used for in-can preservation of water-based mixtures such as adhesives or lacquers (PT6) are exempted from these requirements."</i></p> <p>If there is a technical reason for allowing MIT and isothiazolines under a limit value, the current sentences shall be maintained. In any case, the CAS for the blend of CMIT/MIT should be changed as we has suggested.</p>	

organic	Denmark supports the German and Austrian comments with regards to PVC, at least that we clarify in 4 g) that PVC is excluded. At the same time DK proposes to include fluorinated organic substances. Again merely a precision of the wording in 4 g) that could be: "4.g. <u>Halogenated organic compounds</u> .... <i>this include monomers of vinyl chloride, and fluorinated organic substances used in the manufacturer and final treatment of the floor</i> ".	
Halogenated compounds	We welcome very much that with criterion 4g PVC is excluded. But in order to harmonize criteria of different product groups, we suggest to add for clarification: " <i>Plastics manufactured using Vinyl Chloride Monomer (VCM) shall not be used in any part of the final product.</i> "	
	France supports the German, Danish and Austrian comments with regards to PVC and  fluorinated organic substances (comments sent by mail on 14 and 15 June).	
VOC-Definition	There are several VOC-definitions used; the one mentioned in Article 2 para. 6 is used for measuring indoor emissions but not for substances in preparations. For preparations like paints, coatings, adhesives and sealants the definition of the European Decopaint Directive (2004/42/EC) is mostly used and can be found in the SDS and /or at the packaging of these products. We would like to suggest to introduce both definitions, depending on the kind of VOC that it addresses. Otherwise CBs could not use the VOC information given by the varnish producer, but would have to re-calculate the VOC content according to the given definition! <i>Article 2 (6a) VOC as addressed in criterion 6: existing definition.</i>  <i>Article 2 (6b) VOC as addressed in criterion 4d: "VOC is any organic chemical with boiling point below 250 °C at a standard atmospheric pressure of 101.3 kPa. To be given as grams VOC per liter product."</i>	

#### 4.1.5 Table of comments and further research on energy consumption in the production process and waste management during the production process

The energy consumption criteria wording the comments are on is as follows:

##### Criterion 4.1 Energy consumption

The energy consumption shall be calculated as the process energy used for the production of the coverings. The process energy, calculated as indicated in the Appendix IIa, shall exceed the following limits (E = scoring point):

- E > 11.0 for solid wood,
- E > 8.0 for parquet, bamboo and cork floor coverings and laminate floor.

##### Assessment and verification

The applicant shall demonstrate that the E score has been calculated according to the Appendix IIa instructions and exceeds the limits of this criterion.

**Table 4.1. Calculation of the scoring point**

Formula	Maximum requirements	
$E = \frac{A}{20} + \left(5 - \frac{B}{3}\right) + \left(5 - \frac{C}{7}\right)$	A	--
	B	15 kWh/m <sup>2</sup>
	C	35 kWh/m <sup>2</sup>

Where A is the proportion of renewable fuel (%), B is the electricity consumption (kWh/m<sup>2</sup>) and C is the fuel consumption (kWh/m<sup>2</sup>)

The applicant should state and demonstrate:

- Which type(s) of fuel have been used in the manufacture of the wood based floor covering over the year prior to the application, and
- Which fuels are coming from renewable sources in accordance with Renewable Energy Directive 2009/80/EC<sup>38</sup>.

In addition, it should be stated and declared how much electricity has been used (purchased) and how much flooring (m<sup>2</sup>) has been produced over the year prior to the application in accordance with the instructions given in Appendix IIb.

<sup>38</sup> Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, L 140/16, OJEU 5.6.2009

### Appendix IIa. Guidance for calculating the process energy used

Energy consumption is calculated as an annual average. The following delimitations apply for what is included in the energy calculation:

- Electricity and fuel consumed in drying and sawing is included in the calculation for parquet flooring, bamboo flooring and solid wood floor,
- For laminate flooring that includes wood-based board in its structure, the energy consumed in the manufacture of the board is to be included.

At least 95% by weight of raw materials in the flooring must be included in the calculation of energy consumption during the manufacture process. Energy consumption in the manufacture of adhesives and lacquers used in the manufacture of the flooring is not included in the calculation.

Electricity consumption refers to electricity purchased from an external supplier. If the producer has an energy surplus that is sold as electricity, steam or heat, the sold quantity can be deducted from the fuel consumption. If electrical energy is produced on-site, one of the following methods can be used for calculating fuel consumption;

- Actual annual consumption of fuel,
- Consumption of electricity produced on-site multiple by 1.25.

Only the fuel that is actually used in floor covering production shall be included in the calculations. Energy consumption is reported in kWh/m<sup>2</sup>, although calculations may also be made in MJ/m<sup>2</sup> (1 kWh=3.6 MJ). The energy contents of various fuels are given in Table 4.2.

**Table 4.2. Standard fuel values**<sup>39</sup>

Fuel	MJ/kg	Fuel	MJ/kg	Fuel	MJ/kg
Petrol	44.0	Natural gas	47.2	Biogas	
Diesel		Power station coal	28.5	Wood chips (45% W)	13.8 (25%W)
LPG	45.2	Pellets (7% W)	16.8	Waste Wood	
Eo1 oil	42.3	Peat	7.8-3.8	<i>GJ/ton is equivalent to MJ/kg</i>	
Eo5 oil	44.0	Straw (15% W)			

(% W) is the percentage by weight of water in the fuel and given the letter *f* in the formulas below. If nothing else is stated, *f* = 0% W and the ash content is average.

The formula for calculating the energy content of woodchips depends on the water content. Energy is required to evaporate the water in the wood. This energy reduces the heat value of the woodchips. The energy content can be calculated as:

<sup>39</sup> These values are reported by the Energy Efficiency Directive 2012/27/EC, Chapter IV, "Energy content of selected fuels for end users". Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, L 315/1, OJEU 14.11.2012

Where *f* is the water content in %W of the wood. The factor 21.442 is the sum of water's heat of evaporation (2.442MJ/kg) and the energy content of dry wood 19.0 MJ/kg. If the applicant has laboratory analyses of the heat value of a fuel, the competent bodies may consider using this heat value for calculating the energy content.



**Appendix IIb. Guidance for reporting the type of fuels and amount of electricity consumed during the manufacturing process and the amount of flooring produced.**

1) Specification of the fuels, quantities and flooring production per year

Year of calculations:

Total production in this year (m<sup>2</sup>/year):

Total electricity purchase (kWh/year)

Total fuel purchase:

Column	A	B	C	D	E
Fuel	Energy Source (non-RE /RE)	Quantity (kg/year)	Standard fuel value	MJ	kWh/m <sup>2</sup>

Where:

Column A: classification of the fuels depending on the source. Fuels classified as RE should comply with the definition of "energy from renewable sources" in accordance with Renewable Energy Directive 2009/28/EC

*"energy from renewable sources" means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases"*

Fuels not complying with the above definition should be classified as non-RE.

Column B: quantity of fuel purchased during the year considered

Column C: Standard fuel value is the factor attributed to each fuel as included in Table 6 of the Appendix IIa

Column D: Total MJ contented in the annual purchase of this fuel. Column D is calculated for each fuel as follows:

$$MJ = \text{Quantity} \left( \frac{\text{kg}}{\text{year}} \right) \times \text{Factor} \left( \frac{\text{MJ}}{\text{kg}} \right)$$

Column E: Total power per square meter of wood base floor covering attributed with each fuel. The column E should be calculated as

$$\frac{\text{kWh}}{\text{m}^2} = \frac{\text{MJ (column D)}}{3.6 \times \text{total production this year (m}^2\text{)}}$$

2) Calculation of the values A, B and C to be used in the formula (Table 5) for calculating the energy consumed:

The values A, B and C are calculated as follows:

$$A = \frac{\sum \text{MJ}_{\text{Fuels classified as RE (Column A)}}}{\sum \text{MJ}}$$

$$B = \frac{\text{Total electricity purchase} \left( \frac{\text{kWh}}{\text{year}} \right)}{\text{Total production} \left( \frac{\text{m}^2}{\text{year}} \right)}$$

$$C = \sum \frac{\text{kWh}}{\text{m}^2} \text{ (Column E)}$$

The waste management criteria wording the comments are on is as follows:

#### **Criterion 4.2 Waste minimization management plan**

The producer shall:

- a) Sort waste at source into the fractions that arise during the production, and
- b) Draw up an appropriate waste minimization management programme stating waste fractions and describing implemented processes to deal with and to minimise waste originated from the production process through recovery and reuse or reprocessing.
- c) Implement the waste minimization management programme for at least the last year prior to the EU Ecolabel application and demonstrate its good performance

Waste from production with energy content greater than 10 MJ/kg (2.78 kWh/kg dry test) must be recovered, reused or reprocessed.

The waste management programme prepared under the responsibility of the applicant shall content and annually monitor and report the following information:

- Kind and quantity of waste produced,
- Breakdown of the total waste recovered to type of processes (information about the reuse of waste and secondary materials in the production of new products),
- Initiatives taken to reduce waste production and improve production efficiency,
- Initiatives taken to calculate and reduce the environmental impacts associated with the waste minimization or recovery,
- Initiatives or requirements for suppliers or contract manufactures.

#### ***Assessment and verification***

The applicant shall provide appropriate documentation showing compliance with these requirements in writing and demonstrating its implementation during the last year (prior to the EU Ecolabel application). The documentation should include:

- Description of the facilities to sort waste at source into fractions stating the type of fractions to be sorted out and their capacity,
- Description of the waste minimization processes and procedures implemented,
- Information in form of mass balance sheets or/and environmental reporting system showing the rates and detail breakdown of recovery achieved in the previous year and the initiatives taken.

Details of the rationale and previous stakeholders' comments considered to redrafting the energy consumption criterion and the waste management criteria can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting.

The comments received through BATIS are summarized in Table 14

**Table 14. Stakeholders comments on the energy and waste management criteria**

	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
<b>Scope of energy criterion</b>	<p>It would be good to <i>include also transports from the production place to the market</i>, but how easy this is, is another thing.</p>	<p>The inclusion of other energy consumption sources along the life cycle of the product could be a way of differentiate those products that are locally produced and consumed from those that have to travel long distances from the cradle to the grave.</p> <p>Although the measure could be based on estimates on the distance already covered by the raw materials and those that the finished products will be delivered and this estimate be introduced as an extra factor in the energy consumption criterion, the idea is full of uncertainties.</p> <p>Further details and accurate information is needed from industry to carry out and have a first estimation of the factors to apply to consider the transportation of raw materials and finished products for each of the floorings under consideration. As long as this information is not collected and assessed, it is preferable not to introduce the energy consumed in the transportation into this criterion.</p>
	<p>kWh/m<sup>2</sup> is <i>this kWh per m<sup>2</sup> production area (with storage? under roof?)</i> or per <i>m<sup>2</sup> produced flooring?</i></p>	<p><b>Accepted</b></p> <p>The maximum energy consumption is proposed to be per m<sup>2</sup> produced flooring. Exact units/wording will be introduced in the criteria wording.</p>

<p>Is the calculation of the <u><i>E factor clear enough?</i></u> <i>NO</i> is not clear and too complicate. And it is too strict</p> <p>Is better to not use the same letters in the formula of <u><i>E=(A/20)...and in the table in appendix IIb (columns A, B, C..)</i></u>. It can be source of confusion.</p> <p>In not clear the statement: <u><i>If electrical energy is produced on-site, one of the following methods can be used for calculating fuel consumption; actual annual consumption of fuel, consumption of electricity produced on-site multiple by 1.25</i></u></p> <p>In the case of production of energy from photovoltaic system</p>	<p><b>Accepted</b></p> <p>The criterion on the energy consumption is revised in more detailed in the new EU Ecolabel draft aiming at provided higher clarity regarding the following aspects;</p> <ul style="list-style-type: none"> <li>- procedure for the calculations</li> <li>- accountability of the energy produced on site, especially the electricity produced on-site ie PV systems</li> <li>- accountability of the green electricity</li> <li>- conversion factors for fuels and electricity</li> <li>- types of floorings that are considered in the criterion and which calculations should be considered for each type of flooring.</li> </ul>
<p>The table 4.2 in incomplete. <u><i>Referring to the example in slide (n. 51, 52) it is not clear if in the table 4.2 of appendix IIa have to be included a value for electricity like in current criteria.</i></u></p>	
<p>What about the <u><i>Energy produced? Such as electrical energy or heat energy. This is an important factor.</i></u>  <u><i>Lots of manufacturers produce their own energy by solar power or own power plants or their own heat by burning their own waste.</i></u></p> <p>This has a not negligible positive effect on these criteria that shall be taken into account.</p>	

Renewable sources and electricity	<p>We think that the idea of this criterion is to <u>promote use of renewable energy</u> which we support. However, it is not clear from the criteria if <u>the term A (the share of renewable fuels) also include the renewable fuels used for electricity production.</u></p> <p><u>Can the amount of purchased green electricity or the electricity generated on site from solar panels be added to the term A?</u></p> <p>We would support an approach where renewable electricity could be taken into account. Please clarify this.</p>	<p><b>Accepted</b></p> <p>Due to the importance of promoting renewable energy sources and the use of renewable energy several modifications have been proposed in the criteria;</p> <ul style="list-style-type: none"> <li>- the A factor includes the electricity produced on-site from renewable sources. If the renewable source has an energy carrier, the energy content in the energy carrier is accounted in the A factor. If the energy is produced without an energy carrier, the electricity produced is multiplied by 1.25 and the value is added to the energy content of other renewable energy carriers that have been used for the generation electricity.</li> <li>- the amount of green electricity however is not accounted in the A factor, as the electricity contributes to the B factor. However, in order to promote the use of renewable sources, a factor of 0.8 is used for the certified green electricity. This factor aims at decreasing the value representing the electricity consumption and leads to a higher overall E score.</li> </ul>
	<p>Both sub-criteria should be simplified. Moreover a working certified <u>environmental management system should be required dealing in particular with energy a waste issues. EMAS should be accepted as proof of compliance.</u></p>	<p><b>Rejected</b></p> <p>The environmental management systems aim at a continuous improvement of the environmental performance of the facilities where it is implemented. However, this policy tool does not set up horizontal threshold for an industry sector to be achieved. Therefore, this type of systems does not fulfil the requirements to be used as a proof of compliance.</p>
Waste management criterion	<p><u>Organizations certified against ISO 14001 shall automatically pass these criteria by showing their certificate.</u></p> <p>This <u>criterion is too complex and has too many gaps</u> it should be simplified</p> <p><u>Recognition of either:</u>  <u>ISO 14001 Environmental Management System,</u>  <u>ISO 50001 Energy management or EPD</u></p>	<p><b>Rejected</b></p> <p>The general agreement expressed during the 2<sup>nd</sup> AHWG meeting about the complexity and high number of gaps in the criteria wording as well as the uncertainties for the proper assessment and verification of this criterion supported the idea of withdrawing it.</p>

<p><u>“Waste minimization management plan” is very difficult to be verified and of uncertain efficacy. Both sub-criteria should be simplified. Moreover a working certified environmental management system should be required dealing in particular with energy a waste issues. EMAS should be accepted as proof of compliance.</u></p>	<p>A consultation was launched after the EUEB meeting held in June 2015 and the feedback from the Competent bodies pointed out that it would be better to remove it. The deletion of this criterion is also in agreement with most of the recently revised EU Ecolabel criteria sets where there is no waste management criterion.</p> <p>We appreciate, however, the ideas of the stakeholders and the comments received.</p>
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**Further research on the primary energy conversion factor from non-combustible energy sources<sup>40</sup>**

The concepts of primary and secondary energy have been further investigated to find out a way to integrate the electricity produced onsite into the formula. This introduction should favour the generation of electricity, heat or steam coming from renewable sources with or without energy carriers.

The method for calculating the primary energy of fossil fuels is clear and consistent. This method is based on the calorific value of the fuel and the amount of fuel required to generate a given unit of electricity or heat. The conversion factors, defined as standard fuel values in this scheme, as tabled in the Efficiency Energy Directive and proposed to be used in the calculations of fossil fuels and biomass. They are relatively straightforward to use and lead to simply the calculations. In contrast, primary energy factors for electricity or heat generated from renewable energies, waste or other sources are not calculated according to a single consistent methodology.

For electricity and heat from non-combustible renewable energy, several methodologies to account for primary energy and to calculate primary energy factors have been developed and applied. Among them there are methodologies that consider that the primary energy is, by definition, always zero for non-combustible, renewable energy sources. Other methodologies use so-called primary energy equivalents to calculate the primary energy of the generated electricity or heat. These primary energy factors have different values depending on the system boundaries under consideration.

Unlike biomass plants where the input of fuel and the generated electricity are measured similarly to fossil fuel plants, only the output of electricity is measured in non-combustible power plants using renewable energies (ie hydro power stations, wind turbines, PV, etc.). In theory, the primary energy equivalence for electricity from technologies such as wind turbines can be determined by using technical conversion efficiency for the generator that converts the kinetic energy of the wind into electricity. In practice, several conversion efficiencies would have to be determined for renewable energy carriers that would depend upon climatic conditions, technologies used and overall system integration. Instead, standardized (not technology, climate specific, etc) primary energy factors are used for electricity or heat generation.

<sup>40</sup> A. Stoffregern, O. Schulle, Primary Energy demand of renewable energy carriers – part 1: definitions, accounting methods and their applications with a focus on electricity and heat from renewable energies, April 2014, commissioned by the European Copper institute, Pe international AG

There are several methods to determine the primary energy factors, for example, the zero equivalent method, mentioned previously or the direct equivalent method. The further assumes a conversion factor of zero and the latter uses a primary energy equivalence of 100% between primary energy and electricity or heat for non-combustible renewable energy sources. This is a conversion factor that is also applicable in the physical energy content method for energy sources such as wind and hydro where the first practical use is electricity itself. The technical conversion method calculates the factors depending on multitude of factors, such as applied technologies and climatic conditions, the availability of data and the assumptions.

Due to the difficulties to apply these established methodologies, a common primary energy factor is suggested to be used in this scheme. This simplification is based on scarce diversity of non-combustible energy sources that are installed in the manufacture floor covering's facilities. In most of the cases, and due to the room limitations only PV panels are possible. The factor 1.25 was proposed by the Nordic Ecolabelling and adopted in this scheme.

### **Further research on credits for the purchase of green electricity<sup>41</sup>**

The use of green electricity instead of conventional electricity and its promotion has been requested to be revised during this project. The green electricity refers to the electricity generated from renewable sources. It is difficult to assess the benefits of using electricity coming from renewable sources from the environmental perspective. The Table 15 shows some data collected for the electricity generation in Texas coming from different sources. As shown, the emissions of CO<sub>2</sub>, SO<sub>2</sub> and NO<sub>x</sub> are considerably higher for the conventional energy sources. Water consumption is also higher for conventional sources and nuclear energy source. The only environmental impact indicator, the renewable energy sources score higher than the conventional ones is land used.

**Table 15. Data estimations in USA by fuels<sup>42</sup>**

	<b>Coal</b>	<b>Natural gas</b>	<b>Nuclear</b>	<b>Wind</b>	<b>Hydro</b>	<b>Solar</b>
Cost of the capacity (million \$/MW)	1.5	0.9	5.0	2.5	1.7	5.0
O&M cost (\$/MWh)	5	5	15	10	10	9.5
Fuel cost (\$/MWh)	15	80	5	0	0	0
CO <sub>2</sub> emissions (lbs/MWh)	2293	1146	0	0	0	0

<sup>41</sup> A. Stoffregern, O. Schulle, Primary Energy demand of renewable energy carriers – part 1: definitions, accounting methods and their applications with a focus on electricity and heat from renewable energies, April 2014, commissioned by the European Copper institute, Pe international AG

<sup>42</sup> Melissa Christenberry Lott, Quantifying the Economic and Environmental Tradeoffs of Electricity Mixes in Texas, Including Energy Efficiency Potential Using the Rosenfeld Effect as a Basis for Evaluation, Thesis Presented The University of Texas at Austin December 2010  
<http://www.webberenergygroup.com/publications/quantifying-the-economic-and-environmental-tradeoffs-of-electricity-mixes-in-texas-including-energy-efficiency-potential-using-the-rosenfeld-effect-as-a-basis-for-evaluation/>



SO <sub>2</sub> emissions (lbs/MWh)	6.8	1	0	0	0	0
NO <sub>x</sub> emissions (lbs/MWh)	5	0.03	0	0	0	0
Water consumption (gal/MWh)	426	223	600	0	0	0
Land use (acres/MW)	1.2	0.05	0.05	25	131	4.6

It is difficult to sum up the environmental impacts in just one number and to estimate in how many times the conventional electricity generation is impacting the environment compared to the renewable sourced electricity generation. Additionally, this value would also depend on the type of sources compared, the normalization and weighting methods chosen and the specific conditions of the region.

Even if the determination of a factor is difficult, its use would enormously simplify the process. This is the reason why a factor for the green electricity is proposed. Due to the fact that the non-combustible energy sources are considered in the factor A by being multiplied by 1.25 a similar factor, a similar factor is considered appropriate in magnitude for promoting the green electricity. In this case, a reducing factor should be applied. Its value would be  $1/1.25 = 0.8$

#### **4.1.6 Table of comments and further research on emissions of VOC from the floor covering and formaldehyde from floor covering and the core board**

The comments received on these issues are based on the following wordings:

Formaldehyde emissions from all supplied wood-based panels manufactured using formaldehyde-based resins or finishing agents shall either:

Have formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1<sup>43</sup>.

Specifically, in the case of MDF (Medium Density Fibreboard) panels, have formaldehyde emissions that are lower than 65% of the E1 threshold limit.

Have formaldehyde emissions that are lower than the limits set out in the CARB Phase II or the Japanese F-3 star or F-4 star standards.

**Assessment and verification:**

The applicant shall provide a declaration of compliance with this criterion. The assessment and verification of low formaldehyde emission panels shall vary depending on the certification scheme it falls under. The verification documentation required for each scheme is described in Table 5.1.

**Table 5.1. Assessment and verification of low formaldehyde emission panels**

Certification scheme	Assessment and verification
E1- as defined in Annex B of the EN 13986 (developed in the EU)	A declaration from the wood-based panel supplier, stating that the panel is compliant with 50% of E1 emission limits or, in the case of MDF panels, with 65% of E1 emission limits, supported by test reports carried out according to either EN 717-1, EN 717-2 or EN 120
CARB- California Air Resources Board: Phase II limits (developed in the USA)	a declaration from the wood-based panel supplier, supported by third party verified test results according to ASTM E1333 or ASTM D6007, demonstrating panel compliance with the formaldehyde Phase II emission limits defined in the California Composite Wood Products Regulation 93120 <sup>44</sup> . Optionally, the wood-based panel may be labelled in accordance with Section 93120.3(e), containing details in respect of the manufacturer's name, the product lot number or batch produced, and the CARB assigned number for the third party certifier (this part is not required if the products were made using no-added formaldehyde or certain ultra-low emitting formaldehyde-based resins).
F-3 or 4 star (developed in Japan)	the applicant shall provide a declaration from the panel supplier of compliance with the formaldehyde emission limits as per JIS A 5905 (for fibreboard) or JIS A 5908:2003 (for particleboard and plywood), supported by third party verified test data according to the JIS A 1460 desicator method.

In all cases, the applicant shall also declare that no further formaldehyde-based surface treatment was applied to supplied panels and that the panels were not modified in any another way that would comprise compliance with the formaldehyde emission limits set out in the European, American and Japanese schemes, as appropriate.

The indoor climate criteria the comments are based on is as follows:

<sup>43</sup> E1 is a threshold emission limit originally introduced in 1985 in the EU due to concerns over adverse health effects due to formaldehyde exposure. The emission limits are defined in Chapter B of EN 13986 and correspond to steady state background levels of 0.1ppm formaldehyde after 28d in a chamber test according to EN 717-1.

<sup>44</sup> Regulation 93120 "Airborne toxic control measure to reduce formaldehyde emissions from composite wood products" California Code of Regulations.

The wood-based floor coverings shall not exceed the emission values listed in Table 6.1 measured in a test chamber in accordance with TS/CEN 16516 or equivalent method and ISO EN 16000-3 for the formaldehyde emission value.

**Table 6.1. Emission requirements**

<b>Compound substance</b>	<b>or</b>	<b>Limit Value after 28 day in mg/m3 air</b>
TVOC*		0.16
TSVOC**		0.016
R-value***		1
Cancerogenic substances		0.004
Formaldehyde		0.04

\* TVOC – total volatile organic compounds, defined as those compounds within the retention range of C<sub>6</sub> to C<sub>16</sub> (inclusive)

\*\* TSVOC – total volatile organic compounds, defined as those compounds within the retention range of C<sub>17</sub> to C<sub>22</sub> (inclusive)

\*\*\*R value: total of all quotients (C<sub>i</sub>/LCI<sub>i</sub>) < 1 (where C<sub>i</sub>=substance concentration in the chamber air, LCI<sub>i</sub> = LCI value of the substance as defined by the latest data defined under the European Collaborative Action "urban air", indoor environment and human exposure

**Assessment and verification**

The applicant shall provide a declaration of compliance, supported by a test report from chamber tests carried according to the ISO 16000 series of standards. Tests carried out according to CEN/TS 16516 shall be considered as equivalent to ISO 16000.

The total VOC emissions per product unit basis shall be calculated and separately comply within each limit.

Details of the rationale and previous stakeholders' comments considered to redrafting the emissions from the core board can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting. The comments received through BATIS are summarized in **Error! Reference source not found.**

**Table 16. Stakeholders comments for the criteria on emissions from the core board and the finished products**

	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
<b>Formaldehyde emissions from the core board</b>	<p><i>"VOC and formaldehyde testing in the finished product will decrease the uncertainties"</i></p> <p>The EEB and BEUC hold the view that <u><i>BOTH, the particle board core AND the final product should be controlled and should not have more than 50% E1 formaldehyde emissions.</i></u></p> <p>Some industry stakeholders have stated at the technical meeting that controls and tests only on <u><i>the final product were sufficient and proposed to limit the formaldehyde emissions to E1 which is the threshold for all boards today.</i></u> On the contrary, we think it is more relevant from a consumer and safety perspective to carry out testing at an early stage to avoid any hazardous substances being present in the final product. In addition, the board which is labelled with the EU Ecolabel should have an added value compared to the other boards existing on the market, so it is not relevant to have the same formaldehyde restriction as in non-labelled, conventionally produced board.</p> <p>It is true that once the covering layers are applied on the final product, they mask formaldehyde emissions which do not get out of the panel and therefore the formaldehyde emissions from the final product will be very low. However, it does not mean there are no emissions as those contained in the panel will be released as residues over time into the indoor air once the product is already installed in consumers' homes.</p> <p>Hence checking the components and materials that make of a product at an early stage is very useful. <u><i>Therefore, the threshold of 50% of E1 in raw core board and finished the product should be implemented.</i></u></p>	<p><b>Partially accepted.</b></p> <p>There are comments on two different criteria, although as commented these criteria are linked. Regarding the proposed limit of 50% E1 for the core board, and the final product, the comment is accepted and modifications have been included into the criteria wording. This support makes criteria 5 to be kept.</p> <p>Regarding the emissions of the final product, the emissions of formaldehyde are measured together with other emissions (eg VOCs), due to the changes in the criterion 5, formaldehyde is proposed not to be measured in criteria 6</p>

<p><i>"50% of E1 emission limits or, in the case of MDF panels, with 65% of E1 emission limits"</i></p> <p>The requirement for the wood based panel, criterion 5: <u><i>emissions of formaldehyde in wood-based boards, should be E1 and not 50% or 65% E1.</i></u></p> <p>There is a threshold at which formaldehyde can be considered safe and E1 is that limit, there is no health based justification for going lower than this. The fact that in some regulatory jurisdictions a lower limit might be cited is not in itself a solid justification. The European wood based panel industry is committed to E1 and for many countries exporting to Europe, E1 will be a stretched target.</p>	<p><b>Rejected</b></p> <p>The E1 is a mandatory level that guarantees a product to be considered as safe but it is not a sign of excellence. The E1 level should be fulfilled by all the products that are going to be placed in the European market.</p> <p>If the criteria 5 required a level of compliance of E1, this would be useless since the level E1 is already required by the CE marking and it is not able to make any difference among the products. Higher levels of ambition are therefore needed.</p>
<p>Have formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1</p> <p>Our experience from the Nordic Ecolabel is that this <u><i>criterion can be very confusing with the references to the different formaldehyde standards and labels.</i></u> Therefore we would like to suggest that you rewrite the criterion so that <u><i>instead of referring to different per cents of E1 and CARB you actually write out the absolute limits in ppm and mg/m<sup>2</sup>.</i></u></p> <p><u><i>The E1 CARB phase II standards include different test methods that should be accepted.</i></u></p> <p>The verification of the requirement would be the <u><i>test result and test report</i></u> showing that the formaldehyde emission is lower than the limit value</p> <p>Otherwise the complexity of the CARB phase II standard with its different limit values for formaldehyde emissions for different boards will only confuse the applicant and make the assessment procedure difficult.</p>	<p><b>Accepted</b></p> <p>The numerical values of the limits have been added to the criterion wording. However, we proposed to keep also the percentages to gives an idea of the level of ambitions required and because it seems the way how the emissions are expressed in the sector.</p>

	<p><i>"have formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1. In the case of MDF panels, formaldehyde emissions shall be lower than 65% of the E1 threshold limit".</i></p> <p>BEUC and EEB <u>fully support the limit to formaldehyde emissions to 50% of the threshold value allowing them to be classified as E1</u>, which is the applied standard for normal production. We are glad to see that the ambition level of the formaldehyde requirements is in line with the Japanese standard which is considered as one of the front-runners in the sector.</p>	<p><b>Acknowledged</b></p>
<p><b>Level of strictness emissions from finished product</b></p>	<p>BEUC and EEB <u>support the JRC proposal to set limits to: 0.16 mg/m<sup>3</sup> air for TVOC, and 0.016mg/m<sup>3</sup> for TSVOC and we will not support any lower thresholds as we consider these limits are ambitious and feasible.</u> Indeed, OCU, the Spanish organisation for users and consumers has got tests performed by laboratories on laminate floors sold in Spanish shops. The results have shown that the VOC emissions in the final products are lower than the ones proposed by the JRC. There are therefore no obstacles for manufacturers to comply with these requirements considering the existing products in the market.</p> <p>In addition the values proposed by the JRC are aligned with the Nordic Swan Ecolabel and this demonstrates the feasibility of such thresholds (please see the JRC first technical report from September 2014, on p.65)</p> <p>We generally support the thresholds proposed by the JRC in the criterion on indoor climate. Some thresholds (Total organic compounds within the retention range of C<sub>6</sub> to C<sub>16</sub> (TVOC), and Total organic compounds within the retention range of &gt; C<sub>16</sub> to C<sub>22</sub> (TSVOC)) have been questioned by industry stakeholders during the technical meeting who suggested to lower them in alignment with the Blue Angel or Nordic Swan criteria. BEUC and the EEB see the usefulness in general to align between the requirements of different schemes but disagree in this case as it would result in a loss of ambition.</p>	<p><b>Rejected</b></p> <p>The values set in TR2.0 seem to be unfeasible to be reached at industrial level and with today's technology. Likely, the proposed values in the TR2.0 contained a typing mistake that should be corrected</p>

	<p>Table 6.1. Emission requirements.</p> <p>I did not understand the rationale behind these limits and would propose a copy of Blue Angel RAL UZ 176 limits instead.</p>	<p><b>Accepted</b></p> <p>Limits have been revised finding out that the values were not possible to be achieved. In the new version they are proposed to be in line with several national schemes such as Blue angel RAL UZ 176 and Nordic Labelling for Floor coverings version 6, among others</p>
	<p><u>We encourage the JRC to lower the threshold for carcinogenic substances from 0.004 mg/m<sup>3</sup> (the current EU Ecolabel limit) to 0.001 at least.</u> A threshold of 0.001 mg/m<sup>3</sup> is the current value in the Blue Angel requirements and we therefore believe the same limit value should be set for the EU Ecolabel.</p> <p><u>In addition, we strongly encourage the JRC to lower the initial R-value from 1 to 0.5.</u></p>	<p><b>Rejected</b></p> <p>The value on carcinogenic substances is proposed to be withdrawn due to the lack of information. Additionally, the presence of CMR covers partially this aspect.</p> <p>The R-value is proposed to be kept as 1 to be in line with most of the voluntary schemes and national legislations</p>
<p><b>Withdraw of testing formaldehyde emissions</b></p>	<p>"The wood-based floor coverings shall not exceed the emission values listed in Table 6.1 measured in a test chamber in accordance with TS/CEN 16516 or equivalent method and ISO EN 16000-3 for the formaldehyde emission value"</p> <p>This is a good general requirement on the dangerous emissions from the finished floor.</p> <p>Because the <u>limits in this requirement are so stringent it could be an alternative to criterion 2.6, that as a limit for emissions of formaldehyde in boards, accept both E1 and CARB phase 2.</u> This would make the assessment procedure faster and decrease the confusion regarding all the different limits and test methods in the criterion 2.6.</p>	<p><b>Rejected / Acknowledged</b></p> <p>Two points are considered not to accept the comment:</p> <ul style="list-style-type: none"> <li>- the limits of the VOCs emissions from the finished products are considered as unreachable and therefore lower limits are proposed in the new draft</li> <li>- testing the VOCs and formaldehyde content in the raw materials and their emissions from the finished products to comply with the EU ecolabel criteria was the decision of the EU Ecolabel Board in June 2015. Therefore, both criteria are proposed to be kept in this new proposal.</li> </ul>
	<p>Derogations might be carefully assessed referring to substances naturally present in wood (like e. g. acetic acid).</p>	<p><b>Acknowledged</b></p> <p>The process for assessing the information regarding the emission of acetic acid from wood that is above the proposed VOC limits has started. The consultation with experts on this point may lead in the modification of the criteria wording for wood floorings</p>
<p><b>ing: clarif icatio</b></p>	<p>This is discriminating wood. What about the formaldehyde emissions from boards made of lignified materials other than wood?</p>	<p><b>Accepted</b></p> <p>Wording of the criteria has been revised to extend the scope of the</p>

<p><i>The total VOC emissions per product unit basis shall be calculated and separately comply within each limit. Please clarify: m<sup>2</sup> of flooring?</i></p> <p><i>The total VOC emissions per product unit basis shall be calculated and separately comply within each limit. Unclear what this means in this document here.</i></p>	<p>criteria to all the materials The unclear sentence has been replaced by "Each of the compounds or substances included in Table 6.1 shall be calculated and separately comply within each limit"</p>
<p>It should be specified that the <u>chamber test has to be carried out 28 days after the conclusion of the surface treatment.</u> At this time the product to be tested has to be put in a sealed package at the production site and thus delivered to the test laboratory.</p> <p>A clearer and more explanatory wording could be: <u>... after 28 days storage in a ventilated test chamber (see CEN/TS 16516).</u></p>	<p><b>Accepted</b> Wording has been revised and improved introducing the clarifications indicated during the revision process</p>
<p><i>CEN/TS 16156 and ISO 16000-9 for formaldehyde</i> <i>These standards are for VOC emissions in general, among that also for formaldehyde.</i></p> <p>This is not clear from present wording. Just delete "for formaldehyde". So EN 16000-3 analysis is included in TS 16516 and does not need to be mentioned separately.</p> <p>CEN TS 16516 1: The <i>nomination is wrong, should be CEN/TS 16516</i> (not the other way round). This occurs repeatedly in the text. 2: The link behind contains private advertisement for on lab, please use this neutral link instead: <a href="http://www.centc351.org/">http://www.centc351.org/</a></p>	<p><b>Acknowledged</b> Because the focus of the criterion 5 has been changed, this requirement is no longer needed. The restriction on the emissions of formaldehyde from the whole product are measured and assessed in the criterion 5 instead of the criterion 6.</p>
<p><i>Formaldehyde emissions from all supplied wood-based panels manufactured using formaldehyde-based resins or finishing agents shall either:</i></p> <p>Please see the table with the different limit values in the different standards for formaldehyde emissions</p>	



We have *concerns regarding limits for TVOCs* as it is not a health based indicator and any limits are therefore arbitrary and a little crude.

Wood can emit many different VOCs, to simply add them up and assume they are all dangerous is not correct. There have been studies on pine wood that report, even at high emission levels, the toxicological effect is without risk to health<sup>45</sup>

This in turn *would also question the relevance of the R value*, whilst this is based on the lowest concentration of interest (LCI), products with many LCIs will be penalised. Surely the lowest concentration of interest is just that and any emissions at or below it (assuming it is the correct level) can be considered safe for any individual substance, why should their relative proportions be added up to determine safety, *what the R value in effect does is to place a safety factor on the safety limit which already has a safety factor, it doesn't make a product any safer because it was safe to begin with.*

In light of the studies on the toxicological effects of wood and the TVOC and R value arguments above, *we would question the need for any VOC requirement being placed on wood products' natural VOCs*. The *exception* to this would of course *be the release of dangerous substances from something added to the wood e.g. formaldehyde based resins, which are dealt with in criterion 5* and in addition there is legislation regarding carcinogens that already determine safe limits for them. *We would therefore argue that criterion 6 is not needed and can therefore be deleted.*

#### **Acknowledged - accepted**

The process for assessing the information regarding the emission of acetic acid from wood that is above the proposed VOC limits has started. The consultation with experts on this point may lead to modifications in the criteria wording

<sup>45</sup> Cytotoxicity and genotoxicity in human lung epithelial A549 cells caused by airborne volatile organic compounds emitted from pine wood and oriented strand boards – (Richard Gminski, Tao Tang, Volker Mersch-Sundermann – 2009) & Chemosensory irritations and pulmonary effects of acute exposure to emissions from oriented strand board – (Richard Gminski, Rainer Marutzky, Sebastian Kevekordes, Frank Fuhrmann, Werner Burger, Dieter Hauschke, Winfried Ebner, and Volker Mersch-Sundermann – 2010).

	<p>The wood contains naturally acetic acid that is a VOC that gives a high contribute to indoor emissions values. The tests we have done show a contribution about 70 % acetic acid on total VOC emissions, in particular with the oak.</p> <p>Should be very important have derogation for acetic acid (CAS n. 64-19-7).</p> <p>Is needed specify that cancerogenic substances are cancerogenic VOC's (like in AgBB standard) It is enough test on TVOCs, TSVOCs and no needed the limit on R value</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Wording VOC emissions from the finished products</p>	<p>"TVOC – total volatile organic compounds, defined as those compounds within the retention range of C6 to C16 (inclusive)"</p> <p>This definition deviates from CEN/TS 16516 and ISO 16000 definition, and therefore yields different test results without any need. The markers are n-hexane (not hexane which is a mixture of several isomers) and n-hexadecane (not hexadecane which again is a mixture of a large number of isomers). Single substances are needed for unambiguous definition.</p> <p>Correct wording as in the standards is: <u>TVOC – total volatile organic compounds, defined as those compounds within the retention range of n-C6 to n-C16 (inclusive).</u></p>	<p><b>Accepted</b></p> <p>The CEN/TS 16516 and the ISO 16000 are the standard proposed as a reference for the compliance with this criterion, therefore the definition of TSVOC should be fully in line with these standard. The definition of TSVOC in the criteria wording has been replaced and additionally, the definition included in the CEN/TS 16516 will be included in the user manual.</p>

	<p><i>"TSVOC - total volatile organic compounds, defined as those compounds within the retention range of C<sub>17</sub> to C<sub>22</sub> (inclusive)"</i></p> <p>This definition deviates from CEN/TS 16516 and ISO 16000 definition, and therefore yields different test results without any need. The markers are n-hexadecane (not hexadecane which is a mixture of a large number of isomers) and n-docosane (not docosane which again is a mixture of a large number of isomers). Single substances are needed for unambiguous definition.</p> <p>And the definition in the standards also includes some hexadecane isomers in the SVOC definition - those appearing after n-hexadecane in the chromatogramme. Therefore the lower margin must be "after (or larger than) n-C16".</p> <p>Correct wording as in the standards is: <u><i>TSVOC - total volatile organic compounds, defined as those compounds within the retention range of &gt;n-C16 to n-C22 (inclusive)</i></u></p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>Spelling and corrections in the rationale</b></p>	<p><i>"and Finland"</i></p> <p>No, not compulsory in Finland.</p>	<p><b>Accepted</b></p>
	<p><i>"adequate voluntary labels like the eco-<u>INSTITUT</u>-Label, Nordic Labelling or Blue Angel can also be evaluated according to these type of tests"</i></p> <p>To stay <u><i>neutral towards the market of test labs, please either mention all of them, with the respective links (i.e. add natureplus, M1, Indoor Air Comfort Gold), or delete any names mentioned</i></u> here (maybe with the exception of Blue Angel because it is public, and it has the most certified products).</p>	<p><b>Accepted</b></p> <p>Wording of the criteria has been revised to become as neutral as possible towards the market of test labs.</p>

<p>French VOC regulation. DIBt and AgBB  The link behind contains private advertisement for on lab, please use this neutral links instead:  France: <a href="http://www.developpement-durable.gouv.fr/Chapitre-I-Mode-d-emploi-de-l.html">http://www.developpement-durable.gouv.fr/Chapitre-I-Mode-d-emploi-de-l.html</a>  AgBB: <a href="http://www.umweltbundesamt.de/en/document/agbb-evaluation-scheme-2015">http://www.umweltbundesamt.de/en/document/agbb-evaluation-scheme-2015</a>  DIBt: <a href="https://www.dibt.de/en/Departments/Section_II4.html">https://www.dibt.de/en/Departments/Section_II4.html</a>  Belgium<sup>46</sup>:</p>	<p><b>Acknowledged</b>  Changes in the TR2.0 as indicated have also been applied to TR3.0 whenever suitable.</p>
<p>Belgium and French VOC regulation. DIBt and AgBB measurement, however, can be consulted in this context.  Not completely. <i><u>French measurement only delivers TVOC and formaldehyde, not the other parameters. On the other hand, AgBB and DIBt tests deliver all here requested data.</u></i></p>	<p><b>Acknowledged</b>  Changes in the TR2.0 as indicated have also been applied to TR3.0 whenever suitable.</p>
<p>The high density fiber (HDF) boards should be included in this criterion  - formaldehyde emissions that are lower than 50% of the threshold value allowing them to be classified as E1 as defined in Annex B to EN 13986+A1 (applying to all floor coverings and non-MDF/<b>non-HDF</b> core panels);  - formaldehyde emissions that are lower than 65% of the E1 as defined in Annex B to EN 13986+A1 threshold limit applying to Medium Density Fibreboard (MDF/<b>HDF</b>) panels;  Does the second alternative apply also to all floor coverings as the first alternative?</p>	

<sup>46</sup>

[http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CCwQFjAC&url=http%3A%2F%2Fhealth.belgium.be%2Finternet2Prd%2Fgroups%2Fpublic%2F%40public%2F%40mixednews%2Fdocuments%2Fie2law%2F19099823\\_de.pdf&ei=NChnVYa1FcWBU5HhgPgJ&usg=AFQjCNEkbShrmsNmz-G\\_swB2LmX7D-AfZw&bvm=bv.93990622,d.d24&cad=rja](http://www.google.be/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0CCwQFjAC&url=http%3A%2F%2Fhealth.belgium.be%2Finternet2Prd%2Fgroups%2Fpublic%2F%40public%2F%40mixednews%2Fdocuments%2Fie2law%2F19099823_de.pdf&ei=NChnVYa1FcWBU5HhgPgJ&usg=AFQjCNEkbShrmsNmz-G_swB2LmX7D-AfZw&bvm=bv.93990622,d.d24&cad=rja)

	<p>The formaldehyde value for MDF should clearly differentiate between treated or coated and untreated or uncoated MDF as used in laminate or parquet flooring. The coatings of laminate are now so stable (and sealed) that they are among the lowest-emission flooring. The stricter value should therefore apply.</p> <p>We understand the criterion as follows:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> the 65% Formaldehyde cover only untreated MDF</li> <li><input type="checkbox"/> treated or sealed MDF fall under 50% clause "applying to all floor coverings"</li> </ul> <p>But since Floor Covering is defined as an assembly of elements, what about single panels? The criterion as it is written now, allows treated or coated MDFs to apply the less strict value. We suggest to add further clarification in the criterion, subparagraph 2: "65% ... applying to <b>untreated or uncoated</b> MDF panels".</p>	

#### 4.1.7 Table of comments and further research on fitness for use

The use phase: fitness for use criteria wording the comments are on is as follows:

<p>Wooden floor coverings shall achieve at least:</p> <ul style="list-style-type: none"> <li>Class 32 for floor coverings for private use,</li> <li>Class 33 for floor coverings for commercial use,</li> </ul> <p>in accordance with standard EN 685 or EN ISO 10874.</p> <p><b>Assessment and verification:</b></p> <p>The applicant shall provide third party verified test results in accordance with the appropriated standard that demonstrates that the requirement is fulfilled. The test method should be performed in accordance with:</p> <ul style="list-style-type: none"> <li>- EN 13329 and EN 12104 (cork tiles) or equivalent for laminate flooring,</li> <li>- EN 14354 (veneer wood flooring) or EN 438-2 or equivalent for wood flooring including solid wood flooring, factory lacquer wood flooring and parquet flooring,</li> <li>- EN 687 or equivalent for bamboo flooring.</li> </ul>
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Details of the rationale and previous stakeholders' comments considered to redrafting the fitness for use criteria can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting. The comments received through BATIS are summarized in Table 17

**Table 17. Stakeholders feedback on fitness for use**

	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
<b>Level of strictness</b>	Is the fitness for use too strict? <i>YES.</i>	<b>Accepted</b> The main reason why the classes have been decreased one level is to harmonize the requirements among the different types of floorings as much as possible. The wood floorings are rated from W1 to W4 while other floorings are rated from Class 21 to 41. Equivalence table shows that class 22 correspond to W2 and that class 32 would fall under W3
	Would it be better to set up a minimum fitness for use performance on class 32 independently of the use? <i>NO. <u>Is enough class 22 and class 32 instead of 23 and 33</u></i>	
	BEUC and EEB <i><u>hold the views that floor coverings should achieve class 32 for private use AND commercial use.</u></i>  Our rationale is that <i><u>class 32 guarantees the product's resistance, durability and therefore an expanded product lifetime,</u></i> which is one of the main features of ecological products. Besides, the class 32 is always recommended to consumers by the staff working in building supply stores. Even big manufacturer like Quick Step in the UK advertises their laminate floors by making reference to the class 32 on their website. Please check: <a href="http://www.quick-step.co.uk/Articles/Quality-standards-for-laminate-flooring">http://www.quick-step.co.uk/Articles/Quality-standards-for-laminate-flooring</a> .	<b>Rejected</b> Even if this level of performance may be offered by the laminate flooring industry due to the fast development of the last years, a similar level is almost to be applied for wood floorings. Additionally, there are laminate floorings that claim to be AC4 or even AC5 for private use, that would be classified as higher class than 22 regarding this aspect but that fail the overall classification when other aspects are also considered.
<b>standards</b>	It is better a reference to the general rules of the field and not specific. <i><u>For CE mark our reference (parquet producers) is EN 14342 that not include that classification in accordance with EN 685.</u></i>	<b>Acknowledged</b>

<b>Refurbishment</b>	<p>"It prevents from a premature refurbishment saving resources."  <u>Refurbishment is one of the biggest advantages of parquet compared to other flooring products that are thrown away if refurbishment would be needed.</u> At normal use parquet can be renovated twice at least.</p> <p>Pre-assumption is that real <u>parquet as defined in EN 13756 defines parquet with a wooden top layer of equal or more than 2.5 mm prior to installation.</u> If this requirement is not fulfilled a products must not be called parquet.</p>	<p><b>Acknowledged / accepted</b>  The requirement for parquets to be able to be refurbished having introduced in the criterion 6.c updating and reparability. Additionally, this information is set as requirement in the User information criterion.</p>
	<p>The criterion should apply to all different kind of products in the scope not only to wooden ones.  The EN 14342 standard should be considered as well.</p>	<p><b>Accepted</b>  Modifications in the wording have been proposed with this regard.</p>
<p><b>Comments during the June 2016 EUEB meeting</b></p>		
	<p>in the "assessment and verification" part, could you clarify what is the meaning of « test methods are comparable ? Is there a standard which would permit to check if the method is comparable ?</p>	

### **Further research on the standards and types of floorings**

During the 2<sup>nd</sup> AHWG meeting industry pointed out that the proposed standards to measure the fitness for use of the different types of flooring was not correct because of mismatches between the purposes of the standards and the type of floorings and other points.

The revision of the appropriateness of the standards was carried out based on the information provided in the environmental product declarations (EPD) of different products:

#### **a) cork flooring:**

a.1) cork floor tiles according to EN 12104 is a flooring made from agglomerated composition cork supplied in tile form which is designed to be used with a factory finish and/or an in situ finish. Cork floor coverings can be covered with other complementary layers of decorative materials, e.g. decorative cork or wood veneers, with or without applied colours

EN 12104 includes a classification system based on intensity of use which shows where cork floor tiles should give satisfactory service (see EN 685). It also specifies requirements for marking, labelling and packing. The table for the classification requires different tests and to achieve different benchmarks as reported in Table 18

**Table 18. Table for the fitness for use classification of the cork flooring**

Class	Level of use	Overall Thickness (mm)	Apparently density (kg/m <sup>3</sup> )	Residual indentation (mm)	Castor chair	Simulated movement of a furniture leg
21	Domestic moderate	≥ 3.2	≥ 400	≤ 0.4	No requirement	No requirement
22	Domestic general	≥ 4.0	≥ 450 with or without veneer	≤ 0.4		
23	Domestic heavy	≥ 4.0		≤ 0.4		
31	Commercial moderate	≥ 4.0		≤ 0.4		
32	Commercial general	≥ 4.0	≥ 500 with or without veneer	≤ 0.3	No disturbance to the surface other than slight change in appearance and no delamination shall occur	No damage shall be visible after testing with type 2 foot
41	Industrial moderate	≥ 4.0		≤ 0.3		
Relevant standard	EN 685 EN ISO 10874	EN 428	EN 672	EN 433	EN 425	EN 424

The cork tile floorings report in the EPD the values of the product thickness and surface weight according to EN ISO 24346 and EN ISO 23997 respectively. The reference service life of the product can be or cannot be reported in the EPD. In the latter case, a reference to an online tool for the calculation on the ERFMI<sup>47</sup> home page can show up.

a.2) *cork floor covering* is a floor covering the main component of which is agglomerated composition cork, intended to be used with a finish (source: EN 12466)

The cork flooring is classified regarding the application in accordance with ISO 10574 standard (replacing the EN 685). Several testing should be carried out to determine the parameters that allow this classification. According to the EPD, these parameters are included in Table 19

**Table 19. Classification properties and test methods for cork floorings**

Classification properties	Standard	Classification properties	Standard
Wear layer density	ISO 23996	Nominal thickness of cork surface	EN 660-1

<sup>47</sup> <http://www.erfmi.com/calculator.php> ERFMI is the European resilient flooring manufacturer institute association that performs the following activities: 1. obtaining and disseminating to members such relevant information about the resilient flooring industry as may be considered desirable; 2. represents the industry in negotiations with government departments, public bodies, trade associations, NGO and similar bodies in the European market 3. promoting the preparation of international standards, specifications and classification systems and their adoption; 4. promoting any activities that further the interests of the resilient flooring industry.



Flatness of the panel: Length: concave/convex Width: concave/convex	EN 14085 Annex A	Wearing group	EN 660-1
Opening between the panels	EN 14085 Annex B	Castor chair	EN 425
Height difference between the panels	EN 14085 Annex B	Simulated movement of a furniture leg	EN 425
Dimensional stability (humidity)	EN 14085 Annex C / EN 669	Residual indentation	ISO 24343-1
Mass per unit area	ISO 23996		

### **b) laminate floorings:**

Laminates are according to the EN 13329 a floor covering with a surface layer that consisting of one or more thin sheets of a fibrous material (usually paper), impregnated with aminoplastic, thermosetting resins (usually melamine). The standard EN 13329 includes the requirements that all the laminate floor coverings shall conform to and the tested methods as well as the classification requirements.

All laminates should be classified as suitable for different levels of use according to the requirements specified in this standard EN 13329 when tested by the test methods given. The classification shall also conform to the scheme specified in EN 685. The requirements and the test methods to be tested are shown in Table 20

**Table 20. Classification properties and test methods for laminate floorings**

<b>Classification properties</b>	<b>Test method</b>	<b>Classification properties</b>	<b>Test methods</b>
Abrasion resistance	EN 13329: Annex E	Effect of a furniture leg	EN 424
Impact resistance	EN 13329: Annex E	Effect of a castor chair	EN 425
Resistance to staining	EN 438	Thickness swelling	EN 13329 : Annex E
Resistance to cigarette burns	EN 438		
<i>Additional requirements</i>			
Humidity at dispatch from the manufacturer	EN 322	Appearance, surface defects	EN 438

The products require a declaration of performance that takes into account the harmonized EN 14041 and the CE marking. Product specifications, requirements and test methods for laminate flooring are laid down in EN 13329. *Definitions of the utility classes for certain usage areas and performance classes are based on the above-mentioned norm and ISO 10874*

### **c) Wooden floor coverings:**

Several types of wood floor coverings are not classified by the use as the laminate floorings do. These are parquet (lamparquet, mosaic parquet or multi-layer parquet), wood veneer floor coverings or solid hardwood floorings among others. A couple of the characteristics of these flooring regarding the durability are the hardness in accordance with EN 1534 and the requirement of being capable of undergoing renovation at least twice, provided installation and renovation are done properly.

The standard EN 1534, Wood and parquet flooring- Determination of resistance to indentation (Brinell) - Test method" specifies a method, derived from the Brinell test, for determining the resistance to indentation of wood and parquet flooring. The indentation is measured as indentation under action that is the deformation of the surface of the test specimen while the action of the indenter is applied. However, this standard does not address from a comprehensive point of view the fitness for use of the flooring, but just a single aspect.

The standard EN 14342, Wood flooring - Characteristics, evaluation of conformity and marking defines and specifies the relevant characteristics, requirements and appropriate test methods for determination of the suitability of wood products for use as internal flooring including in fully enclosed public transport premises.

The Standards applied for the following floorings:

- Solid parquet elements with tongues and grooves (EN 13226);
- Solid lamparquet products (EN 13227);
- Solid wood overlay elements including blocks with an interlocking system (EN 13228);
- Mosaic parquet elements (EN 13488);
- Multi-layer parquet elements (EN 13489);
- Solid pre-assembled hardwood board (EN 13629);
- Solid softwood floor boards (EN 13990);
- Parquet: vertical finger, wide finger and module brick (EN 14761).

### **d) Bamboo floor coverings**

The durability of bamboo floorings is not standardized. In this cases, the industry reports the characteristics of the bamboo flooring (test results and test methods) without classifying the flooring. Due to the lack of standards, industry can adapt standards developed for other types of floorings to their necessities (eg FprEN 1534) or carrying out their out measurements, leading to different measures that are not comparable. Setting a minimum performance, is therefore, extremely difficult.

Among the parameters measured to obtain the CE-marking set in the Building Materials Directive 89/106/CEE in accordance with harmonised standard EN 14342:2005 + A1:2008, system level 3 certification the bamboo floorings should comply with the following requirements:

**Table 21. Testing included in the CE-marking**

Type of test	Required level	Norm
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<b>Density and thickness</b>	500 kg/m <sup>3</sup> , 15 mm	EN 14342:2005 + A1:2008
<b>Reaction to fire</b>	Dfl-s1	EN 13501-1
<b>Formaldehyde emissions</b>	E1	EN 717-1 and 2
<b>Thermal conductivity</b>	0,17 W/m <sup>2</sup> K	EN 335-1 and 2
<b>Biological durability</b>	Class 1 - Class 5	EN 335-1 and 2
<b>Content of pentachlorophenol</b>	< 5 ppm	EN 14342:2005 + A1:2008

Additionally, other characteristics of the bamboo floorings are recommended to be assessed such as;

- moisture content
- hardness in accordance with the Brinell scale (EN 1534)
- resistance to abrasion in accordance with EN-14354 standard
- adhesion of the coating to the underlying material tested in accordance with EN-ISO 2490 standard, and
- impact resistance tested in accordance with EN-14354 standard

Table 22 shows the type of floorings in this sub-group, the standards that regulate their characteristics and the possible thresholds suggested.

**Table 22. Standards that regulate their characteristics the type of floorings**

<b>Standard</b>	<b>Flooring</b>	<b>Characteristic</b>	<b>Standard and threshold</b>
EN 13226	Wood flooring – Solid parquet elements with grooves and/or tongues		
EN 13227	Wood flooring – Solid lamparquet products	If required, typical values for wood hardness shall be determined by the test defined in EN 1534. Solid lamparquet shall be capable of undergoing renovation at least twice, provided installation and renovation are done properly.	
EN 13488	Wood flooring – Mosaic parquet elements	The products specified by this standard are a component part of a total parquet construction and therefore can only meet the technical requirements when in service if the whole parquet has been fully specified and installed to those specifications. Typical values for indentation are specified on the basis of EN 1534.	

EN 13489	Wood flooring – Multi-layer parquet elements	Multi-layer parquet with a mosaic-like pattern shall be classified according to EN 13488 Multi-layer parquet shall be capable of undergoing renovation at least twice, provided installation and renovation are done properly.	
EN 13629	Wood flooring – Solid individual and pre-assembled hardwood boards	Typical values for wood hardness shall be determined by the test defined in EN 1534. The solid element as described in this standard shall be capable of undergoing renovation at least twice, if not subject to excessive wear and tear or if renovation does not remove an excessive amount of wood	
EN 13990	Wood flooring – Solid softwood floor boards	Softwood floor boards referred to in this standard are renewable. The minimum thickness of the wear layer is 3 mm (compare with table 1 - thickness of upper lip).	
EN 14342,	Wood flooring – Characteristics, evaluation of conformity and marking		
EN 14761	Wood flooring – Solid wood parquet – Vertical finger, wide finger and module brick	Typical values for wood hardness are determined by the test defined in EN 1534. Specific site requirements Refer to EN 14342	

### **Further research on the benchmarks**

The strictness of the benchmarks is one of the aspects of the criterion that should be revised. There is no consensus in the feedback from stakeholders about the minimum level to be required. In general, as explain before a serie of classification properties that lead it to be label with two numbers. The first digit indicates the type of use that the flooring is suitable for (eg domestic (2), commercial (3) or industrial (4)). Regarding this first classification, an increase in the number order indicates an increase in the classification properties (eg commercial floorings classified with 3x have a higher wear layer density than those classified as domestic ones (2x)).

The second digit denotes the traffic the flooring is prepared for. There are three levels of traffic: moderate (1), general (2) or heavy (3). Likely the use digit, the higher the digit the higher the classification property value.

Nowadays, even if the floorings are intended to be used in a domestic sector, most of the floorings reach the values to be classified as commercial floorings. This fact guarantees that a flooring has a potential longer lifespan since its quality is higher than that of a domestic flooring. For example, the EPD of several floorings indicated to be use in the residential sector state

*"... This flooring fit the most demanding needs for domestic areas. This product meets the requirements of the usage classes 31 for commercial use and 23 for domestic use according to ISO 10874 standard. Class 31 products are besides residential use also suitable for commercial areas with low or intermittent use"*

*".....laminate floor coverings are intended for domestic and commercial level of use and meet the requirements of EN 13329"*

*"...This document applies to the average of the laminate flooring in application class 31, 32 and 33 (AC3 through AC5) ... Application: Laminate flooring is used for interior applications in new construction or renovations, with floating installation on screed or other sub floors such as wood, tiles or PVC. Installation must be performed according to the installation instructions and state-of-the-art technology."*

#### **4.1.8 Table of comments and further research on other issues**

The information criteria wording the comments are on is as follows:

##### **Criterion 7.1 User information**

The product shall be sold with the relevant user information on the packaging and/or on documentation accompanying the product, which provides advice on the product's proper installation, use and maintenance and indications to minimize waste at the end of its lifespan. These instructions should be legible or include graphical representation or icons and include information on:

- a) Recommendations for the installation. This information should include all relevant instructions referring to the best environmental installation practices. As appropriate, reference should be made to the necessary preparation of the underlying surface and the auxiliary materials needed, for example, the plastic underlayers or the adhesives and glues that can be used for its installation. In the case where adhesives is to be applied to the complete surface, it must be possible to use an adhesive certified with a Type I Ecolabel or at least a low emission adhesive complying with EMICODE EC1 or equivalent,
- b) Recommendations for the use and maintenance of the product. This information should highlight all relevant instructions particularly referring to the maintenance and use of products. As appropriate, reference should be made to the features of the product's use under difficult conditions, for example, water absorption, stain resistance, resistance to chemicals, necessary preparation of the underlying surface, cleaning instructions and recommended types of cleaning agents and cleaning intervals. The information should also include any possible indication on the product's potential life expectancy in technical terms, either as an average or as a range value,
- d) An indication of the route of recycling or disposal (explanation in order to give the consumer information about the high possible performance of such a product);

##### **Assessment and verification:**

The applicant shall provide a sample of the packaging and/or texts enclosed.

**Criterion 7.2 Information appearing on the EU Ecolabel**

The logo should be visible and legible. The use of the EU Ecolabel is protected in primary EU law. The EU Ecolabel registration/licence number must appear on the product, it must be legible and clearly visible.

The optional label with text box shall contain the following text:

- Certified sustainable wood and wood-based materials,
- Limited hazardous substances used,
- Low-emitting product, emissions lower than 50%E1

**Assessment and verification:**

The applicant shall provide a sample of the packaging.

Details of the rationale and previous stakeholders' comments considered to redrafting the information criteria can be found in the TR2.0 and in the slides presented at the 2<sup>nd</sup> AHWG meeting. The comments received through BATIS on this and other issues are summarized in Table 23

**Table 23. Stakeholders feedback on packaging and information criteria**

	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
packaging	<p>The EEB and BEUC disagree with the withdrawal of a criterion related to packaging. Wooden Floor coverings are bulky products which therefore possibly come along with a huge amount of packaging.</p> <p>It is very incoherent to produce an eco-product and wrap it in a non-ecologic packaging. In addition, we believe finding more environmentally friendly packaging is possible without too much burden and costs for producers.</p> <p>The Blue Angel <u>sets a very relevant criterion for this product group: the products shall be packed for sale so as to allow post-manufacture outgassing of volatile elements.</u> We call for this criterion to be included into the EU Ecolabel criteria.</p>	<p><b>Rejected (acknowledged)</b></p> <p>Floorings are usually packaged grouping a certain number of slabs (around 10) with cardboard in covering 7 out of 8 sides of the package and being wrapped with a light plastic. Thus, although floor coverings could be considered bulky products they don't use huge amounts of packaging.</p> <p>Taking into account the above information and that the expected lifetime of this product group lasts between 15 and 50 years, it is clear that the environmental impact of the packaging is negligible and therefore there is no reason for an EU Ecolabel criterion.</p> <p>It is agreed that an environmental-friendly product should not be wrapped in a non-environmental friendly packaging. But due</p>

	<p>A criterion on packaging should be defined stating that packaging materials must be re-used or recycled.</p> <p>The environmental impact of flooring packaging is certainly not a significant one. Nevertheless it would be odd that the packaging of an EU Ecolabel product were not environment-friendly. Besides it would be very easy for applicants to comply with a packaging criterion</p>	<p>to the characteristics of the EU Ecolabel scheme, a packaging criterion will communicate the idea that taking care of the packaging is as relevant as reducing the energy consumption in the manufacture process from the environmental point of view, as both criteria have the same weight/importance in a pass/fail system. Setting a packing criterion easy to comply with would damage the reputation of the EU Ecolabel and its ambition.</p>
<b>User information</b>	<p>The licensee should inform customers:</p> <ul style="list-style-type: none"> <li>- that the covering on-site installation and its final on-site surface treatment, if any, should be made using EU Ecolabel products if available and, in any case, products which have low impact on the environment and the health.</li> <li>- about the percentage of wood, wood-based, bamboo or cork present in the product.</li> </ul> <p>In the case of laminated coverings the licensee should inform customers about the percentage of wood-based material the product is made of.</p>	<p><b>Accepted</b></p> <p>Both aspects pointed out in this feedback are of relevance for this product group. The amount of wood, cork, bamboo and plant-based material is important to communicate in order to avoid misleading information due to other communications that can be associated with pure wooden floorings.</p> <p>Information about the surface treatments needed in case of unfinished products and how the selection of these materials can help reducing the overall environmental impact of the floorings is worth communicating.</p>
<b>Information appearing on the EU Ecolabel</b>	<p>With the aim to clearly differentiate between wood and other materials, the label with text box has to be used containing the following text:</p> <ul style="list-style-type: none"> <li>- wooden or wood based or laminated or bamboo or cork unfinished or prefinished hard covering (specifying the relevant percentage of material),</li> <li>- certified sustainable wood or wood-based materials or .....</li> <li>- limited hazardous substances used</li> <li>- produced with energy savings processes</li> </ul>	<p><b>Partially accepted</b></p> <p>We acknowledge the relevance of the points listed in this feedback but we should keep in mind that the room devoted to the information appearing on the EU Ecolabel is limited, therefore we considered that more than three points (as suggested in the EU Ecolabel manual) should not be included.</p> <p>The percentage of wood, cork, bamboo and plant-based materials are already included in the consumer information and may be this point can be dropped out form this list or maybe be integrated in the introduction of the list.</p>
<b>others</b>	<p>Appendix 1: For the sake of clarity, the difference between "efficiency" and "efficacy" if any should be stated.</p>	<p><b>Accepted</b></p> <p>Appendix 1 will be revised in this way</p>

	<p>Requirement of environmental product declaration to all the EU ecolabel products (EPD)</p>	<p><b>Acknowledged</b></p> <p>Environmental product declaration (EPD) is a useful tool to communicate the environmental performance of a product in a standardized way. this tool allows the comparisons among the products and could be potentially used as proof of compliance with several proposed EU Ecolabel criteria.</p> <p>However, there are several aspects that prevent their use as only way of compliance:</p> <p>a) it is not mandatory for floorings and therefore there are products which environmental performance could be so good as other but that they are lacking the EPD</p> <p>b) not all types of floorings have product category rules that guides the process to produce the EPD</p> <p>c) the information reported does not completely match the requirements of the criterion, and although calculations can be performed based on the data, it is not straight forward.</p>
<p><b>Comments during the June 2016 EUEB meeting</b></p>		
	<p>some substances, which are well known by consumers, could be added as follow : "Low emitting product (ex : formaldehyde).</p>	



## 4.2 Table of comments from the TR3.0 (January 2016) to the TR3.0

**Table 24. Table of comments on the criteria wording**

Criteria	Stakeholder's feedback	Decision taken and IPTS analysis and further research
	<p><i>Wood, cork, bamboo, wood based, cork based, bamboo based and laminates floorings are products completely different</i> from each other's. In fact the relevant producer organizations involved are different: e. g. in Italy <i>Federlego Arredo</i> represents wood flooring producers whereas <i>Federazione Gomma Plastica</i> represents laminated flooring producers.</p>	<p><b>Rejected</b>            According to Regulation 66/2010 a '<b>product group</b>' means a set of products that serve similar purposes and are similar in terms of use, or have similar functional properties, and are similar in terms of consumer perception;            All mentioned products have:            - similar purposes as they serve as floor covering            - similar terms of use as they are fulfilling the same purpose            - and until certain extend similar functional properties. Solid wood flooring is closer to laminate flooring or cork flooring than to hard flooring, because of for example, the heat transmission coefficients, density, ways of cleaning and maintaining, etc</p>
	<p>In the current proposal most of the criteria appear based on the wood flooring life cycle analysis. Criteria referring to other types of floorings don't appear based on a thorough assessment of the relevant life cycles. This entails that non wooden floorings take an advantage from this situation (the respect of criteria would be more easy for them as in the case of VOCs) which would impair the market.</p>	<p><b>Rejected</b>            The revision of the EU Ecolabel criteria is based on LCA studies of all the products included in this product group. All the studies revised are explained in detail in the preliminary report that is available at the official website. The studies revised focus on parquet (several types, laminates, cork floor coverings and bamboo floor coverings)            Additionally, and as it is explicitly mentioned, we confirm that the criteria dealing with the VOC emissions was too tough for the wood floorings and has been divided into two groups: a threshold for wood flooring materials and another for laminates, cork and bamboo floor coverings.</p>

	<p>Given the above while criteria on wood and wood based floorings appear to be quite complete, criteria referring to other kind of floorings in the scope should be carefully assessed to verify if they take into account the real life cycle of the products.</p>	<p><b>Acknowledge</b></p> <p>The intention of the revision was to provide a complete set of criteria for all the products included in this product group. For the best of our knowledge there are no aspects that are covered for wood floorings and not covered for other kind of floorings.</p> <p>However, if the stakeholders are able to identify such as deficiencies, we would appreciate to be informed.</p>
	<p>Moreover the current version of the draft Decision doesn't prevent consumers from thinking that products very different from each other with reference to performances, features as well as prices such as e. g. wood flooring and laminates awarded with the "same" EU Ecolabel are equivalent. This is the reason the Italian wood flooring producers Association has declared not to be interested in EU Ecolabel.</p>	<p><b>Rejected</b></p> <p>The purpose of the EU Ecolabel is to identify, label and inform consumers about the top best environmental performing products on the EU market. The role of the EU Ecolabel is not to inform consumers about the differences between the different products that fall under the same product group.</p> <p>There are multiple examples where different products are grouped in a single product group and for which only a set of criteria and a single label has been developed (eg All-purpose cleaners and sanitary cleaners).</p>

	<p>In conclusion the IT CB agrees with the proposal to keep in the scope of the revised EU Ecolabel criteria all the proposed products (<i>wood, cork, bamboo, wood based, cork based, bamboo based and laminates floorings</i>) if:</p> <ul style="list-style-type: none"> <li>- a clear and precise definition of each product is done, preferably based on the definitions in European standards, so that any confusion among all these different products is definitely avoided;</li> <li>-specific criteria for each kind of these products are defined, next to some common criteria.</li> </ul>	<p><b>Accepted</b></p> <p>An effort to make clearer the definitions has been made. The definitions provided in European standards have been used for wood flooring, laminate floorings and cork tile floorings.</p> <p>For the best of our knowledge, there are no international standards defining cork flooring and bamboo floorings. Should stakeholders have this information, we would appreciate to be informed.</p> <p>Several criteria such as: VOC emissions from floorings, energy consumption during manufacturing, fitness for use, consumer information and information appearing on the EU Ecolabel have been drafted including different thresholds that relate to different type of products. Others are common criteria for all them.</p>
	<p>As a conclusion the Italian CB strongly suggests that specific criteria referred to each of the products in the scope be added to the draft Decision with the aim to avoid to treat in the same way products that sensibly differ, and that criteria referred to each group of products be clearly separated from the others to avoid any mistake or confusion by consumers with all the negative consequences that the foregoing entails.</p>	<p><b>Partially accepted</b></p> <p>The structure of listing the criteria and for each criterion specifying different standards or thresholds for different product types if appropriate is the normal procedure and the one that should be applied in this EU Ecolabel.</p> <p>However, we consider that keeping the same order of products in all the criteria that hold different thresholds for different product groups can bring clarity to the wording.</p>

	<p><u>Sustainability of the origin is taken into account only for natural materials (current criterion N.1) not for the other materials.</u></p> <p>This difference doesn't appear justified in the light of the EC Regulation 66/2010 art 6 that states that EU Ecolabel criteria shall be determined on a scientific basis considering the whole life cycle of products. Where it is not possible to avoid the use of non-renewable raw materials this must be counterbalanced by a high level of recycled material content and an eco-design that facilitates re-fit operations with the aim to reduce the use of non-renewable raw materials.</p> <p>The above mentioned difference between different materials in the current proposal leads to the consequence of penalizing floorings that use renewable materials while favoring those that use non-renewable materials!</p>	<p><b>Rejected – acknowledged</b></p> <p>As commented by the stakeholder, assessing the sustainability of the materials is not possible when the materials do not have a renewable nature, therefore this characteristic cannot be required.</p> <p>Those non-renewable materials are however covered by others criteria CR3 and CR4 that do not apply to the materials of renewable sources. Therefore, as the comment suggested a balance is achieved drafting specific criteria depending on the nature of the materials.</p> <p>In accordance with this approach, no penalization is set for any material, but only specific requirements tailored to the characteristics of the materials</p>
<p><b>Preamble Assessment and verification</b></p>	<p>Many of the introduced changes are not only editorial. Even minor changes can have a high impact on the verification process. We have identified some critical points but given the very limited time to read the draft it is very likely that other critical issues are not discovered and will open up for discussions or even needed amendments after adoption of the criteria. Denmark therefore reserves the option to make additional comments.</p>	<p><b>Acknowledge</b></p> <p>IPTS appreciate the close look at the criteria draft done by the stakeholders. After several weeks, IPTS send a request for further comments that for the time of writing has not been replied. We understand that no additional comments are intended to be sent.</p>
	<p><u>General comment</u> "And/or" should be avoided. The text shall be clear and introducing such term gives room for interpretation. It is confusing and not needed.</p>	<p><b>Accepted</b></p>
	<p><i>"Changes in suppliers.....continued compliance..."</i> By introducing this paragraph, a description of the internal procedure for approval of new materials, unconformities and journal keeping at the production site is needed. This is new to the EU Ecolabel but is standard in the Nordic Ecolabel. We welcome such change but this has never been discussed! This discussion is relevant for all CBs.</p>	<p><b>Accepted</b></p>
	<p>To be introduced: <i>"Changes in suppliers and production sites pertaining to licensed products shall be notified to Competent Bodies, together with supporting information to enable verification of continued compliance with the criteria."</i>,</p>	<p><b>Rejected</b> See above</p>

	<p>"As a pre-requisite, the product must meet all respective legal requirements of the country (countries) in which the product is intended to be placed on the market. The applicant shall declare the product's compliance with this requirement.",</p>	<b>Accepted</b>
	<p>"In exceptional cases..." Shall be erased. This is not relevant. If requirements states that information on substances level shall be given not having this information will – and should – not be accepted by CB's.</p>	<b>Accepted</b>
<b>Name scope and definitions</b>	<p>"Wood, wood-based, cork, cork-based, bamboo and bamboo-based floor coverings" doesn't correspond to the scope described in Art. 1 that includes laminated floorings and plant-based materials.</p>	<p><b>Accepted</b></p> <p>The term plant-based material has been removed from the list of possible materials in the scope. The new list of materials is as follows: "from wood, wood-based, cork, cork-based, bamboo, and/or bamboo-based materials or fibres".</p>
	<p>In the article 4 the product group "wood, wood-based, cork, bamboo and plant-based floor coverings" is different than the title at page 2 "wood, wood-based, cork, cork based, bamboo, bamboo-based floor coverings".</p> <p>For example in criterion 1: "wood, wood-based, cork, cork based, bamboo, bamboo-based ..." and then in criterion 3e) "wood, wood-based, cork, bamboo or plant-based ..."</p>	<p>Additionally, the lists of materials that should comply with the criteria 1 and 3 have been revised. In both cases plant-based materials has been removed</p>
	<p>We propose to change the title in "Wood-, cork- and bamboo-based floor coverings"</p>	<b>Accepted</b>
	<p>In criterion 6 table 6.2 emission requirements form "wooden floor coverings"</p> <p>In criterion 4 "wood flooring (one single solid layer), multi-layer wood floorings, bamboo and cork floor coverings..." and then in the description of the conditions for the calculations it is written "solid wood flooring": it means "wood flooring (one single solid layer)"?</p>	<p><b>Accepted</b></p> <p>A thorough revision of the names was carried out.</p> <p>Criterion 6 table 6.2 relates to both solid and multilayer wood floorings</p> <p>Criterion 4 E&lt;11 relates to solid wood flooring and E&lt;8 relates to multilayer wood floorings.</p>
<b>Preamble definitions</b>	<p>A univocal and unambiguous definition of "final product" is missing. Such a definition would be useful e. g. to define at what time the product has to be tested to measure VOCs.</p>	<p><b>Accepted</b></p> <p>The term has been introduced in the art 2 as follows: 21. "Final product" means the ultimate result of a series of changes, processes and operations leading to an end product that is ready to be installed in the end users place or facilities.</p>

	<p>In criterion 7 the types are: Cork tile, Cork flooring, Bamboo, multilayer floor coverings, Factory lacquer wood flooring: it is "wood flooring (one single solid layer)"? There isn't "veneer floor coverings".</p>	<p><b>Accepted</b> The criterion has been rewording and a list of floorings has been included. The floor coverings include: wood veneer floor coverings, solid and multilayer wood floorings (factory finished and unfinished), cork tile floor covering. cork floor coverings, bamboo floor coverings (both solid board and multilayer) and laminate floorings</p>
<p><b>Preamble definitions</b> <b>(on the version released on 25.01.2016)</b></p>	<p>8. "impurity": This is a strange sentence. Proposal to change "... <i>that have been added to a raw material or the product actively and ...</i>" in "... <i>substances that have been actively added to a raw material or in the manufacturing process for a particular....</i>"</p>	<p><b>Partially accepted</b> Definition has been changed in line with the regulation included in REACH with additionally explanations</p>
	<p>17: the list is not exhaustive. Proposal to change in: "<i>means all polymer fibres such as but not limited to acrylic....</i>"</p>	<p><b>Accepted</b></p>
	<p>20: Proposal to change "<i>guarantee of origin</i>" in "Guarantee of origin of renewable energy".</p>	<p><b>Accepted</b></p>
	<p>20: second line: delete "<i>to a final customer</i>".</p>	<p><b>Rejected</b> The definition is literally copied from the directive. No changes should be done</p>
	<p><u>Article 2.</u> The definition of wood flooring shall be changed: "<i>Unfinished wood flooring, once installed, is sanded and then finished on site</i>". The intention must be to include floor covering of <u>raw untreated wood (which is often used in the Nordic countries)</u> – also if the wood is not treated at all. The definition must be changed or the article 1 shall be on clear include raw wood.</p>	<p><b>Accepted</b> Wording has been changed explaining the unfinished floor coverings can be treated or not treated after installation</p>

<p><b>Preamble definitions</b> (on the version released on 25.01.2016)</p>	<p>The EEB and BEUC would prefer to set the minimum content of wood at 90% to limit substances with harmful effects to human health and that undermine recycling. Given that 80% is a common reference for wood in laminates, NGOs could accept this lower limit as a compromise provided that:</p> <ul style="list-style-type: none"> <li>- This threshold is not further lowered as suggested during the second AHWG meeting.</li> <li>- Hazardous substances are strictly limited, including halogen organic compounds.</li> <li>- Resilient flooring or vinyl floorings are explicitly excluded from the scope.</li> </ul> <p>It is crucial to avoid any hazardous substances that undermine recycling processes and remain in the recycled material affecting consumers' health during the second life of the material. The EU Ecolabel can contribute to a non-toxic environment and to a more sustainable and circular economy by increasing the recycling potential of the products through better design.</p>	<p><b>Acknowledge / Partially accepted</b></p> <p>The requirement of explicit exclusion from the scope of resilient floorings or vinyl floorings is not considered as appropriate because this type of floorings does not comply with:</p> <ul style="list-style-type: none"> <li>- the minimum wood, cork, bamboo-based materials</li> <li>- the classification to be into one of the four products that this product group consists of: wood flooring, cork floor covering, bamboo floorings or laminate floorings</li> </ul>
	<p><i>"[...] Synthetic fibres are not permitted in any of the composing layers".</i> It should be clearly stated that resilient floorings or vinyl floorings are not permitted in any of the composing layers, Add: "Neither resilient floorings".</p>	<p><b>Accepted</b></p>
	<p><i>"It also refers to composite materials made from wood-based panels coated by plastics, or laminated plastics, or other coating materials and finished/semi-finished wood-based panels".</i> This provision is not necessary if the intention is to englobe laminates. The clause opens the option to include hybrid vinyl coating, which cannot be in the category of wood based floor. It is not acceptable to include plastic based floorings within the definition of wood-based materials, since they are another group of products, have different qualities and it can be misleading for consumers. Delete or change to: "wood-based materials" are commonly covered by an over layer as a finishing varnish in the manufacturing process of laminates.</p>	<p><b>Accepted</b></p>

<b>Preamble definitions</b>	<p>VOC – “means ‘any compound having.....”.</p> <p>I suggest to use the definition of VOC of EN 16516 – “organic compound eluting between and including n-hexane and n-hexadecane on the gas chromatographic column as specified in 8.2.2”</p>	<p><b>Accepted</b></p> <p>The following definition has been included</p> <p><i>"Volatile organic compound" (VOC) means all volatile organic compounds eluting between and including n-hexane and n-hexadecane on a gas chromatographic column as specified in 8.2.2 of the FprCEN/TS 16516:2013. Notes: The measurement is carried out using a capillary column coated with 5 % phenyl/95 % methyl-polysiloxane. This definition corresponds to volatile organic compounds with a boiling point in the range of approximately 68 °C to 287 °C.</i></p> <p><i>"Total VOC" means the sum of the concentrations of the identified and unidentified volatile organic compounds"</i></p> <p>The criteria text has been changed accordingly.</p>
	<p><i>"Manufacturer: means any natural or legal person established within the Community who manufactures a substance within the Community".</i></p> <p>What about non-European manufacturers??</p>	<p><b>Rejected</b></p> <p>The definition has been deleted but it should be understood as follows, being in line with the definition provided in REACH:</p> <p><i>"Manufacturer" means any natural or legal person established within or without the Community who manufactures a substance intended to be put within the Community market</i></p>
	<p><i>"brand/trade name" and further the footnotes seem to be missing or at least I could not find them</i></p>	<p><b>Accepted</b></p> <p>The following footnote has been added <i>"Trade name means all names under which the substance is marketed within the Community market"</i>.</p>
<b>Criterion 1 Product definition</b>	<p>A new criterion n. 1 should be added including a complete description of the products in the scope. Moreover the following lines should be moved to the <i>"Assessment and Verification"</i> section of this criterion from the <i>"Assessment and Verification requirements"</i> paragraph:</p> <p><i>"The following information ....."</i></p>	<p><b>Accepted</b></p> <p>The criterion "Product description" has been included</p>



	<p><i>"The following information....."</i></p> <p>This information is very similar to criterion 1. But not quite. It seems that the intention is that applicants shall provide product recipes for all chemical products and SDS 's for all substances. This is a heavy burden to both applicants and to CB's to verify – and is not needed for all products in order to show compliance, hence the information is not needed.</p>	<p><b>Accepted</b></p>
<p><b>Criterion 2 Wood, cork and bamboo based materials</b></p>	<p><i>"Uncertified material shall be covered by a verification system which ensures that it is legally sourced and meets any other requirement of the certification scheme with respect to uncertified material."</i></p> <p>This is contradictory. Uncertified material can't be certified. Uncertified material shall be assessed according to a due diligence systematic of other third-party- verified schemes which cover compliance with applicable legislation.</p> <p>Verified but uncertified material that meets the requirements or such a due diligence system for which the organization can provide evidence of compliance to that system.</p>	<p><b>Rejected</b></p> <p>Uncertified material can be covered and should be covered by the certification scheme to comply with the criterion. the term "uncertified materials" is the controlled material that even if the not coming from sustainable managed forest or areas fulfil several requirements the certification schemes set for this type of material.</p> <p>The name "uncertified material" can be misleading for non-familiar readers, therefore a clarification will be included in the user manual</p>
	<p><i>"Wood-based materials comprise: hardboard, fibreboard, medium density fibreboard..."</i></p> <p><i>"..... medium and high density fibreboard..."</i></p>	<p><b>Accepted</b></p> <p>The inclusion of the medium and high density fibreboard has been introduced but the definition has been moved to the pre-amble</p>
	<p>Add new paragraph between para 3 and 4.</p> <p><i>"If the applicant is certified against more than one certification scheme, e.g. FSC and PEFC, certified material of these can be mixed in the product or production line. (even if the certification scheme rules do not allow this)"</i></p>	<p><b>Rejected</b></p> <p>The wording of the criteria was fixed by consensus achieved in the EU Ecolabel meeting. This fact leads little room for modifications as suggested.</p> <p>The comment is however of relevance for the compliance and the verification of the criterion, therefore a comment on this point will be included in the User Manual.</p>

	<p><i>"All wood.... shall be covered by chain of custody certificates":</i>  This means that the producer of the finished product must be CoC certified otherwise the wood will not be covered by any CoC certificate, the chain is broken before the producer and there will be no guaranties for where the wood in the finished product comes from. Neither FSC nor PEFC takes any responsibility for wood after a broken chain.  <u>So the question 1 is: Is it required that the producer of the finished product is CoC certified or not?</u> This is not clear because you have written as a verification CoC certificates and not explicit the producers CoC certificate.</p>	<p><b>Accepted</b></p> <p>The wording of the criterion has been modified in the A&amp;V part to require for the CoC of the producer/manufacturer or applicant. This requirement will ensure that at least until the point of application for the EU Ecolabel, the wood, cork or bamboo based materials will be covered and tracked by the certification scheme.</p>
	<p>In the minutes of the second working group meeting I could read the following:  <i>"Concerning the chain of custody, it was explained that all players involved should be awarded with the chain of custody (from the forest to the shop). It was insisted that a whole chain of custody is needed to ensure the validity of the certificates. This is also needed to ensure the traceability of the material, being this aspect one of the main advantages of relying on a robust scheme such PEFC or FSC. If valid certificates are assumed, the percentage from sustainable managed forest will be never lower than 70%."</i>  From this you get the impression that CoC certificate is a guarantee that there is 70% certified wood always in the product, but this is completely wrong. It is only true when you label the product with PEFC.</p>	

	<p><i>"...a minimum of 70% of the wood, cork and/or bamboo shall be sustainable certified virgin materials and/or recycled material" But in the verification part there is only a request that "... demonstrate that at least 70% of the materials originates from forests and/or areas managed according to Sustainable Forestry Management principles...." nothing is said how it should be demonstrated.</i></p> <p>A valid CoC certificate shows only that the wood can be traced not that it comes from forests that are certified according to a FM standard. CoC certificate only tells you that the wood is at least 100% Controlled wood (FSC scheme).</p> <p><i><u>Question 2:</u> How do you demonstrate that there is 70% wood originating from a FM certified forest if you are not using the book keeping system of the CoC scheme? Or requiring that the product is double labelled by both EU Ecolabel and FSC/PEFC?</i></p>	<p><b>Accepted</b></p> <p>The wording of the criterion has been modified in the A&amp;V part to require for accounted balance sheets that demonstrate that at least 70% of the materials are certified or recycled.</p> <p>Additionally explanations and examples have been included in the User Manual.</p>
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	<p>The final question is now: Once again, what do you mean with this criterion, which level listed below is required, I don't understand?</p> <p>a) The finished product should be double labelled with both EU Ecolabel and FSC/PEFC? Then the wording may be ok.</p> <p>b) If the product shall not be double labelled but the producer of the finished product must be CoC certified, it is not clear how it should be verified that there is 70% certified fibers in the product. It should be done as we have agreed to do for C&amp;G paper which means that the certified wood used in the ecolabel product should be deducted from the CoC balance sheet.</p> <p>c) Do you actually mean that the producer does not need to be CoC certified itself but it is required that the producer purchases wood from a CoC certified supplier. In this case the verification must be an invoice with a claim of the amount certified wood that is deducted from the suppliers CoC account. In this case the producer should also have an own traceability system for the wood covered by the invoices to know that the certified wood actually ends up in the ecolabelled products. However, it cannot be claimed that the wood in the finished product is covered with a CoC certificate in this case. It should be written that wood purchased (or something like that) must be covered....</p> <p>As the criterion is written now it will not do any good, the risk is that it just creates green wash because it does not guarantee that there is any certified wood assigned to the EU Ecolabelled product.</p>	<p><b>Accepted</b></p> <p>The user manual collects several examples on how this criterion can be fulfilled. Among the examples collected and explained there, the following cases are included:</p> <p>a) double label: this is the easiest and straightforward way of verifying the compliance with CR2. Those products that show a FSC or PEFC label automatically comply with requirements of CR2</p> <p>b) CoC of the producer from FSC or PEFC and accounted balance sheets</p> <p>c) CoC of the producer from another scheme, approved to be equivalent and the accounted balance sheets.</p>
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<p><b>Criterion 2 Wood, cork and bamboo based materials  (comments received as a reply to other comments posted in BATIS)</b></p>	<p>Do not understand the comment. <u>The Ecolabel requirement does not focus on the company being certified, but the materials used for the products.</u> A company proves that with invoices and, if it meets the requirements for the labels, a label on the final product.</p> <p>XXX seems to think that using certified materials is an administrative issue only, but in <u>reality there are requirements to physically separate certified materials from non-certified, and the same goes for controlled wood.</u> So furniture that is claimed to be FSC Mix, has indeed, on average, at least 70% FSC certified and/or post-consumer reclaimed material in it, with the rest being FSC controlled wood and/or pre-consumer reclaimed material. The system does not allow for mixing with any other wood. And, indeed, it is an average, but the motive for insisting on SFM/controlled/recycled wood is to support SFM. Unlike with chemicals it is not very important that every individual piece has exactly the same composition, as the quality of the wood itself is not necessarily different when being certified or controlled.</p> <p>The Certification Bodies is auditing companies on, at least, annual basis whether it is cheating or not. <u>It controls whether the separate storage and processing is applied, that no more claims are made than certified and controlled materials bought, that it is also validating the "reclaimed" claims.</u></p> <p>A competent body is of course free to redo such auditing, but it is already allowed to do so because of the sentence in the opening part of the draft criteria, saying: <i>"Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications"</i></p>	<p><b>Acknowledge</b></p>
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<b>Criterion 2 Wood, cork and bamboo based materials (received on draft criteria 25.01.2016)</b>	<p>In my amendments I have taken the final version of the furniture and footwear formulations as starting point (sent 22<sup>nd</sup> January 2016). I think it is important you keep as much as possible the same formulations.</p>	<p><b>Accepted</b></p>
	<p><u>As long as certification schemes ban GMOs from certified and controlled sources, it creates unnecessary additional burdens for an applicant to provide specific evidence that GMOs are not used.</u> A specific GMO-free requirements becomes relevant only when a scheme does NOT include that (anymore) in its scheme. The final changes in the furniture and footwear formulation on assessment and verification make sure that it is required only in that case.</p>	<p><b>Accepted/acknowledge</b></p>
	<p>Different from the furniture and footwear formulation, I propose to put the crucial sentence at the very end, and not before the paragraph on controlled sources. Because in that case it is clear that the GMO requirement also includes the 30% component</p>	<p><b>Accepted/acknowledge</b></p>
	<p>As regards the new element of "<u>audited accounting documents</u>": we object to that, because in this way the competent authority has to redo the work of the certification bodies that are accredited for auditing certified companies. With the current rules, companies that are applying for the Ecolabel will have to have a certificate from a certification scheme and can claim compliance with this criterion only for those products that indeed fulfil the mixing requirements of the criterion. They can even, if they want, use the FSC/PEFC logos on their products, which is visual evidence of compliance. They can "demonstrate" compliance with these claims and the reports of certification bodies.</p>	<p><b>Rejected / acknowledge</b></p> <p>As commented before the use of FSC or PEFC is a way to comply with this criterion, but the criteria wording allows for complying with the criteria requirements by certifying the materials through other schemes. Therefore the demonstration of the thresholds should be done by audited accounting documents. It is important to keep this requirement in the assessment and verification part.</p>

<p><b>Criterion 2 Wood, cork and bamboo based materials (on draft criteria released on 25.01.2016)</b></p>	<p>As PEFC we strongly disagree with the proposed extra verification/assessment requirement highlighted below in the point 2. second paragraph of the Legal text: <i>"The applicant shall provide audited accounting documents that demonstrate that at least 70% of the materials originate from forests or areas managed according to Sustainable Forestry Management principles"</i></p> <p>This requirement is precisely what the Chain of Custody certification verifies and therefore it constitutes, in our opinion, an extra unnecessary burden for the companies which are already committed to responsible sourcing with PEFC. In addition we would like to point out that PEFC is a third party certification system using accreditation and conformity assessment in line with the EU Regulations which constitutes a far higher standard of verification than the self-declaration used for many other criteria. In a time where the EU Ecolabel Board wishes to work on the uptake of the Ecolabels we think that it would make sense to start by rewarding the companies already using voluntary third party verification for wood and not penalise them.</p>	
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<p><b>Criterion 2 Wood, cork and bamboo based materials (on draft criteria released on 25.01.2016)</b></p>	<p>The requirement (criteria wording) is very generally worded which can, therefore, give rise to different interpretations. However, it can work if the assessment and verification part is worded clearly.</p> <p><u>The starting point for both FSC and PEFC is that the EU Ecolabelled products should be double labelled with either FSC or PEFC stamps.</u> However, I don't think that that would promote EU Ecolabel and it would put the FSC and PEFC in control on which products would get EU Ecolabel. Nevertheless if the product is FSC or PEFC labelled then the picture of the packaging with the stamp should be an adequate documentation for the fulfilment of the criteria.</p> <p><u>However, if the product is not labelled with FC/PEFC then you need to see the balance sheet to be able to check the amount of certified wood assigned to the ecolabelled product.</u> In this case an adequate documentation is the copy of the CoC of the manufacturer together with the audited accounting documents (=audited balance sheet). Then no invoices or other documents are needed for the assessment work. Of course there will be additional work to audit the amounts of certified wood deducted from the FSC/PEFC account for the EU Ecolabel but this could be arranged by the company's internal audits.</p> <p>Therefore the text should be as follows (or the wording in the last draft):</p> <p><i>The applicant or material supplier, as appropriate, shall provide a declaration of compliance supported by valid, independently certified chain of custody certificate(s) of the manufacturer for all wood, wood-based cork, cork-based, bamboo, bamboo-based material used in the product or production line and demonstrate with audited accounting documents that.....</i></p> <p>This wording would also be in line with the text in the UM. Then I'm wondering how the absence of GMO will be documented if PEFC or FSC doesn't check that?</p>	<p><b>Accepted</b></p>
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	It is not clear how to demonstrate that no virgin material is sourced from GMO species. Our proposal is to maintain assessment and verification of current criteria: <i>the applicant shall provide declaration that no GMO species (wood) has been used</i>	<b>Rejected</b> For the time being the compliance with the requirements of the certification scheme ensures the no use of GMO material. The verification is done throughout the schemes. No further documentation is needed.
	It is not clear what means "audited accounting documents that demonstrate that at least 70% of the materials originate from forests or areas managed according to Sustainable Forestry Management principles and/or from recycled sources that meet the requirements set out by the relevant independent chain of custody scheme". What are "audited accounting documents"? Are the documents examined by an independent third party certification body during an FSC /PEFC audit? Which documents the applicant shall provide?	<b>Accepted</b> There are several methods for treating the certified, controlled and non-controlled materials. the audited accounting documents is the tool used to check and track the how much material of each type comes in and out of the manufacturer production. This doc is not needed is the manufacturer follows a physical separation of the materials. See further information in the user manual
<b>Criterion 3.1</b>	replace "dyestuff" by "dyes"	<b>Accepted</b>

<p><b>Criterion 3.2</b></p>	<p><i>Restriction of CLP classified substances or mixtures used in the floor covering:</i> bearing in mind that the criterion refers to the entire manufacturing phase and not only to the final product, the second indent should be deleted to correctly take into account the environmental impacts in this manufacturing phase.</p>	<p><b>Rejected</b></p> <p>The requirements of the criterion certainly refer to the final product. However, due to the large number of substances and mixtures that can hold a classification, a method to reduce the number of substance to be checked should be proposed. This is achieved by investigating what is happening in the production process.</p> <p>The method starts from the raw materials. If any of these materials is classified, then it is a potential source of classified substance in the final product. The raw material classified with a CLP phrases should be investigated to know which transformations undergoes in the manufacturing process and if it keeps the properties to be classified with the H phrases. This should be tested against the two conditions included in the criterion</p> <p>However, it seems that further explanations about how to understand and checked the product are needed. These are going to be included in the user manual</p>
<p><b>Criterion 3.2 (on the draft released on 25.01.2016)</b></p>	<p>Denmark would like to have more focus on the chemical products used. We suggest adopting the requirement from Nordic Ecolabel (<a href="#">floor coverings</a>). These requirements will be in addition to the section on general hazardous substance requirement.</p> <p>All substances in the Swan criteria are important, and this comment was also delivered during criteria development of furniture criteria, however, with regards to floor covering, extra focus should be on the air-sensitising substance MI, methyl-isothiazolinone, as we have to do with a large area treated with paint or varnish (parallel to a wall or roof paint) where the MI will evaporate from.</p> <p>This makes it relevant to introduce this MI criterion for the treatment of a wooden floor surface, and can be considered as a simple harmonisation of the criteria with paint and varnish criteria. Moreover, wooden floor when surface treated is most often wrapped into plastic or other moisture resistant packaging at the production site and first removed just before installation, and first at this point will evaporable substances begin to be emitted from the surface treatment.</p>	<p><b>Accepted</b></p> <p>The use of isothiazolinone has been restricted and included in criterion 4. It is considered that this type of bans or restriction on specific substances should be proposed not in criterion 3 that deals with the general restrictions but in criterion 4 because it is a specific restriction.</p> <p>Accepted the use of azidine and polyizidine has been ban in in criterion 4 due to the same reasons as above.</p> <p>The restriction on APEO in the Nordic Labelling scheme is not relevant for this product group and therefore it is not included. The APEO is used in textile floorings that are not covered by this scheme.</p> <p>All other listed substances were already in the proposed criteria</p>

**Criterion 3.2  
(on the draft  
released on  
25.01.2016)**

**O21 Isothiazolinones**

The following preservatives are excluded from use in chemical products:

- Isothiazolinones at more than 500 ppm
- A blend (3:1) of CMIT/MIT (Chloromethylisothiazolinone CAS no. 26172-55-4 and Methylisothiazolinone CAS no. 2682-20-4) at more than 15 ppm
- Methylisothiazolinone at more than 200 ppm

Calculation clearly showing that the requirement concerning isothiazolinones is fulfilled.

**O22 Other substances excluded from use**

The following substances are not permitted as additives in materials or in the chemical products used in the manufacture of Nordic Ecolabelled floor coverings:

- Substances on the Candidate List\*.
- Persistent, bioaccumulative and toxic (PBT) organic substances\*\*.
- Very persistent and very bioaccumulative (vPvB) organic substances\*\*.
- Substances considered to be potential endocrine disruptors in category 1 or 2 on the EU's priority list of substances that are to be investigated further for endocrine disruptive effects. See following link:  
[http://ec.europa.eu/environment/chemicals/endocrine/pdf/final\\_report\\_2007.pdf](http://ec.europa.eu/environment/chemicals/endocrine/pdf/final_report_2007.pdf)  
(Annex L, page 238 onwards)
- APEO – alkylphenol ethoxylates and other alkylphenol derivatives (substances that release alkylphenols on degradation).
- Halogenated organic substances, for example organic chloroparaffins, fluorine compounds and halogenated fire retardants \*\*\*
- Phthalates
- Aziridine and polyaziridines
- Pigments and additives based on lead, tin, cadmium, chromium VI and mercury, or compounds of these. There is an exemption for chromium for dyeing textile fibres, see O27.
- Volatile organic compounds at more than 1% by weight

<p><b>Criterion 3.2</b></p>	<p>The EEB and BEUC strongly urge the JRC to delete criterion 3.b which introduces loopholes that seriously undermine the aim of criterion 3. The objective of criterion 3 is to limit hazardous substances in the final product and in its component parts, but this is compromised through the provisions set in 3.b.</p> <p>Subcriterion 3.b allows the use of restricted substances if they are used in quantities that amount to less than 0.1% in the total weight of the floor covering. Such possibility is contradictory with the restriction of hazardous substances above 0.1% in the final product and in its layer of the covering (see amendments in yellow in first paragraph of criterion 3 and 3.a).</p>	<p><b>Accepted</b></p>
<p><b>Criterion 3.2</b> <b>(on the draft released on 25.01.2016)</b></p>	<p>Subcriterion 3.b permits the intentional use of hazardous substances when they are in concentrations below 0.1%. This is unacceptable; it goes against the objectives of the EU Ecolabel Regulation and the outcome of the horizontal task force on chemicals. It cannot be possible to allow the intentional use of, for example, carcinogenic substances when they are below 0.1%. Pragmatically, it was accepted to refer to the 0.1% threshold for the restriction of hazardous substances, because this is the reference used through REACH. Manufacturers must communicate if SVHC are above 0.1% in articles or components. However, the primary objective is to avoid their use if there are substitutes available. The intentional use of hazardous substances must not be allowed at concentrations below 0.1%, unless specific derogations are introduced when there are no alternatives.</p>	<p><b>Acknowledge</b></p> <p>The point commented of hazardous substances intentionally added is difficult to demonstrate. The no addition of hazardous substances above the threshold (intentionally or nor) is the goal of this criterion</p>
<p><b>Criterion 3.2</b> <b>(on the draft released on 25.01.2016)</b></p>	<p>It is not correct the sentence: "<i>The applicant shall compile declarations of the absence of SVHCs at or above the specified concentration limit</i>". Because the criterion is: The product and any component parts thereof shall not contain SVHC, at concentrations greater than 0.10% (weight by weight), it is not: greater than or equal to 0.10%. Our proposal is: "The applicant shall compile declarations of the absence of SVHCs above the specified concentration limit".</p>	<p><b>Accepted</b></p>

	<p>Could you confirm that the criteria limit the use of the following substances thanks to the risk phrases of the table 3.1? : See compounds in the table</p>	<p>This is the information found In ECHA, these substances cannot be in the product at a concentration higher than 0.01%wt of the component part they take part in because of the following classification (among other classifications they hold .....):</p> <table border="1"> <tr> <td>Toluene<sup>48</sup></td> <td>H304 and being CM</td> </tr> <tr> <td>tetrachloroethylene<sup>49</sup></td> <td>H411 and H351</td> </tr> <tr> <td>1,4 dichlorobenzene<sup>50</sup></td> <td>H410, H400 and H351</td> </tr> <tr> <td>ethylbenzene<sup>51</sup></td> <td>H304</td> </tr> <tr> <td>xylenes<sup>52</sup></td> <td>H304</td> </tr> <tr> <td>styrene<sup>53</sup></td> <td>H372</td> </tr> <tr> <td>acetaldehyde<sup>54</sup></td> <td>H352</td> </tr> <tr> <td>1,2,4 trimethylbenzene<sup>55</sup></td> <td>H411</td> </tr> <tr> <td>2 butoxyethanol</td> <td>Not relevant</td> </tr> </table>	Toluene <sup>48</sup>	H304 and being CM	tetrachloroethylene <sup>49</sup>	H411 and H351	1,4 dichlorobenzene <sup>50</sup>	H410, H400 and H351	ethylbenzene <sup>51</sup>	H304	xylenes <sup>52</sup>	H304	styrene <sup>53</sup>	H372	acetaldehyde <sup>54</sup>	H352	1,2,4 trimethylbenzene <sup>55</sup>	H411	2 butoxyethanol	Not relevant
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1,2,4 trimethylbenzene <sup>55</sup>	H411																			
2 butoxyethanol	Not relevant																			
<p><b>Assessment and verification general</b></p>	<p><i>"(iii) If a supplier prefers not to disclose the substances of a mixture to the applicant, the information can be sent directly by the supplier to the Competent Body"</i> Not acceptable as the Article 33.1 of REACH regulation makes it compulsory for suppliers to communicate information on substances in the articles. The applicant cannot be hidden information about substances present in the material they buy. If they do not have access to this information, enforcement authorities should act.</p>	<p><b>Accepted</b></p>																		

<sup>48</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/30426>

<sup>49</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/118129>

<sup>50</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/20649>

<sup>51</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/274>

<sup>52</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/87871>

<sup>53</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/25673>

<sup>54</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/10100>

<sup>55</sup> <http://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/8820>

<p><b>Criterion 4</b> <b>Recycled wood, cork and bamboo</b></p>	<p>REACH forbids the use of "creosote". Why does this substance appear in the table 3? It exists several kinds of creosote, could you explain which one are concerned?</p>	<p><b>Rejected</b> in response to the creosote in recycled wood question (also relevant to WFC), the requirement is taken straight from the requirements set out by the European Panels Federation "Standard for delivery conditions of recycled wood" (attached). Even if REACH would no forbid the use of creosote in the EU, this is no barrier to the potential entry of creosote in recycled wood. If you read the standard you will see that they use benzo(a)pyrene as a proxy measure for creosote and effectively apply the limit to benzo(a)pyrene instead of specific types of creosote.</p>
	<p>BEUC and the EEB strongly recommend increasing the ambition level and further limit the concentration of contaminants in recycled wood. The proposed values, are not stringent enough compared to the German recycled Wood Directive (Altholzverordnung) and the requirements set in the Naturplus label. The limits are from 2 times up to 20 times higher (please see Annex I).</p>	<p><b>Rejected</b> It would create market restrictions due to the low share of recycled material</p>
	<p>The provider of the declaration has been changed from the panel supplier to the manufacturer. The manufacturer (must be the manufacturer of the wooden floor) does not have this information which gives the declaration little weight. If the manufacturer of the panel shall give the declaration, this should be clearly stated.</p>	<p><b>Accepted</b></p>
	<p>Are the requirements for hazardous substances &amp; mixtures effective for recycled materials?</p>	<p><b>Acknowledged</b> The requirements are in place for the wood and check as general practice. In DE and AT there are national schemes that can be used instead of the PEF. Maybe there are more MS with national requirements. Cork and bamboo are for the time being not collected</p>
<p><b>Criterion 4</b> <b>Biocidal products</b> <b>(on the draft released on 25.01.2016)</b></p>	<p>The <u>critierion</u> allows the use of biocidal products for in-can preservation, but it does not establish any provisions to limit health and environmental impacts. NGOs strongly encourage the JRC to further develop the requirement and specify that these biocidal products must have been authorised under Biocides Directive, as done in other EU Ecolabel product groups. NGOs highly welcome that biocidal products cannot be used to treat the wood, cork and/ or bamboo of the floor coverings.</p>	<p><b>Accepted</b> It allows the use for in-can preservatives as they ensure that the chemical will reach the point of application without degradation. There are several restrictions included in the type of preservatives that can be used too. The wood, cork and bamboo cannot be treated with biocidal products.</p>

<p><b>Criterion 4</b> <b>Halogenated organic compounds</b> <b>(on the draft released on 25.01.2016)</b></p>	<p><u>The EEB and BEUC strongly support the inclusion of this criterion, in line with the Blue Angel and the Nordic Swan.</u> It is important to restrict these compounds to facilitate future recycling and reduce environmental impacts during disposal or incineration. This criterion can exclude vinyl floorings. It is very important for the credibility of the scheme, to have provisions in this respect, given the increased market penetration of these type of floorings which should not be awarded the EU Ecolabel.</p> <p>Such a <u>wide grouping of substances without reference to intrinsic hazard properties</u> (as opposed to e.g. "phthalate plasticisers with Article 57 hazard classifications") is <u>against the principles of the EU Ecolabel regulation.</u></p> <p>The proposed requirements discriminate against an entire family of substances. This is not scientifically justified. Halogenated organic compounds are a large class of natural and synthetic chemicals that contain one or more halogens (fluorine, chlorine, bromine or iodine) combined with carbon and other elements. All these substances have very different hazard and risk profiles and therefore must be individually assessed.</p> <p><u>Among those halogenated organic compounds, the substances which are considered as hazardous will be excluded anyway by the application of the Art 6.6 of the EU Ecolabel Framework Regulation</u></p> <p>However, the vast majority of organohalogens have little or no toxicity. It should therefore be possible to use the ones which are not classified in ecolabelled products, while guaranteeing the full safety of products from both a health and environment perspective</p>	<p><b>Accepted</b></p> <p><b>Rejected / acknowledged</b> The exclusion of the whole family is based on the grounds showed above. We agree that the exclusion of a whole family of chemicals should not be set as common procedure for the development and/or revision of the EU Ecolabel criteria. Industry was contacted several times and little feedback and information was provided for this product group to suggest possible sub-groups of concern.</p>
<p><b>Criterion 4</b> <b>Halogenated organic compounds</b> <b>(on the draft released on 25.01.2016)</b></p>	<p>I do not know which halogenated organic substances are used in the WFC production, but at least halogenated flame retardants are not used, as far as I know.</p> <p>So if apparently neither the JRC can answer this question, I strongly suggest deleting this criterion – for this revision – and putting it on the Chemicals TF's agenda instead, in order to get a qualified answer.</p> <p>I am a bit puzzled about the second part of your request. You seem to be putting the cart before the horse, so to speak: restrictions have to be based on CLP data to begin with, whereas you are only asking for a potential derogation, taking the generic family restriction for granted.</p>	<p><b>Rejected / acknowledged</b> See above</p>

<p><b>Criterion 4 Flame retardants</b>  (on the draft released on 25.01.2016)</p>	<p>Then, the <u>proposed requirement clearly discriminates against FRs</u>. Indeed, FR is a term which is not scientifically or legally defined. But it gathers a wide range of substances which have a common function. However, these chemicals have very different hazard and risk profiles and therefore must be assessed individually. Those FR chemicals which are considered as hazardous substances will be excluded anyway by the application of the art 6.6 and 6.7 of the EU Ecolabel Framework Regulation. However, it should be possible to use the ones which are not classified in Ecolabeled products, while guaranteeing the full safety of product from both a health and environmental perspectives. Finally, the justification put forward by the JRC, "<i>feedback from the industry indicated that no flame retardants are required due to safety reasons in floorings. Therefore a ban on flame retardants is proposed</i>" is not in line with the principles of better regulation. Banning all the substances not used in a certain product group does not seem to be either a sensible or a realistic approach.</p>	<p><b>Rejected</b></p> <p>The use of flame retardants is not required by legislation but industry confirmed that they are used for some products.</p> <p>As they are no needed for safety reasons, its use can be regarded as an additionally use of chemicals and resources that do not have a fundament function into the product group. In order to minimize possible environmental impacts attributed to the extraction, manufacture, use and end-of-life of these chemicals, its use is proposed to be banned.</p>
<p><b>Criterion 4 Flame retardants</b>  (on the draft released on 25.01.2016)</p>	<p>This requirement has been erased. In 4g halogenated substances are banned which means that the requirement has changed, and now non-halogenated flame retardants are allowed. Denmark cannot accept this.</p> <p>Use of flame retardants must be restricted as in the previous draft.</p>	<p><b>Accepted</b></p>
<p><b>Criterion 4 Free formaldehyde</b></p>	<p>Nordic Swan are in process to leave the FH 0,2% criteria. They are making a generic exemption for formaldehyde and isocyanate based adhesives labelled with Carc 1A/1B/2. Instead they have introduced more demanding criteria for emission, indoor air and safe handling in production.</p> <p>The new Swan criteria are valid for panels and flooring, but not yet for furniture (current criteria are valid until 2017).</p>	<p><b>Partially accepted.</b></p> <p>The proposal of removing free formaldehyde, due to the above mentioned classification of this compound does not seem to fulfil the objectives of the EU Ecolabel.</p> <p>Due to the uncertainties on how to measure the free formaldehyde from some compounds, this limitation is proposed to be restricted to those components which have a clear procedure to measure this substance, the EN1243 for the free formaldehyde from liquid aminoplast resins.</p>



	<p>As promised, our Formacare Analytical Task Force has selected the most appropriate test for measuring free formaldehyde in aminoplast resins, and has carried out a Round Robin in 19 company laboratories to evaluate best practice for making these measurements.</p> <p>After reviewing the findings, Formacare recommends that measurement of free formaldehyde in liquid adhesives should be performed in accordance with EN 1243:2011. The recommendation is valid only for liquid aminoplast resins (for example wood glues and impregnating resins) containing formaldehyde, and/or urea and/or melamine, but excluding etherified adhesives. The best practice recommendations are available on the Formacare website, and can be found <a href="#">here</a>.</p> <p>If you wish to consult the entire section you can also access it through this link: <a href="http://www.formacare.org/about-formaldehyde/health-safety/formaldehyde-air-monitoring/">http://www.formacare.org/about-formaldehyde/health-safety/formaldehyde-air-monitoring/</a></p>	
<p><b>Criterion 4</b> <b>VOC</b> <b>surface</b> <b>treatment</b></p> <p style="text-align: right;"><b>in</b></p>	<p>With the aim to promote the diffusion of the EU Ecolabel it should be raised at least to 10 g/m<sup>2</sup>. In line with the draft criteria of EU Ecolabel for furniture the value should be raised to 30 g/m<sup>2</sup>.</p>	<p><b>Rejected</b></p> <p>This request lacks of supporting information even if personally required.</p>
	<p>In Assessment and verification: The word "substances" has to be changed in "products":</p>	<p><b>Partially accepted</b></p> <p>The word substances was unclear for this criterion, therefore it has been replaced by substance or mixtures. These terms are in agreement with REACH and aim at covering all kind of substance or mixtures that can be used for this application.</p>

	<p>It is not clear the sentence:</p> <ul style="list-style-type: none"> <li>- Have a total VOC content of less than 5% by weight (in-can substance concentration), or</li> <li>- Have a total VOC content greater than 5% by weight but be shown to be applied in quantities that amount to less than 2 g/m<sup>2</sup> of treated surface area</li> </ul> <p>Our proposal is:</p> <p>Have a total VOC content <u>of less than or equal to</u> 5% by weight (in-can substance concentration), or</p> <ul style="list-style-type: none"> <li>- Have a total VOC content greater than 5% by weight but be shown to be applied in quantities that amount to less than 2 g/m<sup>2</sup> of treated surface area</li> </ul> <p>Or (like in existing criteria)</p> <ul style="list-style-type: none"> <li>- Have a total VOC content up to 5% by weight (in-can substance concentration), or</li> <li>- Have a total VOC content greater than 5% by weight but be shown to be applied in quantities that amount to less than 2 g/m<sup>2</sup> of treated surface area</li> </ul>	<p><b>Accepted</b></p>
<p><b>Criterion 4</b> <b>VOC</b> <b>surface</b> <b>treatment</b></p>	<p>It is not clear the sentence:</p> <p>“If the SDS states that the VOC content of the surface treatment substances or mixtures used is less than 5% by weight, then no further verification shall be necessary”</p> <p>Our proposal is: If the SDS states that the VOC content of the surface treatment substances or mixtures used <u>is less than or equal</u> to 5% by weight, then no further verification shall be necessary.</p> <p>or</p> <p>If the SDS states that the VOC content of the surface treatment substances or mixtures used is up to 5% by weight, then no further verification shall be necessary.</p>	<p><b>Accepted</b></p>

	<p>In file "legal text EUEB jan 16 clean" there is not the sentence: "Confidential details from the manufacturers in the form of content declarations/formulations can be sent directly to the respective competent body.</p> <p>In file: "legal text EUEB jan 16- flooring type tables" there is the sentence: "Confidential details from the manufacturers in the form of content declarations/formulations can be sent directly to the respective competent body.</p>	<p><b>Accepted</b></p> <p>The sentence is included in the general assessment and verification section of the EU Ecolabel criteria and therefore it applies to all the criteria without need for repetition in each particular criteria</p>
	<p>In the formula the term used is efficacy, in the table 4.2 is Efficiency</p>	<p><b>Accepted</b></p> <p>Changed to effectiveness throughout the criteria wording</p>
<p><b>Criterion 4</b> <b>VOC surface treatment</b></p>	<p>in BATIS concerning the limit to be arisen up to 10g/m<sup>2</sup></p>	<p><b>Accepted</b></p>
<p><b>Criterion 4</b> <b>Plasticizers</b></p>	<p>"Any plastic foils applied to panel surfaces shall not contain any phthalate plasticisers...". The term "Plastic foils" is confusing and too narrow". Suggestions: "Any adhesive, resin or surface treatment compound shall not contain ...." – see also further in "assessment and verification"..</p>	<p><b>Accepted</b></p> <p>The criterion has been modified as proposed.</p>
<p><b>Criterion 5</b> <b>energy consumption</b></p>	<p>"accounting the direct and indirect energy consumed in the production of the flooring (e.g. energy consumed in pressing, proportional energy consumed for heating and lighting of the facilities, etc) ".</p> <p>I would not recommend to add the energy consumed for heating and lighting of the premises itself as from practice I know that it is very hard if not impossible to acquire this data in China + many different bamboo products are produced in the same factory making it difficult to allocate this to a particular bamboo products.</p>	<p><b>Accepted</b></p> <p>The criterion has been modified as proposed.</p> <p>"- the direct energy consumed in the production of the flooring (e.g. energy consumed in pressing). Indirect energy consumption is not accounted (eg proportional energy consumed for heating and lighting of the facilities, etc)"</p>
	<p>"E &gt; 11.0 for wood floorings (one single solid layer)" – replace by "wood floorings of solid natural wood"</p>	<p><b>Partially accepted/ accepted</b></p> <p>The term solid wood flooring is proposed for this benchmark</p>

	<p>My personal opinion is clear: such formulas have to be avoided as much as possible. Although I admit that there can be specific reasons in some specific cases to go that way. But in 95% of the cases, I have serious doubts about the usefulness.</p> <ul style="list-style-type: none"> <li>- The reasoning behind many of such formulas are extremely difficult to check... We can only rely on the 'cleverness of the decision maker'. But unfortunately, not all decision makers are clever.</li> <li>- Technology changes very fast. Who updates such formulas in line with the evolution of the technology?</li> <li>- This is a dream for certifiers and lawyers. But a nightmare for people who just want to do good things. We confirm the idea that being ecological is difficult and complex.</li> <li>- ...</li> </ul> <p>In Europe the electricity input should be 100% renewable (preferably ecolabelled). As I have also strongly defended during the decision process of the European Ecolabel for tourist accommodation. The whole world is turning renewable. It would only be normal that the ecolabels follow this trend. I have the feeling that such requirement could replace the whole formula. Yes, I agree, you would lose the part about efficiency, but in this specific case the benefits of simplicity could well outweigh the disadvantages of missing one aspect. All too often we try to solve everything with 1 tool. That is not necessary.</p>	<p><b>Accepted</b></p> <p>The clause has been modified to only account for the direct energy consumption. The new wording is as follows:</p> <p>"E scoring shall be calculated per m<sup>2</sup> of produced flooring and accounting the direct energy consumed in the production of the flooring (e.g. energy consumed in pressing). Indirect energy consumption is not considered (eg proportional energy consumed for heating and lighting of the facilities, etc)"</p>
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	<p>This criterion applies to very different production processes. Conditions to be included in the calculations for laminated floorings appear to be unable to identify the effective energetic content of this product.</p> <p>A more detailed description of the production process of laminate floorings is necessary to which refer energy consumption calculations.</p>	<p>The energy consumption criterion for laminate floorings is proposed to cover the following aspects of the manufacturing process:</p> <ul style="list-style-type: none"> <li>- the energy consumed in the manufacture of the core board</li> <li>- the direct energy consumed in the production of the flooring (e.g. energy consumed in pressing). Indirect energy consumption is not accounted (eg proportional energy consumed for heating and lighting of the facilities, etc)</li> </ul> <p>The only not included energy consumption in the manufacture of adhesives, lacquers or any other in-can preparation.</p> <p>Although the quantity of these materials used can be higher in the case of the laminate floorings they are also used most of the other kinds of floorings, eg in multi-layer wood flooring (glue and surface treatment) and other floorings.</p> <p>This exemption applies to all kind of floorings</p>
<p><b>Criterion 5 energy consumption (on the draft release on 25.01.2016)</b></p>	<p>end of table – laminate floorings:</p> <ul style="list-style-type: none"> <li>• “Drying, grinding and sawing” does not apply as the HDF core board is delivered</li> <li>• “OK to deliver energy used for manufacturing of the melamine layer, ... add: ” with exclusion of the paper”.</li> <li>• What is meant by “stacking with electronic precision”?</li> <li>• What is meant by “trimming”?</li> <li>• Suggestion to mention for this paragraph <ul style="list-style-type: none"> <li>o Manufacture of the core board</li> <li>o Impregnation process of the décor, overlay and backing paper</li> <li>o Pressing</li> <li>o Sizing</li> <li>o Packaging</li> <li>o and any other activity needed for manufacturing</li> </ul> </li> </ul>	<p><b>Accepted</b></p>

	Page 17 second line – editorial: “fuels” instead of “fells”	<b>Accepted</b>
	formula for calculation of A is very confusing – editorial	<b>Accepted</b>
	factor 2,5 ==> ok and it would also necessary to distinguish the KWh from primary energy (=KWhep) and from the electricity (KWhe) in the formula.	<b>Accepted</b>
	understand the factor 0,8 but he is not able to suggest another one	<b>Accepted</b>
<b>Criterion 6</b> <b>VOC emissions</b>	It can be clearer explain that in the formula you have to subtract the value of acetic acid (minus).	<b>Accepted</b> The wording of the criteria has been redrafted accordingly
	I suggest to clarify that derogation for acetic acid must also apply to the calculation of the R – value	<b>Rejected</b> The R-value is the sum of ratios of series of values with a LCI value. The need for such as exception is going to be evaluated
	About the measure of acetic acid value: “ <i>emissions of acetic acid from the natural wood the floor covering is made of and measured in accordance with CEN/TS 16516 (same conditions as the tests for the finished product)</i> ” double testing could be an incorrect method to calculate the (TVOC – (minus) acetic acid) value, because you can't compare data from two samples that are different. For the scope of the criterion you need to test final product (the product that the customer will have in his house) and not wood from raw material that isn't in the final conditions.	<b>Accepted</b>
	Definition of TVOC and TSVOC in footnote “a” and “b” are different than definition in article 2, par. 5 and 6	<b>Accepted</b> Footnotes are removed

<b>Criterion 6 VOC emissions (on the draft released on 25.01.2016)</b>	<p>BEUC and the EEB highly welcome this criterion but recommend increasing its ambition level. The limits proposed in the current version are more than 10 times higher than proposal presented in May 2015 and results from studies carried out by consumer organizations show that lowering the values is possible.</p> <p>Several European consumer organizations made comparative tests on 20 laminate floors present on the European market. This study revealed an average value for TVOC of 0.023 mg/m<sup>3</sup> and a maximum amount of emissions of 0.050 mg/m<sup>3</sup>. This demonstrates that products existing on the market can comply with the requirements of 0.16mg/m<sup>3</sup> TVOC emissions<sup>1</sup>. Setting strict limits will contribute to make ecolabel products stand out as the environmentally best performing products on the market. The EU Ecolabel products have to remain frontrunners in the market and pave the way for better products profiles.</p>	<p><b>Accepted</b></p> <p>Evidence has been provided that show the extremely low emission of laminated regarding VOCs. Therefore stricter limits for this product group are proposed.</p>
	<p>I agree with the derogation for wood and acetic acid, but when this applies to wood, it can also be contained in laminate floors. It would make sense to add laminate floors also to the first row to be: "<i>Solid wood floorings, Multi-layer wood floorings, Mosaic wood floor and laminate floors.</i>"</p>	<p><b>Rejected</b></p> <p>See above</p>
	<p>We suggest to clarify that derogation for acetic acid must also apply to the calculation of the R – value.</p>	<p><b>Accepted</b></p>
	<p>We approve that the criteria takes into account the Total VOC and the Total SVOC.</p> <p>We approve table 6.1: VOC- in our point of view it is necessary to take into account the air emission and not only the VOC content in the substances used. We also support the thresholds (mg/m<sup>3</sup>) which are more strict than the French regulation</p>	<p><b>Accepted/acknowledged</b></p>

<p><b>Criterion 7 formaldehyde emissions</b></p>	<p>You are kindly allowing formaldehyde emissions testing and evaluation in line with 3 different schemes. I do like that, as you know. But you are not allowing testing with prEN 16516 even though this will be the main standard used for national VOC regulations, and for ecolabels such as Blue Angel or M1 or Indoor Air Comfort. Yes, you write for the E1 option: "..., supported by test reports carried out according to EN 717-1, EN 717-2 or EN 120 or an equivalent method". Due to the relevance of EN 16516 testing which almost all manufacturers will have to do anyway in the concerned countries, wouldn't it be an option to write "..., supported by test reports carried out according to either EN 717-1, EN 717-2 or EN 120 or an equivalent method such as prEN 16516". This would allow saving testing costs at least for the manufacturers selling to Belgium, France, Germany, and Finland.</p>	<p><b>Partially Accepted</b></p> <p>In order to make easier the equivalence of those methods that can be used to demonstrate the low emission of formaldehyde, the words "or an equivalent method" has been added to the list.</p> <p>However, it is considered that "such as prEN 16516" is not needed to be added and that may prevent the use of other possible methods that can also be considered as equivalent.</p>
<p><b>Criterion 7 formaldehyde emissions (on the draft released on 25.01.2016)</b></p>	<p>Sentence is UNCLEAR. Proposal to change into: "The floor covering manufactured by using formaldehyde-based boards, adhesives, resins or finishing products shall have either..."</p> <p><u>Table 7.1</u> It is not clear if the test report (for all 3 schemes) shall be submitted or not. And it is not clear if the test shall be done by a 3<sup>rd</sup> party.</p>	<p><b>Accepted</b></p> <p><b>Accepted</b></p> <p>The criteria has been rewording for clarity. The three types of verification require the declaration of the manufacturer and the core board if applicable together with the test reports.</p> <p>The performance of the testing by a third party is not explicitly indicated and it depends on the standard used for compliance. If required, it is stated in the standard.</p>



<p><b>Criterion 7 formaldehyde emissions (on the draft released on 25.01.2016)</b></p>	<p>BEUC and the EEB strongly call for an additional provision that will limit formaldehyde emissions also at the level of the core board to 50% of E1. The current proposal set strict limits for formaldehyde, but this is done only for the final product not for the core board.</p> <p>Tests performed by consumers organisations evidence that it is possible for the end floor covering to comply with a lower value of formaldehyde emissions (50% of E1) even though the core board used in the manufacturing has higher emissions (E1). Experts from the laboratories suggest that this can be achieved through the sealed provided by the finishing layer on top. However, higher emissions of formaldehyde to the air from the core board can occur because of floor degradation during use or at the disposal stage. This has a very negative impact on indoor air quality. The restriction of formaldehyde in the core board is crucial considering recent processes of hazard reclassification and further restrictions under discussion.</p> <p>Formaldehyde has been re-classified as Carcinogenicity Cat 1B (not restricted to inhalation route) and Mutagenicity (germ cells) Cat 2 since April 2015. Future restrictions through REACH cannot be excluded, including its use in floor coverings. It is essential for the EU Ecolabel to deliver strict criteria for the core board that take account of these developments. That would be in line with the requirements set by the Blue Angel for particle and fibre boards to achieve his ecolabel and would also contribute to differentiate EU Ecolabel products in terms of marketing.</p> <p>NGOs propose to divide the criterion in two parts for clarity reasons and mention explicitly that:</p> <ul style="list-style-type: none"> <li>- Only core boards certified with formaldehyde emissions lower than 50% E1 shall be bought by the manufacturer of wooden floor coating and shall be allowed to be used in ecolabel products. Assessment can be done through suppliers certificates.</li> <li>- In addition, the final product shall not have formaldehyde emissions higher than 50% E1. This is what the criterion already proposes. Assessment is to be done through tests.</li> </ul>	<p><b>Accepted</b></p>
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	Apparently there is a problem with the footnote ==> at the top of the page 20 : footnote 31 & 32 are deleted but they still appear at the bottom of the page	<p><b>Acknowledge</b></p> <p>It should read:  Footnote 1: the requirements apply to floor coverings with a moisture content of H=6.5%  Footnote 2: regulation 93120 Airbone toxic control measure to reduce formaldehyde emissions from composite wood products, California code of regulations</p>
<p><b>Criterion 7 formaldehyde emissions (on the draft released on 25.01.2016)</b></p>	Is the threshold 0,1ppm is maintained? What is the limit value for formaldehyde?	The threshold is 50%E1 or in exceptional cases 65% E1.
	Why the previous request of an analysis report has been deleted? Is it a demand from the manufacturers?	<p><b>Rejected.</b></p> <p>Test reports are required, but the need of coming from accredited lab if the scheme does not require this clause has been removed. This is because it was in contradiction with the general requirements in the assessment and verification part at the beginning of the criteria set where it is said that "competent bodies shall preferentially recognise attestations..."</p>
<p><b>Criterion 8 fitness for use</b></p>	EC conformity mark "CE" must be a prerequisite. For CE mark the standard is EN 14342	<p><b>Rejected.</b></p> <p>The CE marking is mandatory across Europe and therefore it does not add any environmental or ecological value to the product.</p> <p>Requiring this issue does not allow us to make any difference regarding the environmental performance of the products.</p>

	<p>The definitions of the classes of use are given in Table 7.1 but the first paragraph of the criteria already refers to the definitions.</p> <p>Suggestion: put <i>“Only the requirements associated with the specific type of flooring have to be fulfilled. Floor coverings shall achieve at least: - the level of use of class 22 (alternatively WR1) for floor coverings intended for private use- the level of use of class 32 (alternatively WR2) for floor coverings intended for commercial use.”</i> Immediately after Table 7.1</p> <p>This is not applicable to parquet as there are no levels of use classes. Please clarify wording</p>	<p><b>Accepted</b></p> <p>The wording of the criteria has been redrafted accordingly</p>
<p><b>Criterion 8 fitness for use  (on the draft released on 25.01.2016)</b></p>	<p>Requirement for WR1 wear resistance for floor coverings intended for private use.</p> <p>This requirement is impossible to fulfil for lacquered solid or multi-layer wood surfaces! It would require a THICK lacquer layer re-enforced with mineral particles. This would make renovation = sanding and re-lacquering impossible.</p> <p>It is also unfair in comparison with on-site finishing which will never obtain WR1 wear resistance.</p> <p>What about oiled finishes which become more and more popular?</p> <p>The criteria are maybe applicable for veneer surface layers, but not for parquet where the thickness of the wear layer allows renovation it is unrealistic!</p> <p>I refer to a classification system in France where the wood-hardness of the surface layer in combination with its thickness is taken into account for durability. Surface treatment can offer extra wear resistance but is not the main factor. Of course, when the surface layer wood thickness is very small, it only the surface treatment that is determining for the wear resistance.</p>	<p><b>Accepted</b></p>

<b>Criterion 8 fitness for use (on the draft released on 25.01.2016)</b>	<p>BEUC and the EEB strongly call for reintroducing class 32 for both private and commercial use, as this is a better standard for durability and its use is widespread.</p> <p>The introduction of a separate class for private use, class 22, will not help to differentiate ecolabel coverings in terms of durability, since the standards for this class are much weaker than those of class 32 in terms of resistance. Class 32 guarantees the product's resistance, durability and therefore an expanded product lifetime and its use is widespread.</p> <p>Class 32 is most often recommended to consumers by the staff working in building supply stores. Even big manufacturers like Quick Step in the United Kingdom advertise their laminate floors by making reference to the class 32 on their website.</p> <p>Last but not least, it is preferable to set a unique class for durability given that it is not possible to control whether the covering will be given a commercial or private use.</p>	<p><b>Partially accepted</b></p> <p>The sources of information provided do not recommend the use of class 32 for private use. However, industry confirms that there are large numbers of models that are class 23 or higher and that can be perfectly used in private uses.</p> <p>A class 23 is proposed as threshold for laminate floorings intended for private use</p>
	<p>The prEN13696 Standard specifies a test method to determine the resistance to wear of lacquered wood floorings, a method to test the elasticity of the lacquer and a method to determine resistance to impact of lacquered wood floorings.</p> <p>Not of factory oiled, untreated wood and untreated multilayer wood flooring.</p> <p>It is not appropriate to refer for classification to a standard of a specific product for other types of products.</p>	<p><b>Accepted</b></p>

	<p>It could be better maintain the current criterion without reference to specific standards that can change in the period of validity of Ecolabel criteria (10 years):          "The product shall be fit for use. This evidence may include data from appropriate ISO, CEN or equivalent test methods, such as national procedures.          Assessment and verification: details of the test procedures and results shall be provided, together with a declaration that the product is fit for use based on all other information about the best application by the end-user.          The EC conformity mark 'CE' for construction products, according to REGULATION (EU) No 305/2011, provides producers with an attestation of conformity easily recognisable and may be considered as sufficient in this context."          EC conformity mark "CE" must be a prerequisite. For CE mark the standard is EN 14342 - Wood flooring - Characteristics, evaluation of conformity and marking          Or          in line with draft criteria of EU Ecolabel for furniture the criterion should be:          "8. Fitness for use          EU Ecolabel wood floor covering shall be considered as fit for use if it complies with the requirements set out in the latest versions of any relevant EN standards listed in Appendix III that relate to the durability, dimensional requirements, safety and strength of the product.          Assessment and verification: The applicant shall provide a declaration stating which (if any) standards in Appendix III apply to the product and then provide a declaration of compliance with any relevant EN standards, supported by test reports from either wood floor covering manufacturer or component part/material suppliers, as appropriate."          In this case in appendix III it is necessary to add EN 14342- Wood flooring - Characteristics, evaluation of conformity and marking.</p>	<p><b>Rejected</b></p> <p>The current criterion does not require a higher performance than the minimum performance level to place the product on the EU market. This means that the current criterion makes no distinction between those products that can be classified as front-runners and an average product.</p> <p>The requirement of compliance with the CE is mandatory for all the products on the EU market. This makes redundant to include this requirement in the EU Ecolabel criteria. However, this reminder has been included in the pre-amble of the EU Ecolabel criteria set and therefore it does not only apply to criterion 8 but to all the proposed criteria.</p>
<p><b>Criterion 9          Reparability          and extended          guarantee</b></p>	<p>Extended product guarantee: unconditional warranty is IMPOSSIBLE.          Proposal: <i>"the product shall be used in the intended class of use, under normal conditions of use and following the manufacturer's instructions of installation and maintenance...."</i></p>	<p><b>Accepted</b></p>

<b>(on the draft released on 25.01.2016)</b>	What about other languages than English??	<b>Accepted</b>
<b>Criterion 11 EU Ecolabel information</b>	<p>Proposal for criterion 11" <i>"low-emitting product (50%...)</i>.</p> <p>Suggestion: delete "50% or 65% E1" as emission is not only related to formaldehyde</p> <p>"An important aspect that should be communicated is the low-emission level reached by this product. The CE-marking requires only a level of emissions of E1 while the EU Ecolabel products reach a level of emissions that is 50 or 65% of the E1."</p> <p>CE-marking according to CPR will also require information on VOC emissions. So restriction to formaldehyde is discriminating. Please clarify or delete completely.</p>	<b>Accepted</b> The wording of the criteria has been redrafted accordingly
<b>General other</b> /	<p>a) <i>Assessment and Verification general section:</i> - it should be stated that declarations required to prove the respect of criteria must be always accompanied by the relevant documents like e. g. tests results, certifications, bills, invoices, etc. The Assessment and Verification sections of the criteria should be modified consequently;</p> <p>a) <i>Assessment and Verification general section:</i> - the words "or site visits" should be added at the end of the phrase "Where appropriate, competent bodies may require supporting documentation and may carry out independent verifications";</p> <p>b) a <i>Foreword section</i> should be added at the beginning of the Annex to include general statements not referring to Assessment and Verification general section. E. g. the following phrases present in the draft Decision on footwear should be added in this new section: -"The EU Ecolabel criteria reflect the best environmental performing products on the ..... market."</p>	<p><b>Accepted</b></p> <p><b>Accepted</b></p> <p><b>Rejected</b> Not a normal practice and it does not add any additional value</p>

	<i>-Whilst the use of chemicals and release of pollutants is part of the production process,... only when there are no viable alternatives existing on the market.";</i>	<b>Rejected</b>
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**Table 25 Table of comments on the Technical Report TR3.0 available in [http://susproc.jrc.ec.europa.eu/wooden\\_floor\\_coverings/documents.html](http://susproc.jrc.ec.europa.eu/wooden_floor_coverings/documents.html)**

Technical report TR3.5	Stakeholder's feedback	Decision taken and IPTS analysis and further research
Definitions	<p>"brand/trade name" and further the footnotes seem to be missing or at least I could not find them</p>	<p>All proposed changes have been included in TR 4.0</p>
	<p>"Solid wood flooring is the second type most commonly used..". It is not only SOLID wood flooring, but also engineered or multi-layer wood floorings. So I would suggest changing "solid wood floorings" in "solid and multilayer wood flooring is.."</p>	
<p>"hybrid floorings"</p>	<p>"..combination of laminate and resilient floorings" is only part of the hybrid floors on the market. Hybrid floors are <u>all possible</u> combinations of moisture sensitive cores (mainly wood based panels) or temperature sensitive cores (polymers) and surface layers that are thermosetting like melamine or thermoplastics such as but absolutely not restricted to PVC. The surface layers are provided with a coating of all possible kinds. The way the products are presented here as "significant reduction in environmental aspects..." is not granted.</p>	



	<p><i>"Extended life time"</i> is not certain and <i>'recycling'</i> of these products is very uncertain, just because of the combination of .... All the technical advantages listed in paragraph 1 are not at all unique for hybrid products. CEN/TC134 will start work on a "performance standard" for hybrid products. All examples given in the second paragraph are NOT at all unique for hybrid floors.</p> <ul style="list-style-type: none"> <li>- Moisture resistant HDF core with sealed perimeter – also exists in laminate floorings</li> <li>- The properties listed in "a solid some mm thick LVT..." are not unique for PVC!!</li> <li>- Ultra-high resolution printed paper – already very long time in use for laminate floors</li> <li>- Transparent vinyl layer.... Scuffs and abrasions – what about laminate flooring surfaces? Wear resistance at least the same and vinyl is usually low resistant to scuff marks</li> <li>- Microscopic ceramic particles.... Laminate floors and parquet lacquers containing corundum are for decades!!</li> </ul> <p>The whole paragraph on "hybrid floors" is misleading, incorrect and tendentious. I would suggest to limit to</p> <ul style="list-style-type: none"> <li>- Hybrid floors are all possible combination of ....</li> <li>- The information on these floorings is still scarce.</li> </ul>	
<p>Installation and use stage</p>	<p><i>"Unfinished floor covering should provide information about the most recommended surface treatment to be applied."</i></p> <p>This is unconditional and would allow finish treatment with the most environmentally un-friendly product. We propose to change in <i>"..information about recommended surface finishes with low environmental impact"</i>.</p> <p>Isn't it possible to refer to a standard like EMI code?</p>	

Overall lifecycle	<p>last row and last column: "However, to prevent from the environmental impacts that can be caused during the useful life due to the use of VOC containing products and their associated emissions, appropriate instructions are given to the consumers allowing maintenance of the floorings without use of organic cleaners."</p> <p>What is the meaning here of "<i>organic cleaners</i>". As far as I know cleaning products always contain some quantities of VOC as the floor should be able to dry as quickly as possible after cleaning.</p> <p>Shouldn't it be: "...Allowing maintenance of the flooring using low VOC emitting cleaning solutions?" Where are such cleaning solutions available? Primarily solutions have to work which means to clean and protect the flooring.</p>	
Overall lifecycle	fitness for use: "It ensures a minimum quality in the product to last for the expected lifetime under certain conditions (eg intended use, indoor use, etc)" suggestion to replace "certain" by "envisaged conditions"	
Criterion VOC in surface treatment	<p>The central sentence after "dangerous substances in the coating and surface treatment" is superficial.</p> <p>Suggestion to delete "Other substances – VOC content"</p>	
Criterion plasticizers	<p>P29/134</p> <p>DINP, DIDP and DPHP are not classified. DINP and DIDP have been the object for a risk assessment conducted by ECHA and which lasted four years. The conclusions of this re-evaluation of new scientific evidence concerning DINP and DIDP have been endorsed by the Commission in January 2014, that "no unacceptable risk has been characterised for the uses of DINP and DIDP in articles other than toys and childcare articles which can be placed in the mouth"</p> <p>Therefore, DINP and DIDP are safe for all current consumers' applications and their restriction would be discriminatory and should be avoided.</p> <p>Only DINP, BBP and DIBP are classified as SVHC. The restriction of any other plasticisers is discriminatory and should be avoided.</p>	

<p>Criterion halogenated organic substances</p>	<p>Therefore, we believe that the argumentation used in the JRC's Technical Report is not adequate:</p> <ul style="list-style-type: none"> <li>- Some halogenated molecules are persistent, some are not; and persistency (combined with toxicity) always triggers a hazard classification that is restricted under Article 6.6. We would also like to remind you that persistency alone is needed in some cases for durability and service life purposes.</li> <li>- Some halogenated molecules form dioxins more readily when incinerated in improper conditions, some do not. Lumping together every halogenated compound as worst-case "dangerous pollutant" is not scientifically justified. Additionally, waste of this product group is very unlikely to be exported from Europe (no precious metals to recycle), and incineration is done in modern installations which fulfil the most stringent criteria, drastically limiting dioxin emissions. Therefore the argumentation of dioxin formation is not justified. So if the JRC screened the products typical composition for hazards and found some concrete, worrying chemical – that escapes the provisions of Article 6.6 –, they should say so.</li> </ul>	
<p>Explanation criterion on wood</p>	<p>"One of them require minimum sustainable certified wood content of 100% (FSC 100% label), two more require a minimum sustainable certified wood content of 70% (FSC mix label and PEFC certified label) and the last two labels require 70% recycled wood or a combination with certified wood (FSC Recycled label and PEFC certified and recycled label)."</p> <p>The first statement, about FSC 100%, is correct, although "minimum 100%" is pushing it far. Just "100%" would do as well.</p> <p>The mistakes: in general it is important to emphasise that the labels also have requirements for the 30% that you do not mention, but they are different for each of the four logos:</p> <ol style="list-style-type: none"> <li>1. FSC Mix: requires a 70% minimum of sustainable certified wood and/or post-consumer recycled wood content and the other, maximum 30% component has to be controlled wood and/or pre-consumer recycled content</li> <li>2. PEFC certified: requires a 70% minimum of sustainable certified wood and/or recycled wood content and the other, maximum 30% component has to be from controlled sources.</li> <li>3. The FSC Recycled Label requires 100% recycled wood content: no mixing with virgin wood is allowed.</li> <li>4. The PEFC Recycled Label requires 70% recycled wood content: the rest has to come from PEFC certified forests and/or be from controlled sources.</li> </ol>	

**Table 26 Table of comments on the questions presented at the EUEB meeting in January 2016**

<b>Questions brought to EUEB Jan 2016</b>	<b>Stakeholder's feedback</b>	<b>Decision taken and IPTS analysis and further research</b>
<p><b><u>1. Article 1: Name of the product group</u></b></p>	<p>In our view, the preferred name of the product group is b) <i>wood, cork and bamboo based floor coverings</i>, as option a) is too complicated and long; and in option b) plant-based is unclear.</p> <p>We propose "<i>wood, cork and bamboo and other bio-based floor coverings</i>" because "bio-based" means material derived from renewable biological resources including wood, plant, cork, bamboo, etc</p>	<p><b>Action:</b></p> <p>Change of name to  <b><i>wood, cork and bamboo based floor coverings</i></b></p>
<p><b><u>2. Article 1: Threshold and verification of the minimum content:</u></b>  Should wood, cork and bamboo based materials also be considered in the minimum content of 80% in mass of the product?</p>	<p>Our answer is yes: if not, the product group will be more exclusively limited to 'high content' wood products. From JRC's information it appears that:</p> <ul style="list-style-type: none"> <li>- no scientific evidence has been found that a lower wooden material content leads neither to a lower environmental impact nor prevents floorings from being recycled;</li> <li>- thus a large share of the EU market can be a candidate to be awarded with the EU Ecolabel if all the other requirements are fulfilled.</li> </ul> <p>We wonder whether lowering the bio-based content is appropriate for the product category? Consumers would expect a high content of (renewable) bio-based materials in the product.</p>	<p><b>Action:</b></p> <p>Keeping the threshold of the minimum content as <b><i>"for more than 80 % in mass (in the final product), from wood, wood-based, cork, cork-based, bamboo, bamboo-based materials or fibres"</i></b></p>

<p><b><u>3. General Hazardous Substances requirements:</u></b></p>	<p>Especially regarding criterion 2.1 SVHCs, we are of the opinion that a limit of 0.1% w/w is not strict enough, given the severe risks, even if criterion 3 excludes specific substances. This was also discussed during the AHWG. We prefer a general strict limit, as a 'safety net'. The large product weight of wooden floor coverings could lead to a considerable amount of dangerous substances per m2 present.</p> <p>Even if, as JRC writes on BATIS, this criterion 2 follows the recommendations of the EU Ecolabel Regulation (EC) No 666/2010 and its wording and proposed threshold has been drafted in line with other EU Ecolabel criteria revisions and developments for other product groups such as EU Ecolabel for Furniture and Footwear.</p>	
	<p>- the document considers no combine effect of two substances mixed. Does it mean that combine effects do not exist or that this case has not been considered yet?</p>	<p>The whole area of synergetic effects (or 'cocktail effects') is earmarked for future investigation in the EU. This is not currently something agreed for consideration within the frame of the hazardous substance criterion.</p> <p>For the best of our knowledge, if there is no specific evidence of a synergetic effect for specific substances to be put forward and addressed by a specific criterion.</p>
<p><b><u>3. General Hazardous Substances requirements:</u></b></p>	<p>- a limit on the total weight of hazardous substances could be set. (currently the limit is on weight by weight)</p>	<p>For the time being this is not within the agreed scope of the hazardous substance criterion. There are the CLP rules for mixtures (summation for aquatic hazards and trigger concentrations for many of the other hazards) but these are not designed to be applied to articles.</p> <p>There would need to be very specific evidence to set such a limit, and it might make more sense for specific types of substances of hazards e.g. if there was evidence of migration when they are incorporated at a certain % loading in a polymer.</p> <p>For the best of our knowledge we don't have any evidence of these kinds of effects.</p>
<p><b><u>4. Specific substances requirements:</u></b></p>	<p>We do not know whether primers are important in this product group. However, if primers are used, we think they should not be subject to different criteria compared to other surface treatments.</p>	<p><b>Action</b></p> <p>Primers are kept in the criterion as it seems they are</p>

<p><b>Heavy metals in primers:</b></p>	<p>This question could be addressed to producers.</p> <p>Primers are not addressed In the Nordic swan criteria for furniture</p>	<p>used in the industry</p>
<p><b><u>4. Specific substances requirements: Halogenated organic compounds</u></b></p>	<p>From JRC's information it appears that alternative materials free of added chlorine or other halogens can be found in all applications which meet or exceed performance requirements. This makes a <i>precautionary principle</i> approach possible.</p> <p>From JRC's further research on extending the scope for the inclusion of hybrid floorings, it becomes clear that for the next revision, further research about such flooring is relevant as '<i>next generation of floor coverings</i>'.</p> <p>If the declaration of non-use of halogenated organic compounds and the SDS of the substances are a relatively easy procedure, the restriction should be maintained. Thus the use made by a relevant part of the market will be under control</p> <p>Dropping a restriction could also be interpreted as a step backward and a slackening in the policy</p>	<p><b>Action</b></p> <p>Currently halogenated organic compounds seem to be used in a very little amount of products. Estimations consider that maybe they are used in less than 1% of the total market.</p> <p>Further revisions should consider how the market develops</p>
<p><b><u>5. Energy consumption in the production process:</u></b></p>	<p>We cannot tell whether the proposed formula is appropriate. Neither can we assess the factors for RES (renewable energy sources) and electricity. From JRC's further research it becomes clear that the calculation and conversion factors etc. require specific technical knowledge. Therefore we suggest that the <i>Horizontal Task Force Energy</i> criteria for Production sites looks further into this criterion, aiming also at the alignment of related energy consumption criteria in other product groups.</p> <p>We do not possess relevant data from producers that would allow testing the proposed formula.</p>	<p><b>Actions</b></p> <p>Several industry stakeholders have shown agreement with the criterion wording and thresholds, therefore no further changes are proposed.</p>

	<p>Score E: why is the limit higher for wood-flooring than for multi-layer flooring and covering? Does multi-layer consume more energy to be produced? Does it aim to promote the use of multi-layer flooring and covering?</p> <p>General formula: choices of factors and thresholds should be detailed. A justification for the formula has to be provided. It is not clear what it is based on :</p> <p>Factor A</p> <ul style="list-style-type: none"> <li>- Why are non-fuels non-renewable (eg non-renewable electricity such as nuclear electricity) not taken into account?</li> <li>- why the formula no takes into account renewable / non-renewable electricity as it is done for fuel?</li> </ul> <p>Factor B</p> <ul style="list-style-type: none"> <li>- the choice of the 0.8 should be detailed?</li> </ul> <p>Factor C</p> <ul style="list-style-type: none"> <li>-what exactly is taken into account in the manufacturing phase (starting at lumbering or delivery of tree at manufacturing plant? Is transport taken into account?</li> </ul> <p>The technical report refers to the Nordic Ecolabel background paper but explanations are not sufficiently to answer the above issues</p>	<p>Multiplayer wood floorings consume more energy than solid wood flooring as they need to be pressed and glued. These steps are not included in the solid wood floorings.</p> <p>Information about the factors A, B and C will be included in further detail in both: the TR4.0 and the user manual.</p>
<p><b><u>6. VOC emissions from the floor coverings:</u></b></p>	<p>We cannot tell whether the subtraction of the acetic acid emissions is correct, nor how the wording can be clearer to allow the calculation of the value without duplicating the testing.</p> <p>The subtraction should be discussed with the market actors</p>	<p><b>Actions</b></p> <p>Subtraction of acetic acid is kept as several members of the industry confirms this need.</p>
	<p>Carcinogenic substances have not been found in the comparative tests carried out by consumer associations. The only substance classified as VOC and being carcinogenic that could be of relevance is the formaldehyde, which is already restricted under criterion 6.</p> <p>However, following the precautionary principle, the requirement on carcinogenic substances should be maintained under this criterion, in our view.</p>	<p><b>Actions</b></p> <p>Re-introducing the carcinogenic threshold &lt; 0.001mg/m<sup>3</sup></p>

	The restriction should be maintained in case a new product with carcinogenic substances is developed. A loosening could be interpreted as a step backward and a slackening in the policy	
	Moreover acetaldehyde is potentially carcinogenic substance according to the Cancer International research center. These substances may come from wood floorings and wood panels. In order to improve the quality of the indoor air some threshold are proposed by the national agency French Agency	<b>Actions</b> No specific restriction set
	We cannot tell whether the furniture example can be followed concerning the inclusion of the conditions for packaging, delivery and handling of the samples are indicated following, replacing ISO 16000 by CEN/TS 16516.	<b>Actions</b>
	The conditions for packaging, delivery and handling should be included so the perimeter is as large as possible. the CEN/TS 16516 was more recently published than ISO 16000, the Nordic swam kept the two methods	Requirements on the conditions are kept in the criterion wording even if they are also described in the standard suggested for measuring the emissions of VOC
	JRC writes that a valid certificate from relevant indoor climate labels can also be used as proof of compliance if the indoor climate label fulfils the requirements of this criterion and if it is judged by the competent body to be equivalent.  We agree: if such certificates are based on comparable criteria and if they are reliable/independent etc., then we see no objection to use them as proof of compliance. However, this may be difficult to judge for individual CBs	<b>Actions</b> Inclusion of the term "or equivalent" to be further developed in the user manual leaving the final decision of equivalence between the methods to be taken by the competent bodies.
<b><u>7. Emissions of formaldehyde from the floor coverings:</u></b>	We understand that a requirement of 50% E1 seems already quite stringent. From JRC's information it becomes clear that feedback from stakeholders confirmed the feasibility of the formaldehyde emission criterion. Also, we learned that low emission values are difficult for MDF boards. This justifies the proposed two levels of ambition.	<b>Actions</b> No further action



	<p>Cf 3 criterion 5: use phase: emissions of formaldehyde from floor coverings (page 31). This threshold "5mg formaldehyde/100g dry substance for MDF board and 4 mg/100g dry substance" are used by the Nordic swam</p> <p>The requirements should be in accordance with the French regulation on the labelling of the indoor air pollution of building and décor product. For example, the emissions of formaldehyde must be inferior to 10µg/m<sup>3</sup>. The labelling takes into account 11 compounds and not just formaldehyde.</p> <p>The criteria for the assessment and verification could be discussed with the market actors</p>	<p><b>Actions</b></p> <p>French regulation sets minimum values while Ecolabel set thresholds of excellence.</p>
<p><b><u>8. Fitness for use:</u></b></p>	<p>We cannot suggest standards for cork flooring and bamboo flooring, and neither can we tell which is the proper threshold for parquet, as we are not familiar with these issues.</p> <p>No advice</p>	<p><b>Actions</b></p> <p>No further action proposed</p>
<p><b><u>8. Reparability and extended guarantee:</u></b></p>	<p>We suggest providing the information to both the end user, as well as the person who installs the flooring, as recommended by JRC. Thus, an 'extended product life time' is enhanced more.</p> <p>The information should be given to the end user and the person who installs the flooring. The end user should be aware of the fact that he can benefit from reparability and extended guarantee. The person who installs the flooring as the way the flooring is installed can interfere with the reparability or the guarantee.</p> <p>It would be better to let them available both on the website of the manufacturer and in the consumer instructions or the manufacturer's website</p> <p>We also agree with a five year guarantee.</p>	<p><b>Actions</b></p> <p>Inclusion of manufacturer website and consumer instruction as examples of means of communication as for these requirements</p>

<p><b><u>10: Sustainable wood, wood-based, cork, cork-based bamboo and bamboo-based materials : additional remark</u></b></p>	<p>Not surprisingly, The Netherlands do not support criterion 1, as this requirement is based on the principle (a.o.) <i>'All virgin wood, cork and bamboo shall be covered by valid sustainable forest management certificates issued by an independent third party certification scheme such as FSC, PEFC or equivalent.'</i> See for instance the Minutes of the 2nd Ad Hoc Working Group EU Ecolabel furniture (May 2014):</p> <p><i>"The approach taken by the Dutch government regarding the origin of wood was mentioned where 'Procurement Criteria for Timber' have been developed with Dutch stakeholders. The Dutch government does not take FSC or PEFC as a guarantee that the wood does not come from controversial sources, but instead asks advice from an independent panel of experts (Timber Procurement Assessment Committee). This panel assesses, according to the Procurement standards, certification schemes such as FSC and PEFC across the world. The panel has found that the Malaysian PEFC scheme did not meet the Procurement standards".</i></p> <p>The Malaysian Timber Certification System PEFC-Malaysia is temporarily accepted until (mid) 2016. It is important what the results of the re-evaluation of the Malaysian Timber Certification System PEFC-Malaysia after two years will be.</p>	
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