

Safety fences as safety component under the Machinery Directive 2006/42/EC

Note 1: This document has been agreed on the Machinery Directive ADCO Group meeting the 9th and 10th October 2014 in Cracow (Poland).

Note 2: this document, as MD WG-2014.04-EN rev.1, has been approved at the Machinery Working Group meeting on 5-6 November 2014.

Introduction

Safety fences are one element in the tool box of safety components to fulfill the requirements of the Machinery Directive 2006/42/EC in order to provide compliant and safe machinery on the market. The intention of this document is therefore to give guidance on safety fences in terms of their classification as Safety Components within the meaning of the Machinery Directive 2006/42/EC. The document focuses on the conditions under which a safety fence (Fig. 1) can be regarded as independently placed on the market. Three scenarios for placing safety fences on the market are considered and clarified by this document.

It is emphasised that the question under which conditions safety fences can be regarded as independently placed on the market does not change the fundamental principle of the Machinery Directive that all machinery must be supplied with all protective devices when first placed on the market. Furthermore, it is always the machinery manufacturer's responsible for placing on the market only machinery in conformity with the relevant requirements of the Machinery Directive 2006/42/EC and to provide the EC Declaration of Conformity and to affix the CE-marking on the machine.



Fig.: 1 Safety fence (Hans Georg Brühl GmbH)

Background

Safety components referred to in Article 1 (1) (c) of Machinery Directive 2006/42/EC are defined as follows:

Safety component means a component:

- which serves to fulfill a safety function,
- which is independently placed on the market,
- the failure and/or malfunction of which endangers the safety of persons, and
- which is not necessary in order for the machinery to function, or for which normal components may be substituted in order for the machinery to function.

As defined in Article 1 (1) (c) of Machinery Directive 2006/42/EC, Safety Components are components intended by the component manufacturer to be fitted to machinery in order to fulfill a protective role, that is, a safety function. Safety fences are regarded as guards. They can be used as one of the means to prevent access to danger zones in or around machinery. In many cases, the safety fence acts as a barrier in both directions in order to protect against two or more risks simultaneously. For example, a safety fence may be fitted both to prevent persons entering a danger zone or to initiate the shutdown of the machinery in case of a person entering the danger zone,

and also to prevent ejected objects from reaching persons in the environment of the machinery.

Taking into account the nature of a safety fence regarding its function as a Safety Component, the fence can in principle fulfil its protective role only as an integral whole. Regarding the meaning of the “safety function”, to be fulfilled by a safety fence, it is the manner and intention when a safety fence is placed on the market. In most cases individual “fence elements” (see Scenario 3) are not intended in themselves to provide a safety function, they only do so when they are collected together for a specific purpose. This is different to other listed (Annex V) safety components such as safety interlocks which are a discrete item, but are intended to provide a safety function in themselves. However, even single parts such as a door or a single element can be regarded as a safety component, depending on its specific application (e.g. to prevent access to a danger zone).

Scenario 1: Safety fences for whose design and construction the machinery manufacturer has planning responsibility

If a safety fence is constructed precisely in accordance with specifications from a machinery manufacturer for a particular machine, either by a third party or by the manufacturer itself, for example from individual safety fence components, and placed on the market together with said machine, it is not a Safety Component within the meaning of the Machinery Directive. The safety fence must be deemed a component or part of the machine, and is placed on the market together with the machine as a single unit.

Explanation:

If, in a case falling within Scenario 1, a third party (fence manufacturer) is commissioned to supply the safety fence for a particular machine, and the machinery manufacturer itself is solely responsible for its design (that is the machinery manufacturer has specified the geometry of the fence, the materials to be used, the mesh dimensions etc), the fence manufacturer will be wholly or partly unable to satisfy the obligations of Art. 5 of the Machinery Directive 2006/42/EC regarding the placing on the market of a Safety Component. The machinery manufacturer is in charge of planning and thus, as it is understood legally to be the "manufacturer" of the machine, and is also responsible for the safety fence forming part of the machine.

The fence manufacturer, here only performing a specific order, itself bears no responsibility for the planning of the safety fence. The fence manufacturer in such

cases is accordingly dependent on others for planning instructions and acts solely as the machinery manufacturer's "extended workbench" (as a sub-contractor).

Given the above, the passing on of the safety fence to the machinery manufacturer by the fence manufacturer cannot be assumed to constitute any independent and/or separate placing on the market within the meaning of the relevant machinery legislation; on the contrary, it is a purely dependent action carried out in the course of manufacture of the machine/assembly under the control of the machinery manufacturer. It is precisely because there is no such separate placing on the market that such safety fences, for whose planning the machinery manufacturer bears the principal responsibility, that they do not satisfy the definition contained in Art. 2 c) of the Machinery Directive 2006/42/EC and so are not Safety Components in the legal sense, even if they are intended to perform safety functions.

The allocation of responsibility as described above will not change in other respects even if the machinery manufacturer makes use of the fence configuration software for example provided by one of several fence manufacturers during the planning of the safety fence. Such planning tools constitute merely "workmanlike" assistance in the planning of safety fences, and do not result in any shift in planning control or responsibility.

Scenario 2: Safety fences for whose design and construction the fence manufacturer has planning responsibility

Safety fences which are designed, constructed and placed on the market separately as complete items by fence manufacturers shall be regarded as Safety Components within the meaning of the Machinery Directive and must therefore bear the CE marking, and an EC Declaration of Conformity (DoC) and User Instructions (in the appropriate language) must be issued and enclosed with them. This also applies to those safety fences placed on the market by a manufacturer independently of any particular machine, split up into their individual parts but as complete items in the manner of a construction kit (system components, modular protective fences) and only assembled at their intended destination.

Explanation:

In contrast to those cases covered by Scenario 1, it is not the machinery manufacturer but instead the fence manufacturer (who may, or may not be commissioned by the former) who designs the safety fence for a machine/assembly.

The fence manufacturer concerned shall be responsible for the planning of the safety fence.

It logically follows as an essential condition that before the fence manufacturer is able to design the safety fence:

1. either the machinery manufacturer confers upon the fence manufacturer full design/planning control in such a way as to ensure that the latter is provided by the machinery manufacturer with all planning-relevant information about the dangers/risks presented by the machine which have not already been sufficiently minimised by incorporating appropriate safety measures into the machine, that is, adequate information is provided about the risks which the protective fence is intended to eliminate, or
2. the fence manufacturer itself obtains planning-relevant information for particular types of machine and designs on its own initiative suitable safety fences for those machine types and places them on the market (ready to install).

In such cases, the fence manufacturer no longer acts as the machinery manufacturer's extended workbench (sub-contractor), but instead on its own initiative and responsibility.

The fence manufacturer is here not only *de facto*, but also *de jure*, the "manufacturer" of the safety fence. The passing on of the safety fence to the machinery manufacturer must be deemed as a separate placing on the market, and the safety fence as such as a Safety Component within the meaning of the definition in Art. 2 c) of the Machinery Directive 2006/42/EC. The fence manufacturer must conduct the EC conformity assessment procedure and affix the CE marking, providing the DoC and instructions.

The approach does not differ even if the safety fence designed by the fence manufacturer is supplied to the machinery manufacturer as a complete unit, though broken down into its constituent parts, which the machinery manufacturer only has to assemble (according to comprehensive instructions which must be provided by the manufacturer of the safety fence). The mere assembly of the construction kit does not involve any act of planning or design which could result in a shift of the design/planning responsibility for the entire safety fence from the fence manufacturer to the machinery manufacturer.

Scenario 3: Individual components of safety fences and combinations of individual components without any safety function

Individual components/elements of safety fences which are supplied separately are simple components, but not Safety Components, because they cannot as such (that is, on their own) ensure any safety function. No CE marking shall be affixed to such components.

Individual fence elements which are either as such or in combination with each other neither capable nor intended to perform any safety function within the meaning of the Machinery Directive 2006/42/EC are also simple components. They shall not be classified as Safety Components and no CE shall be affixed to them. Their assembly shall not result in the creation of any safety barrier, nor any safety fence.

Explanation:

Ensuring a safety function within the meaning of Art. 2 c) of the Machinery Directive 2006/42/EC can in the case of safety fences only be achieved by the safety fence as a whole integrated with the machinery. Only the complete item can for example prevent access to a danger zone. Accordingly, it is only the safety fence in its entirety which can be used as the basis for deciding in an individual case whether a safety fence constitutes a Safety Component as defined by relevant machinery legislation.

As a general rule, individual components and elements of safety fences (for example, fence posts, grille elements) are incapable in themselves of performing any safety function and do not constitute Safety Components within the meaning of the Machinery Directive as long as they are supplied as separate individual items. An exception of the rule applies, if single parts such as a door on an access route to the machine or a single element with regard to its specific application, can for instance prevent the access to a danger zone, in this sense these single components fulfil a safety function.