



Brussels, 1.10.2019  
C(2019) 2120 final

**COMMISSION REGULATION (EU) .../...**

**of 1.10.2019**

**laying down ecodesign requirements for refrigerating appliances pursuant to  
Directive 2009/125/EC of the European Parliament and of the Council**

**and repealing Commission Regulation (EC) No 643/2009**

(Text with EEA relevance)

{SEC(2019) 333 final} - {SWD(2019) 341 final} - {SWD(2019) 342 final}

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THE EUROPEAN COMMISSION,

Having regard to Article 114 of the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products<sup>1</sup>, and in particular Article 15(1) thereof,

Whereas:

- (1) Pursuant to Directive 2009/125/EC the Commission should set ecodesign requirements for energy-related products which account for significant volumes of sales and trade in the Union and which have a significant environmental impact and presenting significant potential for improvement through design in terms of their environmental impact, without entailing excessive costs.
- (2) The Communication from the Commission COM(2016)773<sup>2</sup> (ecodesign working plan) established by the Commission in application of Article 16(1) of Directive 2009/125/EC sets out the working priorities under the ecodesign and energy labelling framework for the period 2016-2019. The ecodesign working plan identifies the energy-related product groups to be considered as priorities for the undertaking of preparatory studies and eventual adoption of implementing measures, as well as the review of Commission Regulation (EC) No 643/2009<sup>3</sup> and Commission Delegated Regulation (EU) No 1060/2010<sup>4</sup>.
- (3) Measures from the ecodesign working plan have an estimated potential to deliver a total in excess of 260 TWh of annual final energy savings in 2030, which is equivalent to reducing greenhouse gas emissions by approximately 100 million tonnes per year in 2030. Refrigerating appliances is one of the product groups listed in the ecodesign working plan, with an estimated 10 TWh of annual final energy savings in 2030.

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<sup>1</sup> OJ L 285, 31.10.2009, p. 10.

<sup>2</sup> Communication from the Commission. Ecodesign working plan 2016-2019, COM(2016)773 final, 30.11.2016.

<sup>3</sup> Commission Regulation (EC) No 643/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for household refrigerating appliances (OJ L 191, 23.7.2009, p. 53).

<sup>4</sup> Commission Delegated Regulation (EU) No 1060/2010 of 28 September 2010 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of household refrigerating appliances (OJ L 314, 30.11.2010, p. 17).

- (4) The Commission established ecodesign requirements for household refrigerating appliances in Commission Regulation (EC) No 643/2009<sup>5</sup> and pursuant to that Regulation, the Commission should regularly review the Regulation in the light of technological progress.
- (5) The Commission has reviewed Regulation (EC) No 643/2009 and analysed the technical, environmental and economic aspects of refrigerating appliances as well as real-life user behaviour. The review was carried out in close cooperation with stakeholders and interested parties from the Union and third countries. The results of the review were made public and presented to the Consultation Forum established by Article 18 of Directive 2009/125/EC.
- (6) The review shows the benefit of continued and improved requirements, adapted to the technological progress of refrigerating appliances. Specifically, it shows that energy efficiency requirements for wine storage appliances can be introduced and that correction factors can be eliminated or significantly reduced.
- (7) The annual energy consumption of products subject to this Regulation in the Union was estimated at 86 TWh in 2015, corresponding to 34 million tonnes of CO<sub>2</sub> equivalent greenhouse gas emissions. The energy consumption of refrigerating appliances in a business-as-usual scenario is projected to decrease by 2030. However, this decrease is expected to slow down unless the existing ecodesign requirements are updated.
- (8) The environmental aspects of the refrigerating appliances in the scope of this Regulation that have been identified as significant for the purposes of this Regulation are energy consumption in the use phase, increased energy use over the product life due to leaking door gaskets, poor reparability and suboptimal food preservation options resulting in avoidable food waste.
- (9) The Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions COM(2015)0614 final<sup>6</sup> (circular economy action plan) and the ecodesign working plan underline the importance of using the ecodesign framework to support the move towards a more resource efficient and circular economy. Directive 2012/19/EU of the European Parliament and of the Council<sup>7</sup> refers to Directive 2009/125/EC and indicates that ecodesign requirements should facilitate the re-use, dismantling and recovery of waste electrical and electronic equipment (WEEE) by tackling the issues upstream. This Regulation should therefore lay down appropriate requirements for this.
- (10) Refrigerating appliances with a direct sales function should be subject to a separate ecodesign regulation.

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<sup>5</sup> Commission Regulation (EC) No 643/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for household refrigerating appliances (OJ L 191, 23.07.2009, p. 53).

<sup>6</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Closing the loop - An EU action plan for the circular economy, COM/2015/0614 final, 02.12/2015.

<sup>7</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (OJ L 197, 24.7.2012, p. 38).

- (11) Chest freezers, including professional chest freezers, should be in the scope of this Regulation, as they are out of the scope of the Commission Regulation (EU) 2015/1095<sup>8</sup> and can be used in other environments than professional environments.
- (12) Wine storage appliances and low noise refrigerating appliances (such as minibars), including those with transparent doors, do not have a direct sales function. Wine storage appliances are usually either used in household environments or in restaurants, whereas minibars are usually used in hotel rooms. Therefore, wine storage appliances and minibars, including those with transparent doors should be covered by this Regulation.
- (13) The relevant product parameters should be measured using reliable, accurate and reproducible methods. Those methods should take into account recognised state-of-the-art measurement methods including, where available, harmonised standards adopted by the European standardisation bodies, as listed in Annex I to Regulation (EU) No 1025/2012 of the European Parliament and of the Council<sup>9</sup>.
- (14) In accordance with Article 8 of Directive 2009/125/EC, this Regulation should specify the applicable conformity assessment procedures.
- (15) To facilitate compliance checks, manufacturers, importers or authorised representatives should provide information in the technical documentation referred to in Annexes IV and V to Directive 2009/125/EC in so far as that information relates to the requirements laid down in this Regulation.
- (16) For market surveillance purposes, manufacturers, importers or authorised representatives should be allowed to refer to the product database if the technical documentation as per Commission Delegated Regulation (EU) 2019/XXX<sup>10</sup> *[OP – please enter the number of Regulation C(2019) 1806 on energy labelling for household refrigerating appliances]* contains the same information.
- (17) To improve the effectiveness of this Regulation and to protect consumers, products that automatically alter their performance in test conditions to improve the declared parameters should be prohibited.
- (18) In addition to the legally binding requirements laid down in this Regulation, indicative benchmarks for best available technologies should be identified to make information on the products' environmental performance over their life cycle subject to this Regulation widely available and easily accessible, in accordance with Directive 2009/125/EC, Annex I, part 3, point (2).
- (19) A review of this Regulation should assess the appropriateness and effectiveness of its provisions in achieving its goals. The timing of the review should allow for all provisions to be implemented and show an effect on the market.

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<sup>8</sup> Commission Regulation (EU) 2015/1095 of 5 May 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers (OJ L 177, 8.7.2015, p. 19).

<sup>9</sup> Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p. 12).

<sup>10</sup> Commission Delegated Regulation (EU) 2019/XXX *[OP – please enter the full OJ-L references of Regulation C(2019) 1806 on energy labelling for household refrigerating appliances]*

- (20) Regulation (EC) No 643/2009 should therefore be repealed.
- (21) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 19(1) of Directive 2009/125/EC.

HAS ADOPTED THIS REGULATION:

#### *Article 1*

##### **Subject matter and scope**

1. This Regulation establishes ecodesign requirements for the placing on the market of or the putting into service of electric mains-operated refrigerating appliances with a total volume of more than 10 litres and less than or equal to 1500 litres.
2. This Regulation does not apply to:
  - (a) professional refrigerated storage cabinets and blast cabinets, with the exception of professional chest freezers;
  - (b) refrigerating appliances with a direct sales function;
  - (c) mobile refrigerating appliances;
  - (d) appliances where the primary function is not the storage of foodstuffs through refrigeration.

#### *Article 2*

##### **Definitions**

For the purpose of this Regulation, the following definitions shall apply:

- (1) 'mains' or 'electric mains' means the electricity supply from the grid of 230 ( $\pm 10$  %) volt of alternating current at 50 Hz;
- (2) 'refrigerating appliance' means an insulated cabinet with one or more compartments that are controlled at specific temperatures, cooled by natural or forced convection whereby the cooling is obtained by one or more energy consuming means;
- (3) 'compartment' means an enclosed space within a refrigerating appliance, separated from other compartment(s) by a partition, container, or similar construction, which is directly accessible through one or more external doors and may itself be divided into sub-compartments. For the purpose of this Regulation, unless specified otherwise, compartment refers to both compartments and sub-compartments;
- (4) 'external door' is the part of a cabinet that can be moved or removed to at least allow the load to be moved from the exterior to the interior or from the interior to the exterior of the cabinet;
- (5) 'sub-compartment' means an enclosed space in a compartment having a different operating temperature range from the compartment in which it is located;
- (6) 'total volume' (V) means the volume of the space within the inside liner of the refrigerating appliance, equal to the sum of the compartment volumes, expressed in dm<sup>3</sup> or litres;
- (7) 'compartment volume' (V<sub>c</sub>) means the volume of the space within the inside liner of the compartment, expressed in dm<sup>3</sup> or litres;
- (8) 'professional refrigerated storage cabinet' means an insulated refrigerating appliance integrating one or more compartments accessible via one or more doors or drawers,

capable of continuously maintaining the temperature of foodstuffs within prescribed limits at chilled or frozen operating temperature, using a vapour compression cycle, and used for the storage of foodstuffs in non-household environments but not for the display to or access by customers, as defined in Commission Regulation (EU) 2015/1095<sup>11</sup>;

- (9) 'blast cabinet' means an insulated refrigerating appliance primarily intended to rapidly cool hot foodstuffs to below 10 °C in the case of chilling and below – 18 °C in the case of freezing, as defined in Commission Regulation (EU) 2015/1095;
- (10) 'professional chest freezer' means a freezer in which the compartment(s) is accessible from the top of the appliance or which has both top-opening type and upright type compartments but where the gross volume of the top-opening type compartment(s) exceeds 75 % of the total gross volume of the appliance, used for the storage of foodstuffs in non-household environments;
- (11) 'freezer' means a refrigerating appliance with only 4-star compartments;
- (12) 'frozen compartment' means a compartment type with a target temperature equal to or below 0 °C; that is a 0-star, 1-star, 2-star, 3-star or 4-star compartment, as set out in Annex III, Table 3;
- (13) 'compartment type' means the declared compartment type in accordance with the refrigerating performance parameters  $T_{\min}$ ,  $T_{\max}$ ,  $T_c$  and others set out in Annex III, Table 3;
- (14) 'minimum temperature' ( $T_{\min}$ ) means the minimum temperature inside a compartment during storage testing, as set out in Annex III, Table 3;
- (15) 'maximum temperature' ( $T_{\max}$ ) means the maximum temperature inside a compartment during storage testing, as set out in Annex III, Table 3;
- (16) 'target temperature' ( $T_c$ ) means the reference temperature inside a compartment during testing, as set out in Annex III, Table 3, and is the temperature for testing energy consumption expressed as the average over time and over a set of sensors;
- (17) '0-star compartment' and 'ice-making compartment' means a frozen compartment with a target temperature and storage conditions of 0 °C, as set out in Annex III, Table 3;
- (18) '1-star compartment' means a frozen compartment with a target temperature and storage conditions of -6 °C, as set out in Annex III, Table 3;
- (19) '2-star compartment' means a frozen compartment with a target temperature and storage conditions of -12 °C, as set out in Annex III, Table 3;
- (20) '3-star compartment' means a frozen compartment with a target temperature and storage conditions of -18 °C, as set out in Annex III, Table 3;
- (21) 'freezer compartment' or '4-star compartment' means a frozen compartment with a target temperature and storage conditions of -18 °C and which fulfils the requirements for the freezing capacity;

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<sup>11</sup> Commission Regulation (EU) 2015/1095 of 5 May 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers (OJ L 177, 8.7.2015, p. 19).

- (22) ‘freezing capacity’ means the amount of fresh foodstuffs that can be frozen in a freezer compartment in 24 h; it shall not be lower than 4,5 kg per 24 h per 100 litres of volume of the freezer compartment, with a minimum of 2,0 kg/24 h;
- (23) ‘refrigerating appliance with a direct sales function’ means a refrigerating appliance used for the functions of displaying and selling items at specified temperatures below the ambient temperature to customers, accessible directly through open sides or via one or more doors or drawers, or both, including also cabinets with areas used for storage or assisted serving of items not accessible by the customers and excluding minibars and wine storage appliances, as defined in Commission Regulation (EU) 2019/XXX<sup>12</sup> *[OP - please enter the number of Regulation C(2019) 2127 on ecodesign for refrigerating appliances with a direct sales function]*;
- (24) ‘minibar’ means a refrigerating appliance with a total volume of maximum 60 litres, which is primary intended for the storage and sales of foodstuffs in hotel rooms and similar premises;
- (25) ‘wine storage appliance’ means a dedicated refrigerating appliance for the storage of wine, with precision temperature control for the storage conditions and target temperature of a wine storage compartment, as defined in Annex III, Table 3, and equipped with anti-vibration measures;
- (26) ‘dedicated refrigerating appliance’ means a refrigerating appliance with only one type of compartment;
- (27) ‘wine storage compartment’ means an unfrozen compartment with a target temperature of 12 °C, an internal humidity range from 50 % to 80 % and storage conditions ranging from 5 °C to 20 °C, as defined in Annex III, Table 3;
- (28) ‘mobile refrigerating appliance’ means a refrigerating appliance that can be used where there is no access to the mains electricity grid and that uses extra low-voltage electricity (<120V DC) or fuel or both as the energy source for the refrigeration functionality, including a refrigerating appliance that, in addition to extra low voltage electricity or fuel, or both, can be electric mains operated. An appliance placed on the market with an AC/DC converter is not a mobile refrigerating appliance;
- (29) ‘foodstuffs’ means food, ingredients, beverages, including wine, and other items primarily used for consumption which require refrigeration at specified temperatures;
- (30) ‘energy efficiency index’ (EEI) means an index number for the relative energy efficiency of a refrigeration appliance expressed in percentage, as set out in point 5 of Annex III;
- (31) ‘low noise refrigerating appliance’ means a refrigerating appliance without vapour compression and with airborne acoustical noise emission lower than 27 A-weighted decibel referred to 1 pico watt (dB(A) re 1 pW);
- (32) ‘airborne acoustical noise emission’ means the sound power level of a refrigerating appliance, expressed in A-weighted decibel referred to 1 pico watt (dB(A) re 1 pW);
- (33) ‘combi appliance’ means a refrigerating appliance that has more than one compartment type of which at least one is an unfrozen compartment;

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<sup>12</sup> Commission Regulation (EU) 2019/XXX *[OP – please enter the full OJ-L references of Regulation C(2019) 2127 on ecodesign for refrigerating appliances with a direct sales function]*

- (34) ‘unfrozen compartment’ means a compartment type with a target temperature equal to or above 4 °C; that is a pantry, wine storage, cellar or fresh food compartment with storage conditions and target temperatures, as set out in Annex III, Table 3;
- (35) ‘pantry compartment’ means an unfrozen compartment with a target temperature of 17 °C and storage conditions ranging from 14 °C to 20 °C, as set out in Annex III, Table 3;
- (36) ‘cellar compartment’ means an unfrozen compartment with a target temperature of 12 °C and storage conditions ranging from 2 °C to 14 °C, as set out in Annex III, Table 3;
- (37) ‘fresh food compartment’ means an unfrozen compartment with a target temperature of 4 °C and storage conditions ranging from 0 °C and 8 °C, as set out in Annex III, Table 3;
- (38) ‘ambient controlled anti-condensation heater’ means an anti-condensation heater where the heating capacity depends on either the ambient temperature or the ambient humidity or both;
- (39) ‘anti-condensation heater’ means a heater which prevents condensation on the refrigeration appliance;
- (40) ‘auxiliary energy’ ( $E_{aux}$ ) means the energy used by an ambient controlled anti-condensation heater, expressed in kWh/a.

For the purposes of the Annexes, additional definitions are set out in Annex I.

#### *Article 3*

### **Ecodesign requirements**

The ecodesign requirements set out in Annex II shall apply from the dates indicated therein.

#### *Article 4*

### **Conformity assessment**

1. The conformity assessment procedure referred to in Article 8 of Directive 2009/125/EC shall be the internal design control system set out in Annex IV to that Directive or the management system set out in Annex V to that Directive.
2. For the purposes of conformity assessment pursuant to Article 8 of Directive 2009/125/EC, the technical documentation shall contain a copy of the product information provided in accordance with point 4 of Annex II, and the details and the results of the calculations set out in Annex III to this Regulation.
3. Where the information included in the technical documentation for a particular model has been obtained:
  - (a) from a model that has the same technical characteristics relevant for the technical information to be provided but is produced by a different manufacturer, or
  - (b) by calculation on the basis of design or extrapolation from another model of the same or a different manufacturer, or both,

the technical documentation shall include the details of such calculation, the assessment undertaken by the manufacturer to verify the accuracy of the calculation



and, where appropriate, the declaration of identity between the models of different manufacturers.

The technical documentation shall include a list of all equivalent models, including the model identifiers.

4. The technical documentation shall include the information in the order and as set out in Annex VI of Regulation (EU) 2019/XXX *[OP - Please insert here the number of Regulation C(2019) 1806]*. For market surveillance purposes, manufacturers, importers or authorised representatives may, without prejudice to Annex IV, point 2(g) of Directive 2009/125/EC, refer to the technical documentation uploaded to the product database which contains the same information laid down in Regulation (EU) 2019/XXX *[OP - Please insert here the number of Regulation C(2019) 1806]*.

#### *Article 5*

### **Verification procedure for market surveillance purposes**

Member States shall apply the verification procedure laid down in Annex IV when performing the market surveillance checks referred to in point 2 of Article 3 of Directive 2009/125/EC.

#### *Article 6*

### **Circumvention**

The manufacturer, importer or authorised representative shall not place on the market products designed to be able to detect they are being tested (e.g. by recognising the test conditions or test cycle), and to react specifically by automatically altering their performance during the test with the aim of reaching a more favourable level for any of the parameters declared by the manufacturer, importer or authorised representative in the technical documentation or included in any of the documentation provided.

The energy consumption of the product and any of the other declared parameters shall not deteriorate after a software or firmware update when measured with the same test standard originally used for the declaration of conformity, except with explicit consent of the end-user prior to update.

#### *Article 7*

### **Indicative benchmarks**

The indicative benchmarks for the best-performing products and technologies available on the market at the time of adopting this Regulation are set out in Annex V.

#### *Article 8*

### **Review**

The Commission shall review this Regulation in the light of technological progress and present the results of this assessment, including, if appropriate, a draft revision proposal, to the Consultation Forum by *[OP please insert date – 6 years after its entry into force]*.

This review shall in particular assess:

- (a) the energy efficiency index requirements for low noise refrigerating appliances and for wine storage appliances, including those with transparent doors;

- (b) the appropriateness to set energy efficiency index requirements for low noise combi appliances with frozen compartment(s);
- (c) the treatment of professional chest freezers;
- (d) the level of the tolerances;
- (e) the appropriateness of a mandatory sound signal for long door openings;
- (f) the compensation factors and the modelling parameters;
- (g) the appropriateness to set additional resource efficiency requirements for products in accordance with the principles of the circular economy, including whether more spare parts should be included;
- (h) the appropriateness of including other auxiliary devices or functions than the ambient controlled anti-condensation heater in the determination of the auxiliary energy;
- (i) the methodology for taking automatic and intelligent defrosting into account.

#### *Article 9*

#### **Repeal**

Commission Regulation (EC) No 643/2009 shall be repealed with effect from 1 March 2021.

#### *Article 10*

#### **Entry into force and application**

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 1 March 2021. However, Article 6 shall apply from *[OP – please insert the day of entry into force of this Regulation]*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 1.10.2019

*For the Commission*  
*The President*  
*Jean-Claude JUNCKER*