Commission Regulation (EU) No 327/2011 of 30 March 2011 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for fans driven by motors with an electric input power between 125 W and 500 kW (Text with EEA relevance)

COMMISSION REGULATION (EU) No 327/2011

of 30 March 2011

implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for fans driven by motors with an electric input power between 125 W and 500 kW

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to 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[(1)] and in particular Article 15(1) thereof,

After consulting the Ecodesign Consultation Forum,

Whereas:

(1) Under Directive 2009/125/EC ecodesign requirements are to be set by the Commission for energy-related products representing significant volumes of sales and trade, having a significant environmental impact and presenting significant potential for improvement in terms of their environmental impact without entailing excessive costs.

(2) Article 16(2) of Directive 2009/125/EC provides that in accordance with the procedure referred to in Article 19(3) and the criteria set out in Article 15(2), and after consulting the Consultation Forum, the Commission will, as appropriate, introduce an implementing measure for products using electric motor systems.

(3) Fans driven by motors with an electric input power between 125 W and 500 kW are an important part of various gas handling products. Minimum energy efficiency requirements have been established for electric motors in Commission Regulation (EC) No 640/2009 of 22 July 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for electric motors[(2)], including electric motors equipped with variable speed drives. They also apply to those motors which are part of a motor-fan system. However, many fans covered by this Regulation are used in combination with motors not covered by Regulation (EC) No 640/2009.

(4) Total electricity consumption of fans driven by motors with an electric input power between 125 W and 500 kW is 344 TWh per year, rising to 560 TWh in 2020 if current Union market trends persist. The cost-efficient improvement potential through design

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is about 34 TWh per year in 2020, which corresponds to 16 Mt of CO_2 emissions. Consequently, fans with an electric input power between 125 W and 500 kW represent a product for which ecodesign requirements should be established.

(5) Many fans are integrated in other products without being separately placed on the market or put into service within the meaning of Article 5 of Directive 2009/125/EC and of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC[(3)]. To achieve most of the cost-efficient energy-saving potential and facilitate enforcement of the measure, fans between 125 W and 500 kW integrated in other products should also be subject to the provisions of this Regulation.

(6) Many fans are part of ventilation systems installed in buildings. National legislation based on Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings[(4)], may set new stricter energy efficiency requirements on those ventilation systems, using the calculation and measurement methods defined in this regulation as regards the efficiency of the fan.

(7) The Commission has carried out a preparatory study which analysed the technical, environmental and economic aspects of fans. The study was developed together with stakeholders and interested parties from the Union and third countries, and the results have been made publicly available. Further work and consultations showed that the scope could be further extended subject to exemptions being made for particular applications where the requirements would not be appropriate.

(8) The preparatory study showed that fans driven by motors with an input power between 125 W and 500 kW are placed on the Union market in large quantities, with their use-phase energy consumption being the most significant environmental aspect of all life-cycle phases.

(9) The preparatory study shows that electricity consumption in use is the only significant ecodesign parameter relating to product design as laid down in Directive 2009/125/EC.

(10) Improvements in the energy efficiency of fans driven by motors with an electric input power between 125 W and 500 kW should be achieved by applying existing non-proprietary cost-effective technologies that can reduce the total combined costs of purchasing and operating them.

(11) Ecodesign requirements should harmonise the energy efficiency requirements for fans driven by motors with an electric input power between 125 W and 500 kW throughout the Union, thus contributing to the functioning of the internal market and to the improvement of the environmental performance of these products.

(12) Small fans (indirectly) driven by an electric motor between 125 W and 3 kW which primarily serves other functionalities are not within the scope. For illustration a small fan to cool the electric motor in a chain saw is not within the scope, even if the motor of the chain saw itself (which is also driving the fan) is above 125 W.

(13) An appropriate timeframe should be provided for manufacturers to redesign products and to adapt production lines. The timing should be such that negative impacts on

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the supply of fans driven by motors with an electric input power between 125 W and 500 kW are avoided, and cost impacts for manufacturers, in particular small and medium-sized enterprises, are taken into account, while ensuring timely achievement of the objectives of this Regulation.

(14) A review of this Regulation is foreseen no later than 4 years after its entry into force. The review process may be initiated earlier if evidence reaches the Commission that warrants this. The review should in particular assess the setting of technology independent requirements, the potential of the use of variable speed drives (VSD) and the necessity of the number and scope of exemptions as well as the inclusion of fans below 125 W electric input power.

(15) The energy efficiency of fans driven by motors with an electric input power between 125 W and 500 kW should be determined through reliable, accurate and reproducible measurement methods, which take into account the recognised state of the art, including, where available, harmonised standards adopted by the European standardisation bodies, as listed in Annex I to Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services[(5)].

(16) This Regulation should increase the market penetration of technologies that limit the life-cycle environmental impact of fans driven by motors with an electric input power between 125 W and 500 kW, leading to annual estimated electricity savings of 34 TWh by 2020, compared to the situation where no measures are taken.

(17) In accordance with Article 8 of Directive 2009/125/EC, this Regulation should specify the applicable conformity assessment procedures.

(18) In order to facilitate compliance checks, manufacturers should be requested to provide information in the technical documentation referred to in Annexes IV and V to Directive 2009/125/EC.

(19) In order to further limit the environmental impact of fans driven by motors with an electric input power between 125 W and 500 kW, manufacturers should provide relevant information on disassembly, recycling or disposal at end-of-life of such fans.

(20) Benchmarks for currently available fan types with high energy efficiency should be identified. This will help to ensure the wide availability and easy accessibility of information, in particular for small and medium-sized enterprises and very small firms, which will further facilitate the integration of best design technologies and facilitate the development of more efficient products for reducing energy consumption.

(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:

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Article 1

Subject matter and scope

1 This Regulation establishes ecodesign requirements for the placing on the market or putting into service of fans, including those integrated in other energy-related products as covered by Directive 2009/125/EC.

2 The Regulation shall not apply to fans integrated in:

(i) products with a sole electric motor of 3 kW or less where the fan is fixed on the same shaft used for driving the main functionality;

(ii) laundry and washer dryers ≤ 3 kW maximum electrical input power;

(iii) kitchen hoods < 280 W total maximum electrical input power attributable to the fan(s).

3 This Regulation shall not apply to fans which are:

a designed specifically to operate in potentially explosive atmospheres as defined in Directive 94/9/EC of the European Parliament and of the Council[(6)];

b designed for emergency use only, at short-time duty, with regard to fire safety requirements set out in Council Directive 89/106/EC[(7)];

c designed specifically to operate:

(i) (a) where operating temperatures of the gas being moved exceed 100 °C;

(b) where operating ambient temperature for the motor, if located outside the gas stream, driving the fan exceeds 65 °C;

(ii) where the annual average temperature of the gas being moved and/or the operating ambient temperature for the motor, if located outside the gas stream, are lower than – 40 °C;

(iii) with a supply voltage > 1 000 V AC or > 1 500 V DC;

(iv) in toxic, highly corrosive or flammable environments or in environments with abrasive substances;

d placed on the market before 1 January 2015 as replacement for identical fans integrated in products which were placed on the market before 1 January 2013; except that the packaging, the product information and the technical documentation must clearly indicate regarding (a), (b) and (c) that the fan shall only be used for the purpose for which it is designed and regarding (d) the product(s) for which it is intended[F1];

[F2e designed to operate with an optimum energy efficiency at 8 000 rotations per minute or more.]

Textual Amendments

F1 Substituted by Commission Regulation (EU) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for vacuum cleaners (Text with EEA relevance).

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F2 Inserted by Commission Regulation (EU) No 666/2013 of 8 July 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for vacuum cleaners (Text with EEA relevance).

Article 2

Definitions

In addition to the definitions set out in Directive 2009/125/EC, the following definitions shall apply:

1. ‘Fan’ means a rotary bladed machine that is used to maintain a continuous flow of gas, typically air, passing through it and whose work per unit mass does not exceed 25 kJ/kg, and which:
   - is designed for use with or equipped with an electrical motor with an electric input power between 125 W and 500 kW (≥ 125 W and ≤ 500 kW) to drive the impeller at its optimum energy efficiency point,
   - is an axial fan, centrifugal fan, cross flow fan or mixed flow fan,
   - may or may not be equipped with a motor when placed on the market or put into service;
2. ‘Impeller’ means the part of the fan that is imparting energy into the gas flow and is also known as the fan wheel;
3. ‘Axial fan’ means a fan that propels gas in the direction axial to the rotational axis of one or more impeller(s) with a swirling tangential motion created by the rotating impeller(s). The axial fan may or may not be equipped with a cylindrical housing, inlet or outlet guide vanes or an orifice panel or orifice ring;
4. ‘Inlet guide vanes’ are vanes positioned before the impeller to guide the gas stream towards the impeller and which may or may not be adjustable;
5. ‘Outlet guide vanes’ are vanes positioned after the impeller to guide the gas stream from the impeller and which may or may not be adjustable;
6. ‘Orifice panel’ means a panel with an opening in which the fan sits and which allows the fan to be fixed to other structures;
7. ‘Orifice ring’ means a ring with an opening in which the fan sits and which allows the fan to be fixed to other structures;
8. ‘Centrifugal fan’ means a fan in which the gas enters the impeller(s) in an essentially axial direction and leaves it in a direction perpendicular to that axis. The impeller may have one or two inlets and may or may not have a housing;
9. ‘Centrifugal radial bladed fan’ means a centrifugal fan where the outward direction of the blades of the impeller(s) at the periphery is radial relative to the axis of rotation;
10. ‘Centrifugal forward curved fan’ means a centrifugal fan where the outward direction of the blades of the impeller(s) at the periphery is forward relative to the direction of rotation;
11. ‘Centrifugal backward curved fan without housing’ means a centrifugal fan where the outward direction of the blades of the impeller(s) at the periphery is backward relative to the direction of rotation and which does not have a housing;