

## **Information regarding the existing technical regulations and / or conformity assessment procedures applicable for motors and generators to be marketed in the UK**

### **Technical standards for civil aircrafts**

In order to be placed in the European Union (EU) market civil aircrafts must meet the essential requirements of airworthiness laid down by Regulation (EC) No 1592/2002 of the European Parliament and of the Council (**OJ L-240 07/09/2002**) (CELEX 32002R1592) and the environmental protection requirements contained in Annex 16 to the Chicago convention on international civil aviation.

Compliance with the essential requirements is compulsory for any civil aircraft including any product, part or appliance installed or intended to be installed in a civil aircraft as defined in article 4 to Regulation (EC) No 1592/2002 of the European Parliament and of the Council.

Annex I to Regulation (EC) No 1592/2002 of the European Parliament and of the Council, lays down the essential requirements of airworthiness, which are related to product integrity (e.g. structure and materials, propulsion, system and equipment), product operation and organisations structure.

The **European Aviation Safety Agency** (EASA) is the competent body in the EU to ensure compliance of aircrafts, products, parts and appliances with the relevant essential requirements. The EASA has specific regulatory powers to produce rules in the field of airworthiness and environmental protection. Depending on the nature of the product (aircraft, part, appliance, etc) and the requirement, compliance should be accredited by different specific certificates and/or licenses which are established in Commission Regulation (EC) No 1702/2003 (**OJ L-243 27/09/2003**) (CELEX 32003R1702). Applications for licenses and certificates must be submitted to the Member States' National Aviation Authorities.

### **Legislation**

Regulation (EC) No 1592/2002 of the European Parliament and of the Council of 15 July 2002 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency (**OJ L-240 07/09/2002**) (CELEX 32002R1592).

Commission Regulation (EC) No 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (**OJ L-243 27/09/2003**) (CELEX 32003R1702).

Council Regulation (EEC) No 3922/91 of 16 December 1991 on the harmonization of technical requirements and administrative procedures in the field of civil aviation (OJ L-373 31/12/1991) (CELEX 31991R3922).

## **Technical standards for electromagnetic compatibility**

In order to be placed on the European Union (EU) market electrical and electronic apparatus must meet the essential requirements laid down in the Electromagnetic Compatibility (EMC) Directive 2004/108/EC of the European Parliament and of the Council (**OJ L-390 31/12/2004**) (CELEX 32004L0108) which aims to ensure that their performance is protected against electromagnetic disturbances.

### **Product Scope**

Directive 2004/108/EC of the European Parliament and of the Council applies to electric and electronic appliances presenting the following characteristics: they may generate or contribute to electromagnetic emissions which exceed a level allowing radio and telecommunication equipment and other equipment to operate as intended, or their functioning generates unacceptable degradation in the presence of the electromagnetic disturbance normally consequent upon their intended use.

The Directive is not applicable to products where the EMC aspect is covered by other specific directives (e.g. medical devices, radio and telecommunication terminal equipment, automotive vehicles) or regulations (aeronautical and marine radio products, parts and appliances, radio equipment used by radio amateurs).

Provisions related to essential requirements, conformity assessment procedures, CE and other information marks will not be compulsory for appliances which are intended for incorporation into a given fixed installation but are otherwise not commercially available.

### **1. Essential requirements**

These electronic appliances must meet the mandatory essential requirements set out set out in **Annex I** in such a way that: they do not cause electromagnetic disturbance exceeding the level above which radio and telecommunications equipment or other equipment cannot operate as intended, they have the adequate level of immunity to such disturbance which allows them to operate without unacceptable degradation of their intended use.

### **2. Harmonised standards**

Harmonised standards are technical specifications that would enable to meet the essential requirements. Products manufactured according to these harmonised standards benefit from a presumption of compliance with the essential requirements referred to in Annex I.

Harmonised standards are developed by the European Standardisation body: **CENELEC (European Committee for Electrotechnical Standardization)**. It is an independent organisation whose mission is to develop voluntary electrotechnical standards, in order to promote free trade in the single European Market. The standards are published in the Official Journal of the European Communities and transposed into national legislation in the form of national standards with identical characteristics.

A list of approved harmonised standards can be found at:

[http://ec.europa.eu/enterprise/policies/european-standards/documents/harmonised-standards-legislation/list-references/electromagnetic-compatibility/index\\_en.htm](http://ec.europa.eu/enterprise/policies/european-standards/documents/harmonised-standards-legislation/list-references/electromagnetic-compatibility/index_en.htm)

### 3. Conformity assessment

The conformity assessment process is required to certify that products comply with the essential requirements referred to in Annex I.

Compliance of apparatus shall be demonstrated by means of the procedures described in **Annex II** (Internal production control) and **Annex III** (Assessment by the notified body):

#### Internal production control:

The manufacturer shall draw up **technical documentation** providing evidence of the conformity of the apparatus with the essential requirements of this Directive.

Compliance of the apparatus with all relevant harmonised standards and requirements shall be attested by an **EC declaration** of conformity issued by the manufacturer or his authorised representative established in the EU.

#### Assessment by the notified body:

At the discretion of the manufacturer or of his authorised representative in the Community, this procedure may also be followed.

It consists of applying Annex II, completed by the presentation of the technical documentation to a notified body, which shall review it and assess whether it properly demonstrates that the requirements of the Directive have been met.

The manufacturer shall add the statement of the notified body to the technical documentation

### 4. CE marking

Electrical and electronic apparatus considered to meet the essential requirements set out in Annex I must bear the **CE marking** of conformity before being placed on the market. The CE marking shall be affixed in accordance with Annex V.

Any other mark may be affixed to the apparatus, its packaging, or the instructions for its use, provided that neither the visibility nor the legibility of the 'CE' marking is impaired.

The CE marking shall be accompanied by the identification number of the notified body responsible for the implementation of the procedures of conformity assessment, where the intervention of a third party is needed

#### 5. Market Surveillance

Each Member State establishes authorities to be responsible for checking that products placed on the market meet the requirements of the applicable directives and that the affixing and use of the CE marking is correct.

Apparatus complying with the Directive enjoy free circulation within the EU. However, in case a Member State ascertains that a product bearing the CE marking does not comply with the requirements of the directive, the Member State shall withdraw the product from the market, forbid its placing on the market or restrict the free movement thereof.

The Member State shall inform the Commission and the other Member States of any measure adopted, indicating the grounds for its decision.

Legislation

Directive 2004/108/EC of the European Parliament and of the Council of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC (**OJ L-390 31/12/2004**) (CELEX 32004L0108)

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 13/08/2008**) (CELEX 32008R0765)

Other information sources

European Commission - Directorate General for Enterprise and Industry, EU Guidelines on the application of the Directive 2004/108/EC:

[http://ec.europa.eu/enterprise/sectors/electrical/files/emc\\_guide\\_\\_updated\\_20100208\\_v3\\_en.pdf](http://ec.europa.eu/enterprise/sectors/electrical/files/emc_guide__updated_20100208_v3_en.pdf)

**Technical standards for low voltage electrical equipment (Only required for electrical equipment designed for the use with a voltage rating between 50 and 1000V for alternating current and between 75 and 1500V for direct current)**

The placing on the European Union (EU) market of low-voltage electrical equipment is subject to the compliance with mandatory essential requirements established by Directive 2006/95/EC of the European Parliament and of the Council (**OJ L-374 27/12/2006**) (CELEX 32006L0095) in order to ensure the safety of persons, domestic animals or property.

**Product scope**

The Directive covers electrical equipment (including some components intended for incorporation into other equipment) designed for the use with a voltage rating:  
between 50 and 1000 V for alternating current;  
between 75 and 1500 V for direct current.

In particular, products such as electrical appliances, lighting equipment, electric wiring, appliance couplers and cord sets, or electrical installation equipment, are covered by the Directive. Equipment outside the scope of the Directive is listed in **Annex II to the Directive**.

**Essential requirements**

The essential safety requirements, which are laid down in **Annex I to the Directive**, protect against risks arising from the use of the electrical equipment and risks which may be caused by external influences on the electrical equipment, including not just electrical ones but also mechanical, chemical and any other risk (noise, vibrations...).

**Harmonised standards**

The technical specifications to meet the essential requirements are not described in the Directive. However, products are presumed to conform to the essential safety requirements where they have been manufactured in accordance with:

- The harmonised standards drawn up by the **European Committee for Electrotechnical Standardisation (CENELEC)** on the basis of the essential requirements set in the Directive; or
- In the absence of harmonised standards, international rules issued by the **International Electrotechnical Commission (IEC)**.

The manufacturer may construct the product without applying harmonised or international standards but, in such a case, the product will not benefit from presumption of conformity and the manufacturer must include in the technical documentation a description of the solutions adopted to meet the essential safety requirements.

### Conformity assessment

Before a product is placed on the EU market, the manufacturer must ensure and declare conformity of the electrical equipment with the provisions of the Directive in order to affix the CE marking.

The manufacturer must affix the CE marking to each product and draw up a written declaration of conformity. **Annex IIIb** describes the content of the declaration of conformity.

The manufacturer must compile the technical documentation (covering the design, manufacture and operation of the product) which enables to assess whether the electrical equipment complies with the requirements of the Directive. This documentation, together with a copy of the declaration of conformity, must be kept at the disposal of the competent national authorities for inspection purposes for a period of 10 years from the date of manufacture of the product. The contents of this documentation are detailed in **Annex IV**. Where neither the manufacturer nor his authorised representative are established within the EU, the importer or the person first placing the product on the EU market is responsible for ensuring the technical documentation. In case of low-voltage electrical equipment, there is no third party intervention in the conformity assessment procedure. However, a third party (notified body) may provide reports in response to a challenge by a market surveillance authority of the Member State as to the conformity of the equipment. This report is considered an element of proof.

Notified bodies are organisations designated by each Member State and notified to the Commission and the other Member States, that are in charge of assessing manufacturer's conformity to the essential requirements when a third party is required.

### CE Marking

All electrical equipment marketed in the EU must be provided with a CE marking of conformity, as depicted in **Annex III to the Directive**, which symbolises the conformity of the equipment with the essential requirements. It shall be affixed on the product, on the packaging, the instructions for use or the guarantee in a visible, easily legible and indelible way.

The Directive provides for procedures and sanctions established by the Member States for cases where the CE marking has been affixed unduly.

#### Market surveillance

Each Member State establishes authorities to be responsible for checking that products placed on the market meet the requirements of the applicable directives and that the affixing and use of the CE marking is correct.

Market surveillance can be done by testing products, checking administrative and technical documentation and visiting factories.

Products complying with the Directive enjoy free circulation within the EU. However, in case a Member State finds that the CE Marking has been affixed unduly, the manufacturer or his authorised representative established within the EU must make the product conform to the essential safety requirements.

Otherwise, the Member State must restrict or forbid the placing on the market of this product, or even remove it from the market.

According to Regulation (EC) No 765/2008 of the European Parliament and of the Council (**OJ L-218 13/08/2008**) (CELEX 32008R0765), Member States' authorities in charge of external border controls shall also control the conformity of the product at the points of entry into the EU.

Legislation Directive 2006/95/EC of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (**OJ L-374 27/12/2006**) (CELEX 32006L0095)

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 13/08/2008**) (CELEX 32008R0765)

#### Other information sources

European Commission - Directorate General for Enterprise and Industry, Guidelines on the application of the Low Voltage Directive and recommendations:

[http://ec.europa.eu/enterprise/electr\\_equipment/lv/guides/index.htm](http://ec.europa.eu/enterprise/electr_equipment/lv/guides/index.htm)

its with examples of products within or outside of the scope of the Low Voltage Directive (LVD):

[http://ec.europa.eu/enterprise/electr\\_equipment/lv/guides/lvd\\_listexamples.pdf](http://ec.europa.eu/enterprise/electr_equipment/lv/guides/lvd_listexamples.pdf)

## **Technical standards for motor vehicles**

The placing on the European Union (EU) market of certain categories of motor vehicles must comply with the technical requirements which have been harmonised by EU legislation.

EU legislation has harmonised technical requirements for three categories of motor vehicles, namely passenger cars, motorcycles and tractors as well as their trailers, systems, components and separate technical units.

A type-approval procedure is established in order to check compliance with the harmonised technical requirements (EC type-approval). Manufacturers who have a "type" approved vehicle in one Member State can market the vehicle in all Member States without further tests.

Nevertheless, buses, coaches, commercial vehicles and trucks have not EU harmonised technical requirements, therefore each Member State establishes its own technical approval procedures.

The EC whole vehicle type-approval system applies to tractors, passenger cars and to motorcycles on a mandatory basis. There are three "framework directives", which provide for the general rules applicable to the type-approval of motor vehicles, motorcycles and tractors, respectively. Moreover, specific technical requirements for construction and safety (i.e. sound levels, fuel consumption, speed limiters, braking system,...) and testing procedures are laid down in over 90 separate directives.

### **EC Type-approval procedure**

Applications for type-approval must be submitted by the manufacturer or his authorised representative to the approval authority within a single Member State. These must be accompanied by the manufacturer's dossier and the type-approval certificate for each part and system included in the list of technical requirements for vehicle category.

Type-approval shall be granted to all types of vehicle, systems, separate technical units or components if they meet the technical requirements listed for the specific category of vehicle and correspond to the data supplied by the manufacturer. In order to obtain an EC whole vehicle type-approval and be placed on the market, the vehicle must comply with all the relevant directives. The approval authority in each Member State will complete a type-approval certificate and its annexes concerning the results of tests and will send this to the applicant.

A reciprocal information system is set up between the type-approval authorities in each Member State. Certain categories of vehicles produced in conformity with the approved type must bear a type-approval mark that consist of the type-approval number, the letter "e" followed by the identifying number or initials of the Member State conducting the type-approval and the vehicle identification number.



A certificate of conformity will be drawn up by the manufacturer or his authorised representative for each vehicle, or separate technical unit or component produced in conformity with the approved type. When a vehicle is accompanied by this certificate it may be placed on the market, sold and registered for use throughout the EU.

### Legislation

#### Framework Directives

Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (**OJ L-263 09/10/2007**) (CELEX 32007L0046)

Directive 2002/24/EC of the European Parliament and of the Council of 18 March 2002 relating to the type-approval of two or three-wheel motor vehicles and repealing Council Directive 92/61/EEC (**OJ L-124 09/05/2002**) (CELEX 32002L0024)

Directive 2003/37/EC of the European Parliament and of the Council of 26 May 2003 on type-approval of agricultural or forestry tractors, their trailers and interchangeable towed machinery, together with their systems, components and separate technical units and repealing Directive 74/150/EEC (**OJ L-171 09/07/2003**) (CELEX 32003L0037)

List of separate Directives on each category of motor vehicles

<http://ec.europa.eu/enterprise/automotive/directives/index.htm>

Other information sources

European Commission - Directorate General for Enterprise and Industry:

[http://ec.europa.eu/enterprise/automotive/index\\_en.htm](http://ec.europa.eu/enterprise/automotive/index_en.htm)

## **Ecodesign requirements for electric motors**

Electric motors can only be placed on the European Union (EU) market if they fulfil the eco-design requirements established by Commission Regulation (EC) No 640/2009 ([OJ L-191 23/07/2009](#)) (CELEX 32009R0640).

This Regulation is an implementing measure of Directive 2009/125/EC of the European Parliament and of the Council, which establishes a framework under which manufacturers of energy-using products (EuP) must, at the design stage, reduce the energy consumption and other negative environmental impacts that occur during the product's life cycle. The aim of this Regulation is to improve the energy efficiency of electric motors and gradually reduce the power consumption of these devices.

### **Product scope**

Commission Regulation (EC) No 640/2009 applies to electric motors, including where integrated in other products, defined as electric single speed, three-phase 50 Hz or 50/60 Hz, squirrel cage induction motors with:  
either 2, 4 or 6 poles;  
a rated voltage up to 1000 V;  
a rated power output between 0,75 to 375 kW (rating based on continuous duty).

The following products are not covered by this Regulation:

Motors designed to operate wholly immersed in a liquid

Motors completely integrated into a product of which the energy performance cannot be tested independently from the product

Motors designed for special applications (e.g. in potentially explosive atmospheres, at altitudes exceeding 1000 metres above sea-level, where ambient air temperature exceed 40° or is less than -15°, etc.)

Brake motors

However, certain information requirements apply to the excluded motors: the year of manufacture, the number of poles and information on the range of operating conditions for which the motor is specifically designed.

### **Ecodesign requirements**

[Annex I](#) to the Regulation sets out and define the efficiency requirements for electric motors, which shall be applied in accordance to the following timetable:

from 16 June 2011: motors shall have a minimum efficiency level of IE2;

from 1 January 2015: motors with a rated output of 7,5 - 375 kW shall have a minimum efficiency level of IE3 or IE2, if equipped with a variable speed drive;

from 1 January 2017: all motors with a rated power of 0,75 - 375 kW shall not be less efficient than IE3 or IE2, if equipped with a variable speed drive.

The product information requirements on motors are also set out in Annex I, point 2. Compliance with the eco-design requirements shall be measured in accordance with the methods set out in [Annex II](#).

### Conformity assessment

The manufacturer or his authorised representative established in the EU must attest the conformity of electric motors with the requirements laid down in Commission Regulation (EC) No 640/2009.

For this purpose, they may choose between the internal design control system set out in **Annex IV** to Directive 2009/125/EC of the European Parliament and of the Council and the management system set out in **Annex V** to that Directive.

According to these procedures, the manufacture must provide technical documentation for the conformity assessment and keep it at the disposal of the relevant national authorities for inspection purposes. The technical documentation to be provided is set out in point 2 of Annex I to Commission Regulation (EC) No 640/2009.

### CE Marking

Before an electric motor is placed on the market, a **CE marking** of conformity shall be affixed and a declaration of conformity issued whereby the manufacturer or its authorised representative ensures and declares that the product complies with all relevant provisions of the Regulation.

The declaration of conformity must include the information specified in **Annex VI** to Directive 2009/125/EC of the European Parliament and of the Council and shall make reference to Commission Regulation (EC) No 640/2009.

### Market surveillance

The Member States competent authorities shall perform market surveillance checks to ensure compliance of electric motors with the requirements of this Regulation. For this purpose, the authorities shall apply the verification procedure set out in **Annex III** to Commission Regulation (EC) No 640/2009.

### Legislation

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 (**OJ L-191 23/07/2009**) (CELEX 32009R0640)

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 (**OJ L-285 31/10/2009**) (CELEX 32009L0125)

### Other information sources

European Commission - Directorate General for Energy:

[http://ec.europa.eu/energy/efficiency/ecodesign/eco\\_design\\_en.htm](http://ec.europa.eu/energy/efficiency/ecodesign/eco_design_en.htm)

### **Ecodesign requirements for electric motors**

A new Regulation implementing Ecodesign Directive 2009/125/EC for electric motors came into effect on 16 June 2011: 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 ([OJ L-191 23/07/2009](#)) .