

# **GUIDELINES ON THE APPLICATION OF DIRECTIVE 2006/95/EC**

**(ELECTRICAL EQUIPMENT DESIGNED FOR USE WITHIN CERTAIN  
VOLTAGE LIMITS)**

**AUGUST 2007**

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Dear User,

The provisions of the Low Voltage Directive (LVD) 2006/95/EC have been in force for thirty years and have been pivotal in promoting the Single Market for electrical equipment in Europe and assuring that citizens are provided with a high level of protection.

I am therefore very pleased to have been asked to introduce this third edition of the LVD Guidelines, which seeks to provide a “user friendly” reference to issues regarding the Directive. The fact that it is not greatly different from previous editions shows that consensus has been relatively easily achieved in this sector and there exists a stability of understanding as to how the Directive needs to be applied in practical terms. The main purpose of the amendments is to deal with the codification of the previous Directive 73/23/EEC and the interface with the “new” Machinery Directive 2006/42/EC. It highlights the editorial corrigendum<sup>1</sup> to Directive 93/68/EC, that clarifies Article 10 (1) regarding the placing of the CE marking and also touches upon the interface with the General Product Safety Directive 2001/95/EC, reflecting guidance issued by DG SANCO.

Whilst stakeholders should note that this text is not legally binding in the sense of legal acts in the Community, it does provide a very good insight into the views of those stakeholders – representatives from the member states, industry, users, standardisation and notified bodies – who were involved in its development.

Any further suggestions on the content of the guidelines are most welcome.

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August 2007

1. See corrigendum in OJ L299/32 of 28.10.2006.

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## I. INTRODUCTION

1. These guidelines have been prepared with a view to assist all parties<sup>2</sup> directly or indirectly involved in the application of Directive 2006/95/EC, the "Low Voltage" Directive<sup>3</sup>. They supersede guidance on the application of that Directive which was given in the Commission's communication of 15 December 1981<sup>4</sup> and the "Guidelines on the application of Council Directive 73/23/EEC" of February 2001.

They have been drawn up by European Commission services and discussed with a Working Party of Government Experts, representatives of European industry, consumer protection organisations and European standardisation bodies. These guidelines, which are updated when necessary, reflect the consensus views reached between Commission services and representatives of the Member States in the LVD Working Party and LVD ADCO.

2. Readers' attention is drawn to the fact that this Guide is intended only for facilitating the application of the "Low Voltage" Directive and it is the text of the Directive that is legally binding.

This document is not a legally binding interpretation of the Directive. However, it represents a reference for ensuring consistent application of the Directive by all those involved.

3. These guidelines are not exhaustive: they focus on certain issues only, which, in the light of the experience, are of direct and specific interest for the application of the "Low Voltage" Directive. They are intended to complement the "Guide to the implementation of Union harmonisation directives", edition 2000<sup>5</sup>, as far as issues related in particular to the application of this Directive are concerned. In particular, for the definitions of concepts like "placing on the market", "manufacturer", authorised representative", "importer or person responsible for placing the product on the market", the Guide mentioned above should be consulted.

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<sup>2</sup> By virtue of the Agreement on the European Economic Area (EEA), electrical equipment that complies with the Low Voltage Directive also benefits from free movement in Iceland, Liechtenstein and Norway. The same is true in Switzerland by virtue of the mutual recognition agreement with the EU and in Turkey by virtue of the EU-Turkey Customs Union. So the relevant references of the Low Voltage Directive and its Guide should be read in conjunction with these Agreements.

3. Directive 2006/95/EC of the European Parliament and of the Council of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits (codified version) OJEU L 374, 27.12.2006

<sup>4</sup> OJ L 374, 27.12.2006, p. 10–19

<sup>5</sup> European Commission "Guide to the implementation of directives based on the new approach and the global approach – 2000 Edition" - Luxembourg: Office for Official Publications of the European Communities - ISBN 92-828-7500-8. The catalogue number is CO-22-99-014-EN-C. It can be obtained through sale points of the Official Journal of the EC.

The issues covered by these guidelines are:

- the scope of the "Low Voltage" Directive
  - the safety requirements applicable
  - the conformity assessment procedure applicable, including CE marking
  - the relationships with certain other Directives.
4. Reader's attention is drawn to the fact that certain products subject to the "Low Voltage" Directive are also subject to other directives. In order to be allowed on the EU market these products must comply also with the provisions of those directives. These guidelines refer to the application of the "Low Voltage" Directive and clarify the relationship between that Directive and certain other directives.

Additional documents which relate to the application of the new approach directives or of the Low-Voltage Directive are available on the Commission website (see Annex I).

## II. THE “LOW VOLTAGE” DIRECTIVE

5. Directive 2006/95/EC is a codifying Directive, which brings together in one text the “original” Low Voltage Directive 73/23/EEC<sup>6</sup> with its subsequent amendments. Directive 2006/95/EC came into force and repealed Directive 73/23/EC as from 16<sup>th</sup> January 2007.

It should be noted that the content is also identical to the previous Directive (as amended). However the process revealed an inconsistency between different language versions of Directive 93/68/EEC. This has been addressed by issuing a corrigendum<sup>7</sup> to Directive 93/68/EEC, aligning all language versions. This amended Directive 73/23/EEC, which was subsequently replaced by Directive 2006/95/EC. The Clause in the new Directive (Article 14b) indicates that references to the old Directive are to be taken to refer to the new Directive. Codification does not change national legislation

The aim of the Directive therefore remains the harmonising the laws of the Member States relating to electrical equipment designed for use within certain voltage limits.

6. The “Low Voltage” Directive is a “total” harmonisation directive in the sense that it has superseded existing national regulations in the field covered: electrical equipment may only be put on the market if it is in conformity with the requirements of the Directive and, on the other hand, Member States may not impede free circulation or the marketing of conforming equipment (see also footnote 2).

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<sup>6</sup> Directive 73/23/EEC (OJ L 77, 26.3.73, p. 29-33) as amended by Directive 93/68/EC (OJ No L 220, 30.3.1993, p. 1) and Corrigendum to Article 13(4) of Directive 93/68/EEC in order to align the wording of Article 10(1) of Directive 73/23/EEC (as amended by Article 13(4) of Directive 93/68/EEC) in DA, DE, IT, HU, NL, SK and SL to the EN/FR original versions (OJEU L 299, 28.10.2006, p. 32)

<sup>7</sup> See corrigendum in OJ L299/32 of 28.10.2006

### III. SCOPE OF THE “LOW VOLTAGE” DIRECTIVE

#### Which products are covered?

7. The Directive applies to all electrical equipment<sup>8</sup> designed for use with a voltage rating of between 50 and 1000 V for alternating current and between 75 and 1500 V for direct current. Voltage ratings refer to the voltage of the electrical input or output, not to voltages that may appear inside the equipment.

Following discussions with Member States the Commission has taken the position that the term “designed for use with a voltage range” shall be understood as equipment having either a rated input voltage or a rated output voltage inside this voltage range. Internally there may be higher voltages.

Battery operated equipment outside the voltage rating is obviously outside the scope of the LVD. Nevertheless, any accompanying battery-charger as well as equipment with integrated power supply unit within the voltage ranges of the Directive are in the scope of the LVD. This applies also, in the case of battery-operated equipment with supply voltage rating under 50 V AC and 75 V DC, for their accompanying power supply unit (e.g. Notebooks).

However, the following are excluded from the scope of the “Low Voltage” Directive:

- Electrical equipment for use in a potentially explosive atmosphere
- Electrical equipment for radiology and medical purposes
- Electrical parts for lifts
- Electricity meters,

which are covered by other Union directives, and

- Plugs and socket outlets for domestic use<sup>9</sup>
- Electric fence controllers
- Specialised electrical equipment, for use on ships, aircraft or railways which complies with the safety provisions drawn up by international bodies in which the Member States participate,

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<sup>8</sup> The term “electrical equipment” is not defined in the Directive. Therefore it is to be interpreted according to the internationally recognised meaning of this term. The definition of electric equipment in the “International Electrotechnical Vocabulary of IEC (International Electrotechnical Commission) is: “item used for such purposes as generation, conversion, transmission, distribution or utilisation of electrical energy, such as machines, transformers, switchgear and controlgear, measuring instruments, protective devices, wiring material, current-using equipment.”

<sup>9</sup> “Domestic” plugs and sockets may also be used in commercial or industrial premises for uses which do not require specialised industrial features.

which so far are not covered by any Union directive and therefore must not be CE marked.

8. Broadly, the Directive covers consumer and capital goods designed to operate within those voltage limits<sup>10</sup>, including in particular electrical appliances<sup>11</sup>, lighting equipment including ballasts, switch gear and control gear, electric motors and alternators, electrical wiring, appliance couplers and cord sets, electrical installation equipment<sup>12</sup>, cable management systems etc. A list of examples, inside and outside the scope of LVD, was approved by LVD ADCO and LVD WP and is attached in Annex II.

### **Are “components” included in the scope?**

9. In general, the scope of the Directive includes both electrical equipment intended for incorporation into other equipment and equipment intended to be used directly without being incorporated.

However, some types of electrical devices, designed and manufactured for being used as basic components to be incorporated into other electrical equipment, are such that their safety to a very large extent depends on how they are integrated into the final product and the overall characteristics of the final product. These basic components include electronic and certain other components<sup>13</sup>.

Taking into account the objectives of the “Low Voltage” Directive, such basic components, the safety of which can only, to a very large extent, be assessed taking into account how they are incorporated and for which a risk assessment cannot be undertaken, then they are not covered as such by the Directive. In particular, they must not be CE marked unless covered by other Union legislation that requires CE marking.

However, other electrical components that are intended to be incorporated into other equipment and for which a risk assessment can be undertaken<sup>14</sup>, such as -

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<sup>10</sup> Tools for live working (like screwdrivers etc.) are not included. However, such tools are covered by standard EN 60900, not published under the LV Directive.

<sup>11</sup> The LVD Working Party has given the opinion that hand-held and transportable electrically driven tools such as power tool and lawnmowers are not covered by the LVD but by the Machinery Directive. See also chapter 29 of this guide.

<sup>12</sup> Insulating tapes, for which safety depends critically not only on their intrinsic characteristics but also on how they are used under very variable conditions, are not considered electrical equipment and are not covered by the Directive. A European standard, EN 60454, exists for such tapes, which is not published under the Low Voltage Directive.

<sup>13</sup> This includes, for example,, active components such as integrated circuits, transistors, diodes, rectifiers, triacs, GTO's, IGBT's, opto-semi-conductors; passive components such as capacitors, inductance, resistors, filters; electromechanical components such as connectors, devices for mechanical protection which are part of equipment, relays with terminals for printed circuit boards, micro switches.

<sup>14</sup> A further assessment of the safety aspects related to the way in which such components are incorporated is in general also necessary.



transformers and electrical motors, are covered as such by the Directive and must be CE marked.

Moreover, the scope of the exclusion of basic components must not be misunderstood and extended to items like lamps, starters, fuses, switches for household use, elements of electrical installations, etc., which, even if they are often used in conjunction with other electrical equipment and have to be properly installed in order to deliver their useful function, are themselves to be considered electrical equipment in the sense of the Directive.

### **Which safety aspects are covered by the Directive?**

10. The Directive covers all risks arising from the use of electrical equipment, including not just electrical ones but also mechanical, chemical (such as, in particular, emission of aggressive substances) and all other risks. The Directive also covers health aspects of noise and vibrations, and ergonomic aspects as far as ergonomic requirements are necessary to protect against hazards in the sense of the Directive.

Article 2 and Annex I lay down eleven “safety objectives”, which represent the essential requirements of this Directive.

11. It should be noted that electromagnetic compatibility (emission and immunity) aspects, except in so far as they deal with safety, are excluded from the scope of this Directive and are separately regulated under Directive 2004/108/EC<sup>15</sup>.

Radiation aspects referred to in Annex I to the Directive are limited to those directly relevant for health and safety of persons, property and domestic animals and do not cover electromagnetic disturbances in the sense of the EMC Directive.

For products emitting ionising radiation two EURATOM Directives<sup>16</sup> should also be considered.

The Commission interprets that all electromagnetic aspects relating to safety including functional safety are covered by the LVD. This covers also the effect of electromagnetic fields, emitted by electrical apparatus.

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<sup>15</sup> OJ L 390, 31.12.2004, p.24.

<sup>16</sup> European Commission. Council Directive 97/43/EURATOM of 30 June 1997 on health protection of individuals against the dangers of ionising radiation in relation to medical exposure. Official Journal of the European Communities, L 180:22-27; 9.7.97 and Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation, Official Journal L 159, 29/06/1996 P. 0001 - 0114

12. Finally, it should also be noted again that for certain electrical equipment, the provisions of other directives also apply.

#### **IV. SAFETY REQUIREMENTS FOR PLACING ON THE EU MARKET ELECTRICAL EQUIPMENT COVERED BY THE “LOW VOLTAGE” DIRECTIVE**

**Which are the mandatory safety requirements applicable in the EU?**

13. Article 2 of the Directive states:

“1. The Member States shall take all appropriate measures to ensure that electrical equipment may be placed on the market only if, having been constructed in accordance with good engineering practice in safety matters in force in the Community, it does not endanger the safety of persons, domestic animals or property when properly installed and maintained and used in applications for which it was made.

2. The principal elements of the safety objective referred to in paragraph 1 are listed in Annex 1.”

14. Member States must ensure the freedom to place on the market and the free movement of electrical equipment, which is in conformity with the requirements of the Directive.

As far as substantive safety requirements are concerned, eleven “objectives” are mentioned in Annex 1 to the directive.

These are the mandatory safety provisions, which products must comply with in order to be allowed onto the EU market and benefit from freedom of movement in the Union (Articles 2 and 3). Consequently, any national standards or national specifications related to the safety of electrical equipment do not have a mandatory status and may not be a condition for its placing on the market.

15. Article 7 of the Directive provides for mutual recognition of national standards in case of absence of standards within the meaning of Articles 5 and 6. However, such national standards might, in certain cases, not cover all the “safety objectives” of the Directive. Therefore, manufacturers using those standards should carefully check compliance with all the safety requirements of the Directive.

The phrase at the end of Article 7 ("if it ensures a safety level equivalent to that required in their own territory") does not, per se, authorise Member States to require compliance with safety levels other than those resulting from the "safety objectives".

Nevertheless, compliance with the safety objectives of the Directive -which are henceforth identical for the whole Union- may imply in some cases compliance

with different requirements from one Member State to another to take account of different objective situations, e.g. requirements resulting from supply systems which vary from one region of the Union to another.

16. In the light of the above, national laws or regulations requiring compliance with particular technical specifications (where they exist) may not be considered to be mandatory. They may only eventually have the status of specifications giving presumption of conformity, when appropriate.

It follows that manufacturers can no longer be obliged to comply with national specifications in the case of equipment otherwise satisfying the "safety objectives" of the Directive. Where the standards referred to in Articles 5 or 6 do not yet exist, manufacturers are, of course, entitled to comply with any appropriate specifications in order to facilitate demonstrating conformity with the "safety objectives".

The non mandatory nature of specifications in national rules is from the point of view of EC law confirmed by the rulings of the Court of Justice, according to which national authorities and courts must not apply national provisions which conflict with Union provisions<sup>17</sup>.

17. The existence of national laws or regulations cannot prevent the drawing up of harmonised standards in accordance with Article 5.

Nor can such provisions be imposed in addition to, or instead of, the technical specifications contained in the harmonised standards, as they have ceased to be binding.

Within the field covered by the Directive there is therefore no longer any point in referring to such provisions under "A - deviations" in "harmonisation documents" (HD) or "European standards" (EN)<sup>18</sup>.

Keeping these provisions in the legal system of the Member States in the form of obligatory provisions would constitute an infringement to the Directive and expose the Member States in question to the procedure set out in Article 169 of the Treaty.

### **How to ensure conformity to those requirements?**

18. Products are presumed to conform to the safety objectives of the "Low Voltage" Directive where the equipment has been manufactured in accordance with technical standards that, in the order laid down by the Directive, are as follows:

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<sup>17</sup> Judgements in Case 106/77 Simmenthal (ECR 1978, p. 645) and in Case 148/78 Ratti (ECR 1979, p. 1646).

<sup>18</sup> However, deviation may be justified in special cases by objective situations referred to at the end of paragraph 15.

- European standards (EN or HD), which are referred to as harmonised standards in the Directive<sup>19</sup>, drawn up in accordance with Article 5 by the bodies notified by the Member States (in fact, these are standards made by CENELEC);
- Where standards as defined in Article 5 have not yet been drawn up and published, international rules issued by the two international bodies, the International Commission on the rules for the approval of electrical equipment (CEE)<sup>20</sup> or the International Electro technical Commission (IEC) (Article 6(1)), and published in accordance with the procedure laid down in Article 6(2) and (3);
- Where standards as defined in Article 5 or international standards as defined in Article 6 do not yet exist, the national standards of the Member State of manufacturer (Article 7).

The standards referred to in Articles 5, 6 and 7, the application of which remains voluntary; provide a presumption of conformity for equipment manufactured in accordance with those standards.

A harmonised standard can be used to provide a presumption of conformity at the moment of the first national publication<sup>21</sup> of the standard according to Article 5, second paragraph, and in this regard the listing in the Official Journal of the EU is only for information, in accordance with Article 5, third paragraph. The Official Journal also contains the date of cessation of presumption of conformity of the superseded standard, which is considered to be the date beyond which a harmonised standard is no longer considered to be up to date in the light of technological progress and the developments in good engineering practice in safety matters (Article 5, second paragraph). In this regard the listing therefore provides the definitive text.

19. Alternatively, the manufacturer may construct the product in conformity with the essential requirements (safety objectives) of the directive, without applying harmonised, international or national standards. In such a case the product will not benefit from presumption of conformity conferred by the use of such standards and the manufacturer must include in the technical documentation (see chapter V) a description of the solutions adopted to satisfy the safety aspects of the Directive.

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<sup>19</sup> The differences between “harmonised standards” according to the new approach and harmonised standards under the “Low Voltage” Directive are explained in the “Guide to the implementation of Community harmonisation Directives based on the new approach”, see in particular footnotes 73 and 74 at p. 28.

<sup>20</sup> “CEE” does not exist any longer but its activities are now continued by CENELEC.

<sup>21</sup> It is up to each Member State to determine in the national laws transposing the LVD which national publication confers this presumption under the pre-conditions that the publication is widely available and references all published standards. After this first publication it may be used not only in the territory concerned but anywhere in the world to gain a presumption of conformity.

## V. CONFORMITY ASSESSMENT PROCEDURES UNDER THE “LOW VOLTAGE” DIRECTIVE

### What are the conformity assessment procedures to be applied?

20. Article 8 and Annex IV of the Directive describe the procedure by which the manufacturer or his authorised representative established in the Union<sup>22</sup> ensures and declares conformity of the electrical equipment with the provisions of the Directive. This includes three main elements:

Technical documentation.

Before a product is placed on the market the manufacturer puts together the technical documentation that makes it possible to assess whether the electrical equipment complies with the requirements of the Directive (see below)<sup>23</sup>.

Declaration of conformity

The manufacturer or his authorised representative established in the Union are also required, and are the only ones authorised to do so, to draw up in writing a declaration of conformity (see below) before placing the product on the market.

CE marking

Before it is placed on the market the electrical equipment must have the "CE" marking affixed. Only the manufacturer or his authorised representative established in the Union are authorised to affix the "CE" marking.

Whilst the importer is not able to declare conformity to the Directive, he/ she needs to act with due care to ensure that clearly non-compliant products are not placed onto the market.<sup>24</sup>

LVD equipment not placed on the EU market but incorporated into or attached to other equipment covered by the LVD or another new approach directive (e.g. cables incorporated into a television), only the latter needs CE marking under LVD (i.e. only the television).

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<sup>22</sup> These obligations do not extend to an importer who will, in general, not have a detailed knowledge of which directives have been considered or technical specifications applied.

<sup>23</sup> Annex IV of the “Low Voltage” Directive states that the manufacturer must take all measures necessary in order that the manufacturing process ensures compliance of the products with the technical documentation and the requirements of the Directive.

<sup>24</sup> With regard to electrical consumer products, cf. also the obligations of "distributors" under Article 5(2) and (3) of the General Product Safety Directive (GPSD) 2001/95/EC. The relationship between the LVD and the GPSD is discussed in Section VI below.

21. Where no standards within the meaning of the Directive have been applied, the manufacturer has to provide within the technical documentation a description of the solutions adopted to satisfy the safety requirements of the Directive.

In case of challenge by the authorities in charge of market surveillance, a report in the sense of Article 8(2) (which however is not obligatory) is considered an element of proof. In fact, in addition to the three basic conformity assessment measures, mentioned above, Article 8(2) provides, in the event that conformity is challenged, for the possible submission to the market surveillance authority of a report drawn up by a notified body as evidence that the electrical equipment complies with the safety objectives (Article 2 and Annex I).

The main function of article 8.2 is to provide the conditions most favourable to progress and dynamism in the Electrotechnical industry. It thus facilitates the marketing of high-tech electrical equipment that, being such, cannot benefit from the support of any technical standards since often such standards are drawn up after the development of a technical innovation.

#### **What must be included in the technical documentation?**

22. It must include details of the design, manufacture and operation of the electrical equipment in so far as these details are needed to assess the conformity of the electrical equipment with the requirements of the Directive.

Accordingly, it contains:

- a general description of the electrical equipment,
- design and manufacture drawings plus diagrams of components, sub-assemblies, circuits, etc.,
- descriptions and explanations needed to understand the above mentioned drawings and diagrams plus the operation of the electrical equipment,
- a list of the standards used, in full or in part, and a description of the solutions employed to meet the safety aspects of this directive when standards have not been applied,
- the results of design calculations and of checks carried out, etc.,
- test reports (in fact, the test reports which may be available, either established by the manufacturer or a third party).

### **Who must keep the technical documentation and where?**

23. The manufacturer or his authorised representative established in the Union must keep this documentation at the disposal of the national authorities for inspection purposes for at least ten years from the last date of manufacture of the product. The technical documentation may be kept on electronic support, provided that it is easily accessible for inspection. Where the manufacturer is not established in the Union and he has no authorised representative in the Union, this obligation is incumbent upon the importer or the person responsible for placing the product on the Union market.

This technical documentation must be held within the Union in such a way it can be presented to the authorities upon first request and within a reasonable time-frame (e.g. two weeks).

### **Where must the CE marking be affixed?**

24. The CE marking is placed by the manufacturer, or his authorised representative established in the Union, on the electrical equipment or, where this is not practically possible, on the packaging, the instructions for use or the guarantee.

### **What is the meaning of, and are the requirements of the CE marking?**

25. The CE marking declares conformity of the electrical equipment with the essential requirements and conformity assessment procedures set out under the “Low Voltage” Directive and all the other directives applicable to it.

The CE marking must be affixed visibly, legibly and indelibly.

The affixing of markings, which are likely to deceive third parties as to the meaning and form of the CE marking, is prohibited.

### **Who must keep the declaration of conformity and where?**

26. The manufacturer, or his authorised representative established in the Union, or, when the manufacturer is not established in the Union and has no authorised representative in the Union, the importer or person responsible for placing the product on the market, must keep a copy of the declaration of conformity at the disposal of the national authorities for inspection purposes, in the same way as the technical documentation. Thus the national market surveillance authorities may, if appropriate, require a copy of the declaration of conformity.



### **What must be included in the declaration of conformity?**

27. Annex III.B of the Directive describes the content of the declaration of conformity as follows<sup>25</sup>:

- name and address of the manufacturer or his authorised representative established within the Union,
- a description of the electrical equipment,
- reference to the harmonised standards,
- where appropriate, reference to the specifications on which conformity is declared,
- identification of the signatory who has been empowered to enter into commitments on behalf of the manufacturer or his authorised representative established within the Union,
- the last two digits of the year in which the CE marking was affixed (for the first time).

The declaration of conformity must be drawn up at least in one of the official languages of the Union.

A number of questions have been raised on the issue of the Declaration and the need to show compliance to the latest Directive.

It was further accepted, that from the date on which Directive 2006/95/EC came into force (i.e. 16<sup>th</sup> January 2007), all newly issued documents, especially Declarations of Conformity and Technical Files, where references are made, should refer to this Directive.

However, there is no need to update existing documents, as long as no other corrections are necessary.

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<sup>25</sup> See also EN 45014 containing an example of a declaration of conformity.

## VI. RELATIONSHIPS BETWEEN THE “LOW VOLTAGE” DIRECTIVE AND CERTAIN OTHER UNION DIRECTIVES

**What are the requirements applicable to electrical equipment that is also a “machine” (within the meaning of the “Machinery Directive”<sup>26</sup>)?**

28. As from 29<sup>th</sup> December 2009, the revised “Machinery” Directive 2006/42/EC<sup>30</sup> is applicable. One of the objectives of the revision is to clarify the borderline between the scope of the “Machinery” Directive and the “Low Voltage” Directive in order to provide greater legal certainty for manufacturers.
29. Certain categories of electrical machinery are excluded from the scope of the “Machinery” Directive; however the exclusion is no longer based on an assessment of the main risk. Instead, Article 1 of the revised Directive excludes the following categories of electrical machinery from the scope of the “Machinery” Directive:
- “(k) *electrical and electronic products falling within the following areas, insofar as they are covered by Council Directive 73/23/EEC of 19 February 1973 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits:*
- *household appliances intended for domestic use;*
  - *audio and video equipment;*
  - *information technology equipment;*
  - *ordinary office machinery;*
  - *low-voltage switchgear and control gear;*

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<sup>26</sup> Directive 98/37/EC of the European Parliament and of the Council of 22 June 1998 on the approximation of the laws of the Member States relating to machinery (OJ No L 207, 23.07.1998) as amended by Directive 98/79/EC (OJ No L 331/1, 07.12.1998).

<sup>30</sup> Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast), (OJ N° L 157, 9.6.2006).

— *electric motors*<sup>31</sup>.”

All electrical machinery that does not fall into one of the above categories is thus in the scope of the “Machinery” Directive.

30. Concerning the category mentioned in the first indent of Article 1(2) (k), “*household appliances intended for domestic use*”, several clarifications are necessary:

Firstly, the expression “*household appliances*” designates equipment intended for typical housekeeping functions such as washing, cleaning, heating, cooling, cooking, etc. Examples of household appliances include washing machines, dishwashers, vacuum cleaners and machinery for food preparation and cooking. On the other hand, electrical gardening machinery or power tools intended for the construction and repair work in the home are not covered by this exclusion.

Secondly, the exclusion concerns appliances “*intended for domestic use*”, in other words, appliances intended for use by private persons (consumers) in the home environment.

**The statement from the manufacturer in the product information concerning the specific product is the criterion that has to be considered to determine the intended use of the appliance in this case and which Directive applies. Evidently this must accurately reflect the reasonably foreseeable use of the product**

Thirdly, household appliances which are also “machines” previously covered by the LVD according to Article 1(5) of the old “Machinery” Directive (98/37/EC) and intended for commercial or industrial use are no longer excluded from the scope of the “Machinery” Directive. Whilst it is possible for a consumer to acquire an appliance intended for commercial use or for a commerce to use an appliance intended for consumers, the criterion to be taken into account for determining the intended use is the use intended and stated by the manufacturer of the appliance concerned in the Declaration of Conformity and in the product information/instructions/advertising concerning the product.

The Commission has issued a mandate to CEN and CENELEC<sup>32</sup> to take account of the revised “Machinery” Directive 2006/42/EC. In particular, the mandate requests the European Standardisation Organisations to make the necessary adjustments to standardisation to take account of the redefined borderline between the “Machinery” Directive and the “Low Voltage” Directive and the fact that certain types of machinery, currently subject to the

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<sup>31</sup> As a point of clarification generators and alternators (as opposed to generating sets) are not machines

<sup>32</sup> Mandate M/396 issued on 19 December 2006.

“Low Voltage” Directive, may become subject to the “Machinery” Directive (see also Annex III).

31. Electrical machinery that is not in any of the categories listed in Article 1(2) (k) of Directive 2006/42/EC and in the related clarifications above must fulfil the safety objectives of the “Low Voltage” Directive . However, it should be noted that section 1.5.1 of Annex I to Directive 2006/42/EC is worded as follows:

***“1.5.1. Electricity supply***

*Where machinery has an electricity supply, it must be designed, constructed and equipped in such a way that all hazards of an electrical nature are or can be prevented.*

*The safety objectives set out in Directive 73/23/EEC<sup>33</sup> shall apply to machinery. However, the obligations concerning conformity assessment and the placing on the market and/or putting into service of machinery with regard to electrical hazards are governed solely by this Directive.”*

Thus, whilst machinery with an electrical supply within the voltage limits of the “Low Voltage” Directive must fulfil the safety objectives of the “Low Voltage” Directive, the manufacturer’s EC Declaration of conformity should not refer to the LVD but to the Machinery Directive.

**What are the requirements applicable to electrical equipment that is intended for being permanently incorporated in construction works?**

32. Some types of electrical equipment covered by the "Low Voltage" Directive are manufactured with a view to being permanently incorporated in construction works. Consequently, such equipment must also be fit for use and meet the essential requirements as provided for by Directive 89/106/EEC<sup>35</sup> and set out in the interpreting documents used as a reference to establish the harmonised standards under that Directive, and comply with the conformity assessment procedures set out in its Article 13.

As a result, application to such electrical equipment of the provisions of the "Construction Products" Directive presupposes the existence of both harmonised

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<sup>33</sup> This is the old reference of the LVD, before its codification.

<sup>35</sup> Council Directive of 21.12.1988 concerning production products (89/106/EEC (OJ No L 40, 11.2.1989), as amended by Directive 93/68/EEC (OJ No L 220, 30.8.1993).

standards within the meaning of the “Construction Products” Directive and decisions concerning the conformity assessment procedures, again within the meaning of that Directive.

Should these essential conditions not be met, the provisions of Directive 89/106/EEC cannot in practice be applied to the relevant electrical equipment.

33. However, the "Low Voltage" Directive sets a wide range of safety objectives, overlapping with essential requirements in Annex I to Directive 89/106/EEC. In order to best ensure the objectives of both directives, existing harmonised standards (as published under the "Low Voltage" Directive) are being examined in order to ensure that they are also consistent with the relevant essential requirements of the "Construction Products" Directive.

**What is the relation with the "Radio equipment and telecommunications terminal equipment" directive<sup>36</sup>**

34. Equipment, or relevant components of equipment, falling under the R&TTED are covered by the provisions of that Directive regarding the essential requirements for health and safety. However, the R&TTED does not have its own detailed requirements, and refers to the safety objectives of the LVD, but with no voltage limit applying.

Harmonised standards listed in the OJEU under the LVD and identified as also applicable under the R&TTED give a presumption of conformity under that latter Directive, even for voltages outside the LVD limits. Safety standards for voltages outside the LVD range can be mandated and referenced under the R&TTED only, if required.

Manufacturers can choose to use the conformity assessment procedures of the LVD for equipment falling within the LVD voltage range.

Products that are subject to more than one Directive must meet the requirements of all applicable Directives. Where the R&TTE element of a product is integrated into the product, the product marking must include the appropriate R&TTE marking, including R&TTE equipment class identifiers and notified body numbers, if applicable.

**What is the relation with the “Gas Appliances” Directive<sup>37</sup>**

35. Appliances covered by the “Gas Appliances” Directive often include electrical components that fall also under the “Low Voltage” Directive. In particular,

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<sup>36</sup> Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (OJ L No L 91/10, 7. 4. 1999)

<sup>37</sup> Council Directive of 29 June 1990 concerning gas appliances (90/396/EEC (OJ No L 196, 26.7.1990), as amended by Directive 93/68/EEC (OJ No L 220, 30.8.1993).

Article 1 of the “Gas Appliances” Directive specifies that the Directive also apply to safety devices, controlling devices or regulating devices and subassemblies (separately marketed for trade use and designed to be incorporated into an appliance burning gaseous fuel or assembled to constitute such an appliance). Some of these components are or include electrical equipment. The “Gas Appliance” Directive and the “Low Voltage” Directive apply in a complementary way to electrical components (designed to be used in the voltage ranges of that Directive) incorporated (or to be incorporated) into gas appliances.

36. Conformity assessment within the framework of the “Gas Appliance” Directive shall be conducted in accordance with the procedure laid down in that Directive, taking into account the results of the conformity assessment procedures of the “Low Voltage” Directive, applied, in relation to the “Safety objectives” of this last Directive to electrical components of gas appliances. The safety aspects of the way in which the electrical components are incorporated into the gas appliances and ensure their proper functioning will be subject to direct examination by notified bodies.

#### **What is the relation with the “Lifts” Directive<sup>38</sup>?**

37. The electrical parts of lifts are not subject to the LVD as such. However, the electrical equipment of lifts and safety components for lifts must comply with the safety objectives set out in Annex I of the LVD.

#### **What is the relationship with the General Product Safety Directive (GPSD) 2001/95/EC?**

38. The GPSD establishes a general obligation to place only safe consumer products on the market as well as a procedure for the adoption of standards covering risks and categories of risks. However, the general safety obligation in that Directive does not apply to products falling under the LVD as the latter covers all risks. Economic operators should take into account that new legislation on GPSD will be prepared in the near future.

Given that the GPSD only applies where it contains different or more specific provisions the following elements need to be considered in parallel (see also Remark below):

*Identification of the product – GPSD article 5.1, subparagraphs 3 and 4*

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<sup>38</sup> European Parliament and Council Directive 95/16/EC of 29 June 1995 on the approximation of the laws of the Member States relating to lifts (OJ L 213 , 07.09.1995 P. 0001 – 0032)

These articles contain a specific provision on identification of the product itself, for example by a product reference. The objective is to facilitate identification of the product concerned and to allow for action at the most appropriate level.

*Follow up of consumer safety after products are marketed – GPSD article 5.1, subparagraphs 3, 4 and 5*

These subparagraphs require producers to take appropriate active steps after the product has been marketed. Examples include sample-testing, filing and keeping a register of complaints and also keeping distributors informed of this monitoring activity. The objective is to ensure preventive action and to detect risks.

*Information from producers to the competent authorities about dangerous products – GPSD article 5.3*

GPSD article 5.3 requires producers to inform the competent authorities of dangerous products and action taken to prevent risk. The objective is to ensure that the competent authorities can take appropriate steps to reduce risks to consumers and to ensure coordinated action.

*Co-operation with the competent authorities – GPSD article 5.4*

GPSD article 5.4 requires producers to co-operate with the competent authorities upon request. The objective is to ensure that action to avoid risk is coordinated.

The LVD does not cover the aspect of cooperation between producers and the competent authorities explicitly, although cooperation is implicitly foreseen as a pre-condition for the functioning of the Directive.

*Distributors' obligations - GPSD chapter III*

There are several provisions in the GPSD articles 5.2, 5.3 and 5.4 dealing with distributors' obligations. The overall objective is to ensure that distributors do not supply dangerous products and that they participate in measures taken to reduce risks to consumers.

*Adopting rules on penalties – GPSD article 7*

This explicitly requires that Member States lay down rules on penalties although there is no obligation on how to operate the rules on penalties. The objective is to include penalties in the range of possible measures to ensure compliance at national level.

*Attribute of powers to competent authorities – GPSD article 8*

GPSD article 8.1 sets out an extensive list of the powers Member States should have in order to take action in appropriate situations.

According to article 8.3, the powers in article 8.1 (b) to (f) must in particular be available where products pose a serious risk. Article 8.2 and 8.4 deal with the exercise of these powers in practice, for example to whom to address a measure and the obligation to take proportionate actions. These are supplementary provisions to the powers listed in article 8.1, and not separate obligations. According to Article 8.2, subparagraph 2 the competent authorities of the Member States should encourage voluntary action in relation to the area of power.

The powers attributed in article 8.1 cover three different aspects.

First article 8.1 (a) deals with information gathering (samples, checks, and information). The objective is to ensure that the competent authorities have the powers to obtain knowledge from the relevant organisation.

Second, article 8.1 (b) and (c), includes powers necessary to make marketing conditional, for example marking and warnings. The objective is to reduce risk.

Third, article 8.1 (d) to (f) covers bans and recall, including recall from consumers. The objective here is to prevent dangerous products from causing harm.

#### *Approach to market surveillance – GPSD article 9*

This obliges Member States to adopt an approach on market surveillance that may include in particular surveillance programs and follow-up and updating of scientific and technological safety knowledge. Interested parties must be given the opportunity to submit complaints and must be informed about complaint proceedings.

#### *European Network – GPSD article 10*

Article 10 establishes a European Network of the Member States authorities. The objective is to facilitate exchange of information, joint surveillance and improved cooperation.

Cooperation between member states is inherent in the LVD. In particular, articles 9 and 11 of the LVD foresee a mechanism for the exchange of information, and the Commission.

Services have established an informal Administrative Cooperation Group between Competent Authorities of Member States in order to ensure a consistent implementation of LVD.



Whereas Article 10 applies to LVD, Administrative cooperation is carried out through the Administrative cooperation Group for LVD, which is already established.

*Exchange of information and rapid intervention - RAPEX – GPSD article 12*

Article 12 provides a legal basis for an information exchange system for emergency situations (RAPEX system). The objective is to provide information to all Member States in order for them to take immediate action when a serious risk from a product has been detected.

*Rapid intervention procedures – GPSD article 13*

Article 13 introduces a basis for rapid intervention by the Commission in cases of serious risk. The objective is to eliminate risk effectively.

*Committee procedures and final provisions - Committee procedures – GPSD articles 14 and 15*

The GPSD articles 14 and 15 set out the basis for committee proceedings under the GPSD. The articles only apply for procedures under the GPSD. It follows from point 4.5.3 above that such procedures can concern LVD products (rapid intervention).

*Protection of confidentiality and motivation of measures – GPSD articles 16 and 18*

Articles 16 and 18 deal with administrative requirements when competent authorities in the Member States or the Commission adopt measures under the GPSD.

Article 16 regulates access to information and protection of confidentiality while article 18 requires that measures taken must state the appropriate reasons, those remedies available shall be quoted, that opportunity to submit views is allowed etc.

The objective is to ensure that the interests of stakeholders are being duly respected at the same time as the objectives of the Directive are being reached.

39 *Remark:*

Regulation 765/2008/EC on accreditation and market surveillance entered into force on 1 January 2010

The Regulation applies to all products subject to Union harmonisation legislation (the "harmonised products") - regardless whether they are consumer or non-consumer products – in so far as there are no specific provisions with the same objective, nature or effect in other existing or future rules of Union harmonisation legislation; within this scope, it protects not only the health and safety of consumers, but also other public interests, such as health and safety of users in the workplace, the environment, the sustainable use of energy, etc.

Hence, there are clearly defined areas with no overlap between the GPSD and the Regulation: the area of non-harmonised consumer products is subject to the rules of the GPSD, the area of harmonised non-consumer products is subject to the Regulation, and the area of non-harmonised non-consumer products is not subject to either of these two horizontal instruments.

As regards the protection of the health and safety of consumers, however, the area of harmonised consumer products comes under the market surveillance provisions of both the GPSD and the Regulation.

In order to clarify which market surveillance provisions of the GPSD and the Regulation are applicable to harmonised consumer products, Article 15 (3) has been integrated into the Regulation. It states that “[t]he application of Regulation 765/2008 shall not prevent market surveillance authorities from taking more specific measures as provided for in the GPSD”.

This means that all the market surveillance provisions of the Regulation, i.e. Articles 16 to 26, apply to harmonised consumer goods. In addition, any market surveillance provisions of the GPSD which contain "more specific measures" – when compared to the market surveillance provisions of the Regulation – also apply to harmonised consumer products. Other market surveillance provisions of the GPSD (which do not contain "more specific measures" than the Regulation) do not apply to harmonised consumer products.

The market surveillance provisions of the GPSD which correspond to provisions of the Regulation and thus need to be examined to determine whether they contain "more specific measures" are: Chapter IV – Specific obligations and powers of the Member States (Articles 6 to 9 of the GPSD), Chapter V – Exchanges of information and rapid intervention situations (Articles 11 and 12 of the GPSD) and Chapter VII – Final provisions (Articles 16 and 18 of the GPSD).

Following a detailed comparison of these provisions of the GPSD with the Regulation, the following have been identified as “more specific” than those in the Regulation:

- the measures provided for in Article 8(1 )(b) of the GPSD;
- the measures provided for in Article 8(1 )(c) of the GPSD;

- the measures provided for in Article 8(1 )(d) of the GPSD;
- any accompanying measures adopted to ensure that a marketing ban is complied with, as provided for in Article 8(1 )(e) of the GPSD;
- recalls and destruction of products, as provided for in Article 8(l)(f)(ii) of the GPSD, in relation to products that are dangerous without presenting a serious risk;
- encouragement and promotion of voluntary action by producers and distributors, including where applicable by the development of codes of good practice, as provided for in Article 8(2), second subparagraph, of the GPSD;
- active information of consumers and other interested parties on complaint procedures, as provided for in Article 9(2) of the GPSD;
- giving the public access to information on product identification, the nature of the risk and the measures taken, as provided for in Article 16(1), first subparagraph, second sentence, of the GPSD.
- RAPEX notification of measures restricting or imposing specific conditions on the possible marketing or use of products by reason of serious risk (not amounting to a recall, withdrawal or prohibition of being made available on the market), as provided for in Article 12(1), first subparagraph, of the GPSD;

## **ANNEX I ADDITIONAL INFORMATION**

### **ADDITIONAL EUROPEAN UNION LEGISLATION AFFECTING ELECTRICAL PRODUCTS**

[http://ec.europa.eu/enterprise/sectors/electrical/documents/additional-legislation/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/electrical/documents/additional-legislation/index_en.htm)

### **INDUSTRY SECTORS**

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

### **ELECTRICAL ENGINEERING**

(Legislation, Guidance, References of National Transposition Measures, Standardisation, Contact Points, Notified Bodies etc)

[http://ec.europa.eu/enterprise/sectors/electrical/documents/lvd/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/electrical/documents/lvd/index_en.htm)

[http://ec.europa.eu/enterprise/sectors/electrical/documents/emc/index\\_en.htm](http://ec.europa.eu/enterprise/sectors/electrical/documents/emc/index_en.htm)







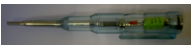
### **GUIDE TO THE IMPLEMENTATION OF DIRECTIVES BASED ON NEW APPROACH AND GLOBAL APPROACH**

<http://ec.europa.eu/enterprise/policies/single-market-goods/documents/blue-guide/>

## ANNEX II

### EXAMPLES OF PRODUCTS WITHIN OR OUTSIDE THE SCOPE OF LVD

Products	Scope of LVD	Examples of products	Comments
Plugs 230 V for domestic use	No		1
Socket outlets 230 V for domestic use	No		1, 4
Luminaire plugs and socket outlets for domestic use			2
Appliance couplers –plugs, -outlets	Yes		E.g. Standard EN 60320
Appliance couplers for industrial purposes	Yes		E.g. Standard EN 60309
Appliance couplers e.g. vehicle heater i.e. manufacturer fabricated standard	Yes		3 It shall not be interconnectable with other plugs or socket outlets
Cables	Yes		Marked with HAR to increase the tractability
Components	-	-	For more information read paragraph 9 in LVD Guidelines
Cord extension sets Plug + cable + socket outlet with or without passive components	Yes		3
Cord sets and interconnection cord sets Plug + cable + cord set	Yes		3
Installations enclosures and conduits	Yes	-	
Insulating tape	No	-	
Plug with multiple way socket outlets	No		1
Multiple travel adaptors	Yes		

Multiple travel adaptors with supply (e.g. charger for mobile phones or music player)	Yes		
Simple travel adaptors	No		1
Plug with one or more socket outlets with incorporated electronic dimmer or twilight dimmer	Yes		3
Product with integrated plug and/or outlets. 230V for domestic use (e.g. charger for mobile phones, night lights)	Yes		3
Switches for households and similar fixed electrical installations	Yes		4
Tools for working with live parts	No		E.g. Standard EN 60900
Voltage detector	Yes		E.g. Standard EN 61243





1. The safety of these products, with or without fuse, is governed by the GPSD.
2. If they fall within the scope of EN 61995, the LVD is applicable. If they do not fall within the scope of EN 61995, the GPSD is applicable.
3. The safety of domestic plugs attached to the electrical equipment (ex to the cord extension) is governed by the GPSD. Thus Member States may apply their national safety regulations or standards on plugs.
4. See also: Socket outlet with Switch.

### Socket outlet with Switch

In countries with the system, Type E and Type F socket outlet are generally supplied without a switch, those with switches generally being a socket outlet assembly and a switch assembly supplied as a common assembly, these should be CE-marked. In countries with Type K, the socket outlet is delivered both as an integrated unit build together with a switch and as a single modular socket outlet without a switch. In countries with the system Type G system generally use a switched socket outlet. In Type G and Type K systems, switched socket outlets being a complete assembly, i.e. a single product, only used as a part of the National plug and socket

outlet system and therefore being excluded from the LVD and as a consequence of this should **not** be CE-marked.

**Figure**

Type E	Type F “Schuko”
	
Belgium, Czech Republic, Denmark, France, Poland, Slovakia	Austria, Bulgaria, Estonia, Finland, Germany, Greece, Hungary, Island, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Romania, Slovenia, Spain, Sweden.
Type G	Type K
	
Cyprus, Ireland, Malta, United Kingdom.	Denmark

## ANNEX III

### CRITERIA APPLIED FOR THE ALLOCATION OF PRODUCTS COVERED BY STANDARDS IN THE EN 60335 SERIES UNDER LVD OR MD

The criteria have been prepared by CLC/TC 61 based on the discussions with the group of experts set up by the EU Commission to manage the application of the Machinery Directive 2006/42/EC.

The following assumptions have been agreed:

- the new MD is product related and not risk related;
- both LVD and MD are total safety directives covering all types of risks; as consequence CENELEC standards deal with total safety of electrotechnical products (and not with “electrotechnical safety” of products only);
- household appliances intended for domestic use, in the sense of first dashed item in Art 1 k) of 2006/42/EC are:
  - appliances to be used in the home environment and appliances intended to be used by laymen in similar applications, such as: shops, offices and other working environments; in farm houses and by clients in hotels, motels and other residential type environment, in bed and breakfast type environments;
  - appliances without moving parts are NOT considered as machines (according to first dashed item of Article 2 (a) of 2006/42/EC);

NOTE Moving parts are those powered by a drive system using one or more sources of energy such as thermal, electric, pneumatic, hydraulic or mechanical energy, independently of the size of the drive system or of the moving part or on the protection to the accessibility to the moving part. Moving parts are also those for which manual effort is not applied directly but stored, for example, in springs or in hydraulic or pneumatic accumulators.

- it was acknowledged that it is possible to publish a given standard under both directives (LVD and MD) provided that the standard clearly states in its body, a reference to the Directives that were considered in its drafting and there is a clear indication of the applicable Directive through what is stated in Annex ZZ and in a specific Annex ZE with specific requirements applicable to a given Directive;
- while there is absolutely no reason for safety issues, in conclusion and far from simplification, a wrong interpretation of the borderline would trigger a lot of confusion in the relationship between legislation and standards and also in their application;



- there is a need to ensure consistent and coordinated answers to the needs of Standards users and to have clear and coordinated positions at Commission and Market Surveillance Authorities level;
- efforts have to be made to be as much as possible in line with the work already done at international level within IEC, in order to avoid contradiction and undue deviations from world-wide recognized safety standards and worldwide recognition of certificates issued under the IECEE CB Scheme (the so called “one stop shopping”);
- the “Guidelines on the application of Directive 2006/95/EC” and the “Guide to application of Directive 2006/42/EC on machinery” have been considered when drafting this list.

The following Table shows the list of standards under CLC/TC 61 with the consequent allocation of standards under LVD or MD. **Some standards support both LVD and MD because they cover a range of products of which some come under the LVD and others under the MD.**

TABLE

Standard reference	To be listed under LVD (2006/95/EC)	To be listed under MD (2006/42/EC)
EN 50410, Decorative robots	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 50416, Commercial electric conveyor dishwashing machines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 50569, Commercial spin extractors	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 50570, Commercial tumble dryers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 50571, Commercial washing machines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
prEN 50xxx, Commercial ironers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-1, General requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-2, Vacuum cleaners and water-suction cleaning appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-3, Electric irons	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-4, Spin extractors	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-5, Dishwashers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-6, Stationary cooking ranges, hobs, ovens and similar appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-7, Washing machines	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-8, Shavers, hair clippers and similar appliances	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-9, Grills, toasters and similar portable cooking appliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-10, Floor treatment machines and wet scrubbing machines	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-11, Tumble dryers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-12, Warming plates and similar appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-13, Deep fat fryers, fryers, frying pans and similar appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-14, Kitchen machines	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-15, Appliances for heating liquids	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-16, Food waste disposers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-17, Blankets, pads, clothing and similar flexible heating appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-21, Storage water heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-23, Appliances for skin or hair care	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-24, Refrigerating appliances, ice-cream appliances and ice-makers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-25, Microwave ovens, including combination microwave ovens	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-26, Clocks	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Standard reference	To be listed under LVD (2006/95/EC)	To be listed under MD (2006/42/EC)
EN 60335-2-27, Appliances for skin exposure to ultraviolet and infrared radiation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-28, Sewing machines	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-29, Battery chargers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-30, Room heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-31, Range hoods and other cooking fume extractors	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-32, Massage appliance	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-34, Motor-compressors	<input checked="" type="checkbox"/> LVD equipment for incorporation in machinery	<input type="checkbox"/>
EN 60335-2-35, Instantaneous water heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-36, Commercial electric cooking ranges, ovens, hobs and hob elements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-37, Commercial electric deep fat fryers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-38, Commercial electric griddles and griddle grills	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-39, Commercial electric multi-purpose cooking pans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-40, Electrical heat pumps, air-conditioners and dehumidifiers	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-41, Pumps	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-42, Commercial electric forced convection ovens, steam cookers and steam convection ovens	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-43, Clothes dryers and towel rails	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-44, Ironers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-45, Portable heating tools and similar appliances	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-47, Commercial electric boiling pans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-48, Commercial electric grillers and toasters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts

Standard reference	To be listed under LVD (2006/95/EC)	To be listed under MD (2006/42/EC)
EN 60335-2-49, Commercial electric appliances for keeping food and crockery warm	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-50, Commercial electric bains-marie	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-51, Stationary circulation pumps for heating and service water installations	<input checked="" type="checkbox"/> LVD equipment for incorporation in machinery	<input type="checkbox"/>
EN 60335-2-52, Oral hygiene appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-53, Sauna heating appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-54, Surface-cleaning appliances for household use employing liquids or steam	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-55, Electrical appliances for use with aquariums and garden ponds	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-56, Projectors and similar appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-58, Commercial electric dishwashing machines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-59, Insect killers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-60, Whirlpool baths and whirlpool spas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-61, Thermal-storage room heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-62, Commercial electric rinsing sinks	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-64, Commercial electric kitchen machines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-65, Air-cleaning appliances	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-66, Water-bed heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-67, Floor treatment and floor cleaning machines for commercial use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-68, Spray extraction appliances, for commercial use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-69, Wet and dry vacuum cleaners, including power brush, for commercial use	<input type="checkbox"/>	<input checked="" type="checkbox"/> to include centralised vacuum cleaners installed in commercial environment
EN 60335-2-70, Milking machines	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-71, Electrical heating appliances for breeding and rearing animals	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts

Standard reference	To be listed under LVD (2006/95/EC)	To be listed under MD (2006/42/EC)
EN 60335-2-72, Automatic machines for floor treatment for commercial use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-73, Fixed immersion heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-74, Portable immersion heaters	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-75, Commercial dispensing appliances and vending machines	<input checked="" type="checkbox"/> For appliances with only heating parts	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-76, Electric fence energizers	<input type="checkbox"/> excluded from LVD	<input type="checkbox"/>
EN 60335-2-78, Outdoor barbecue	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-79, High pressure cleaners and steam cleaners	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-80, Fans	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-81, Foot warmers and heating mats	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-82, Amusement machines and personal service machines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For some appliances with moving parts (e.g. kiddie rides and shoes shining appl.)
EN 60335-2-83, Heated gullies for roof drainage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-84, Toilets	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-85, Fabric steamers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-86, Electric fishing machines	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With combustion motor generators
EN 60335-2-87, Electrical animal-stunning equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-88, Humidifiers intended for use with heating, ventilation, or air-conditioning systems	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-89, Commercial refrigerating appliances with an incorporated or remote refrigerant condensing unit or compressor	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-90, Commercial microwave ovens	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> With moving parts
EN 60335-2-95, Drives for vertically moving garage doors for residential use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-96, Flexible sheet heating elements for room heating	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Standard reference	To be listed under LVD (2006/95/EC)	To be listed under MD (2006/42/EC)
EN 60335-2-97, Drives for rolling shutters, awnings, blinds and similar equipment	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-98, Humidifiers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-99, Commercial electric hoods	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-101, Vaporizers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-102, Gas, oil and solid-fuel burning appliances having electrical connections	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> For commercial use
EN 60335-2-103, Drives for gates, doors and windows	<input type="checkbox"/>	<input checked="" type="checkbox"/>
EN 60335-2-105, Multifunctional shower cabinets	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-106, Heated carpets and heating units for room heating installed under removable floor coverings	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EN 60335-2-108, Particular requirements for electrolyzers	<input checked="" type="checkbox"/> LVD equipment for incorporation in machinery	<input type="checkbox"/>
EN 60335-2-109, Particular requirements for UV radiation water treatment appliances	<input checked="" type="checkbox"/>	<input type="checkbox"/>
prEN 60335-2-110, Particular requirements for commercial microwave appliances with insertion or contacting applicators	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>NOTE 1 This table covers CENELEC standards intended for household and commercial appliances. Where it was mentioned that the standard covered also industrial appliances (e.g. EN 60335-2-69:2003) the reference to (light) industrial appliances has been removed from the title and the text of the relevant standard (e.g. EN 60335-2-69:2009).</p> <p>NOTE 2 When nothing is mentioned in the title of the standard the appliance is considered to be for household use in the home environment.</p>		