

**Household and similar electrical appliances -  
Safety -  
Part 1: General requirements  
(IEC 60335-1:2010, modified)**

Appareils électrodomestiques et analogues -  
Sécurité -  
Partie 1: Exigences générales  
(CEI 60335-1:2010, modifiée)

Sicherheit elektrischer Geräte für den  
Hausgebrauch und ähnliche Zwecke -  
Teil 1: Allgemeine Anforderungen  
(IEC 60335-1:2010, modifiziert)

This European Standard was approved by CENELEC on 2011-11-21. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

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## Foreword

This document (EN 60335-1:2012) consists of the text of IEC 60335-1:2010 prepared by IEC/TC 61 "Safety of household and similar electrical appliances", together with the common modifications prepared by CLC/TC 61, "Safety of household and similar electrical appliances".

The following dates are fixed:

- latest date by which this document has to be implemented (dop) 2012-11-21  
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2014-11-21

This document supersedes EN 60335-1:2002 + corr. Jul.2009 + corr. May.2010 + A1:2004 + A2:2006 + A11:2004 + A12:2006 + A13:2008 + A14:2010 + A15:2011 + corr. Jan.2007 + corr. Feb.2007.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60335-1:2010 are prefixed "Z".

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

This part of EN 60335 is to be used in conjunction with the appropriate Part 2. The Parts 2 contain clauses to supplement or modify the corresponding clauses in Part 1 to provide the relevant requirements for each type of appliance.

NOTE 1 The following annexes contain provisions suitably modified from other IEC standards:

- |           |                               |                             |
|-----------|-------------------------------|-----------------------------|
| – Annex E | Needle flame test             | EN 60695-11-5               |
| – Annex F | Capacitors                    | EN 60384-14                 |
| – Annex G | Safety isolating transformers | EN 61558-1 and EN 61558-2-6 |
| – Annex H | Switches                      | EN 61058-1                  |
| – Annex J | Coated printed circuit boards | EN 60664-3                  |
| – Annex N | Proof tracking test           | EN 60112                    |

NOTE 2 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3. When a definition concerns an adjective, the adjective and associated noun are also in bold.

Special national conditions causing a deviation from this European Standard are listed in Annex ZA.

National deviations from this European Standard are listed in Annex ZB.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

### **Endorsement notice**

The text of the International Standard IEC 60335-1:2010 was approved by CENELEC as a European Standard with common modifications.

## COMMON MODIFICATIONS

## Introduction

*Add after NOTE 1 the following sentence:*

For appliances not covered by a particular Part 2 of EN 60335 additional consideration may need to be given to particular categories of likely users, including vulnerable people and children and to related specific risks (e.g. access to live parts, or to hot surfaces or to moving parts) that may be covered by a particular Part 2 considered to be closest to the product under examination.

*Add:*

The principal objectives of the Low Voltage Directive, 2006/95/EC, are covered by this standard. The essential safety requirements of the following directives, which can be applicable to some household and similar appliances, have also been taken into account:

- 2006/42/EC – Machinery directive;
- 89/106/EEC – Construction products directive;
- 97/23/EC – Pressure equipment directive.

The Essential Health and Safety Requirements (EHSR) of the Directive 2006/42/EC are covered by Annex ZE. The application of EN 60335-1 alone does not give presumption of conformity for a product. This is achieved by complying with the requirements of EN 60335-1 and the relevant Part 2, when this Part 2 is also listed in the OJ under the Directive.

## 1 Scope

*Replace the scope with the following:*

This European Standard deals with the safety of electrical appliances for household environment and commercial purposes, their **rated voltage** being not more than 250 V for single-phase and 480 V for others. .

NOTE 1 Battery-operated appliances and other d.c. supplied appliances are within the scope of this standard.

NOTE Z1 Examples of appliance for household environment are appliances for typical housekeeping functions used in the household environment that may also be used by non expert users for typical housekeeping functions:

- in shops, offices and other similar working environments;
- in farm houses;
- by clients in hotels, motels and other residential type environments;
- in bed and breakfast type environments.

NOTE Z2 Household environment includes the dwelling and its associated buildings, the garden, etc.

Appliances and machines intended to be used by expert or trained users in shops, in light industry and on farms, and appliances and machines which are declared to be for commercial use by lay persons are within the scope of this standard.

Additional requirements for such appliances are given in Annex ZE.

NOTE 2 Text deleted.

NOTE Z3 Examples of such appliances and machines are catering equipment, cleaning machines for commercial use, and appliances for hairdressers.

NOTE Z4 Criteria applied for the allocation of products covered by standards in the EN 60335 series under either the Low Voltage Directive (LVD) or the Machinery Directive (MD) are given for information in Annex ZF.

This standard deals with the reasonably foreseeable hazards presented by appliances and machines that are encountered by all persons.

However, in general, it does not take into account:

- **children** playing with the appliance;
- the use of the appliance by **very young children**;
- the use of the appliance by **young children** without supervision.

It is recognized that **very vulnerable people** may have needs beyond the level addressed in this standard.

NOTE 3 Attention is drawn to the fact that

- for appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary;
- in many countries additional requirements are specified by the national health authorities, the national authorities responsible for the protection of labour, the national water supply authorities and similar authorities.

NOTE 4 This standard does not apply to

- appliances intended exclusively for industrial purposes;
- appliances intended to be used in locations where special conditions prevail, such as the presence of a corrosive or explosive atmosphere (dust, vapour or gas);
- audio, video and similar electronic apparatus (IEC 60065);
- appliances for medical purposes (IEC 60601);
- hand-held motor-operated electric tools (IEC 60745);
- personal computers and similar equipment (IEC 60950-1);
- transportable motor-operated electric tools (IEC 61029).

## 2 Normative references

Add the following reference:

IEC/TR 60083:2009, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC*

**Add the following references:**

EN 50366:2003, *Household and similar electrical appliances - Electromagnetic fields - Methods for evaluation and measurement*

CLC/TR 50417, *Safety of household and similar electrical appliances – Interpretations related to European Standards within the scope of CENELEC/TC 61*

EN 62233, *Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure* (IEC 62233)

**Add** the following references:

EN 41003, *Particular safety requirements for equipment to be connected to telecommunication networks and/or a cable distribution system*

**Remove** the following reference :

IEC 62151, *Safety of equipment electrically connected to a telecommunication network*

### 3 Terms and definitions

**3.1** Add as a first paragraph:

When the term “appliance” is used, it is intended to cover appliances and/or machines for household use and appliances and/or machines for commercial use.

#### **3.6.3** **accessible part**

*Modification:*

Insert “and probe 18” after “test probe B”.

*Add the following new definitions:*

#### **3.Z.1** **children**

young persons comprising **very young children**, **young children** and **older children**

#### **3.Z.2** **very young children**

young persons aged from 0 up to and including 3 years

#### **3.Z.3** **young children**

young persons older than 3 years and younger than 8 years

#### **3.Z.4** **older children**

young persons aged from 8 years up to and including 14 years

#### **3.Z.5** **vulnerable people**

persons having reduced physical, sensory or mental capabilities (e.g. partially disabled, elderly having some reduction in their physical and mental capabilities), or lack of experience and knowledge (e.g. older children)

#### **3.Z.6** **very vulnerable people**

persons having very extensive and complex disabilities

#### **3.Z.7** **use of the appliance**

all actions required to have the appliance perform its intended function, such as plugging in, switching on, using, regulating, cleaning the appliance or performing **user maintenance**

NOTE Z1 Children are not expected to perform cleaning or user maintenance of the appliance, very young children are not expected to use appliances, young children are not expected to use appliances safely unless continuous supervision is

given, older children and vulnerable people can use appliances safely after they have been given appropriate supervision or instruction concerning use of the appliance.

NOTE Z2 Very vulnerable people are not expected to use appliances safely unless continuous supervision is given or appliances are adapted accordingly with arrangements beyond the scope of this standard.

## 4 General requirement

*Add at the end:*

*The interpretations included in CLC/TR 50417 shall be taken into consideration together with the relevant requirements in the standards listed therein.*

## 6 Classification

p 6.1 Delete "class 0" and "class 0I".

## 7 Marking and instructions

7.1 *Add:*

The marking of **rated voltage** or **rated voltage range**, for appliances intended to be connected to the supply mains, shall cover:

- 230 V for single-phase appliances;
- 400 V for multi-phase appliances.

7.10 *Add the following before the compliance paragraph:*

Devices used to start/stop operational functions of the appliance, if any, shall be distinguished from other manual devices by means of shape, or size, or surface texture, or position, etc.

An indication that the device has been operated shall be given by:

- A tactile feedback or
- An audible and visual feedback.

NOTE Z1 The sound of the motor or sound of an actuator switching ON/OFF is regarded as audible feedback. The stopping of the typical function (e.g. stopping of the vibration on the body of the appliance or of a part of it) is regarded as tactile means.

NOTE Z2 Devices used to start/stop operational functions mean devices that are operated by the user to start/stop the intended function of the appliance.

A selector switch with an off-position clearly identifiable is allowed.

An ON/OFF switch, if any, is considered a suitable device to stop operational functions. A plug is not considered a suitable device to stop operational functions, as it can be difficult to be reached by vulnerable persons.

7.12 *Replace the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> paragraph by the following:*

The instructions shall include the substance of the following:

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall

not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Add the following new subclause before 7.12.1:

**7.12.Z1** The specific instructions related to the safe operation of this appliance (as given in 7.12 of this standard) shall be collated together in the front section of the user instructions. The height of the characters, measured on the capital letters, shall be at least 3 mm.

These instructions shall also be available in an alternative format, e.g. on a website

**7.14** Add:

NOTE Z1 For the evaluation of legibility and clarity of safety warnings guidance can be found in IEC 62079.

## 8 Protection against access to live parts

**8.1.1** Replace the 3<sup>rd</sup> paragraph by the following:

*Test probe B and probe 18 of EN 61032 are applied with a force not exceeding 1 N, the appliance being in every possible position. Through openings, the test probe is applied to any depth that the probe will permit and is rotated or angled before, during and after insertion to any position. If the opening does not allow the entry of the probe, the force on the probe in the straight position is increased to 20 N when probe B is used or 10 N when probe 18 is used. If the probe then enters the opening, the test is repeated with the probe in the angled position. However when using test probe 18 the appliance shall be fully assembled as in normal use without any parts removed; parts that are intended to be removed for user maintenance shall not be removed.*

### 8.2 Modification

In the third sentence, replace "test probe B of EN 61032" by "test probes of EN 61032".

In the fourth sentence, replace "test probe B of EN 61032 is" by "test probe B and probe 18 of EN 61032 are".

## 11 Heating

**11.8** Delete the second sentence of the first paragraph.

Replace in Table 3 the row "External enclosure of **motor-operated appliances**, except handles held in normal use" with the following:

External enclosure of <b>motor-operated appliances</b> except handles held in normal use <sup>za, zb</sup> :	
– of bare metal	50
– of coated metal <sup>zc</sup>	60
– of glass and ceramic	65
– of plastic having a thickness exceeding 0,3 mm <sup>zd</sup>	75

Add the following footnotes

<sup>za</sup> Values for temperature rises of accessible parts in case of appliances that may be used by vulnerable people are given in relevant Parts 2.

<sup>zb</sup> When the thickness of plastic coating does not exceed 0,3 mm, the temperature rise limits of coated metal or glass and ceramic apply.



<sup>zc</sup> Metal is considered coated when a coating having a minimum thickness of 80 µm made by enamel or non substantially plastic coating is used.

<sup>zd</sup> The temperature rise limit applies also for plastic material having a metal finish of thickness less than 0,1 mm.

## 15 Moisture resistance

### 15.1.2 Add the following after the second paragraph:

Appliances with an automatic cord reel are tested with the cord in the most unfavourable position in such a way that the reeling of the wet cord may affect electrical insulation during operation. The cord shall not be dried before reeling.

## 20 Stability and mechanical hazards

### 20.2 Replace NOTE 1 by the following requirement:

For appliances having dangerous movable parts, due to their main function, e.g. the needle of a sewing machine, tools of kitchen machines or the blade of an electrical knife, full protection is not possible for performing their intended use.

NOTE 1 Void

Replace the 1<sup>st</sup> paragraph of compliance by:

Compliance is checked by inspection, by the tests of 21.1 and by means of

- a test probe that is similar to test probe B of EN 61032 but having a circular stop face with a diameter of 50 mm, instead of the non circular face, applied with a force of 5N with the accessories and detachable covers removed and
- test probe 18 of EN 61032, applied with a force of 2,5N on the appliance in a fully assembled situation.

## 22 Construction

### 22.12 Add the following note after the first sentence in the first paragraph

NOTE Z1 Hazard includes ingestion or a choking hazard for **vulnerable people**.

## 24 Components

### 24.1 Replace by:

Components shall comply with the safety requirements specified in the relevant standards as far as they reasonably apply.

NOTE Z1 Compliance with the standard for the relevant component does not necessarily ensure compliance with the requirements of this standard.

NOTE Z2 Motors are not required to comply with IEC 60034-1.

Unless otherwise specified, the requirements of Clause 29 of this standard apply between **live parts** of components and **accessible parts** of the appliance.

Unless otherwise specified, the requirements of 30.2 of this standard apply to parts of non-metallic material in components including parts of non-metallic material supporting current-carrying connections inside components.

Components that have not been previously tested or do not comply with the standard for the relevant component are tested according to the requirements of 30.2 of this standard.

Components that have been previously tested and shown to comply with the resistance to fire requirements in the standard for the relevant component need not be retested provided that:

- the severity specified in the component standard is not less than the severity specified in 30.2 of this standard,

and

- unless the preselection alternative is used, the test report for the component states whether it complied with the standard for the relevant component with or without flame. Flames existing for a cumulative time not exceeding 2 s during the test are ignored.

If the above two conditions are not satisfied, the component is tested as part of the appliance.

There are two levels of severity specified for appliances for which 30.2.3 is applicable.

*Unless components have been previously tested and found to comply with the relevant standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9. For components mentioned in 24.1.1 to 24.1.9, no additional tests specified in the relevant standard for the component are necessary other than those specified in 24.1.1 to 24.1.9.*

*Components that have not been separately tested and found to comply with the relevant standard and components that are not marked or not used in accordance with their marking, are tested in accordance with the conditions occurring in the appliance, the number of samples being that required by the relevant standard.*

NOTE Z3 For automatic controls, marking includes documentation and declaration as specified in Clause 7 of EN 60730-1:2000.

*Lamp holders and starter holders that have not been previously tested and found to comply with the relevant standard are tested as a part of the appliance and shall additionally comply with the gauging and interchangeability requirements of the relevant standard under the conditions occurring in the appliance. Where the relevant standard specifies these gauging and interchangeability requirements at elevated temperatures, the temperatures measured during the tests of Clause 11 are used.*

*There are no additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309, unless they are specifically mentioned in the text of this standard.*

Plugs and socket-outlets and other connecting devices of interconnection cords shall not be interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1, if direct supply to these parts from the supply mains could give rise to a hazard.

*When a standard does not exist for a component, there are no additional tests specified.*

**24.1.3** Add the following new note after the note:

NOTE Z1 For this test a thermostat or timer that is operating the relay or contactor is considered to be a switch.

**24.1.7** **Replace by:**

**24.1.7** If the **remote operation** of the appliance is via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is EN 41003.

Compliance with Clause 8 of this standard shall not be impaired by connecting the appliance to a device covered by EN 41003.

*Add the following subclause:*

**24.Z1** For motor running capacitors (IEC 60252-1 type P2) with a metallic enclosure having an overpressure fuse the flame testing of internal plastic parts supporting current carrying connections as required in 30.2.2 and 30.2.3.1 is not necessary.

## **25 Supply connection and external flexible cords**

### **25.6 Add:**

**Supply cords** of single-phase **portable appliances** having a **rated current** not exceeding 16 A shall be fitted with a plug complying with the following standard sheets of IEC/TR 60083.

- for **class I appliances** standard sheet C2b, C3b or C4;
- for **class II appliances** standard sheet C5 or C6.

### **25.7 Add the content of NOTE 1 to the requirement as follows:**

Their properties shall be at least those of ordinary tough rubber sheathed cords (code designation 60245 IEC 53). These cords are not suitable for appliances intended to be used outdoors or when they are liable to be exposed to significant amounts of ultraviolet radiation.

*Add the following text after the last dash and before the paragraph regarding "Supply cords for class III appliances":*

- Halogen-free thermoplastic compound sheathed.

Their properties shall be at least those of

- halogen-free thermoplastic compound sheathed cords (code designation H03Z1Z1H2-F, H03Z1Z1-F), for appliances having a mass not exceeding 3 kg;
- halogen-free thermoplastic compound sheathed cords (code designation H05Z1Z1H2-F or H05Z1Z1-F), for other appliances;

- Cross-linked halogen-free compound sheathed.

Their properties shall be at least those of cross-linked halogen-free compound sheathed cords (code designation H07ZZ-F).

*Add the following note:*

NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.

## **26 Terminals for external conductors**

### **26.11 Add after the second sentence in the first paragraph:**

Conductors connected by soldering are not considered to be positioned or fixed so that reliance is not placed upon the soldering alone to maintain them in position unless they are held in place near the terminals independently of the solder

## **29 Clearances, creepage distances and solid insulation**

### **29.1 Modification:**

*Replace NOTE 5 by:*

NOTE 5 Attention is drawn on the fact that for appliances intended for use at altitudes exceeding 2 000 m, the altitude correction factors, relevant to the intended altitude, for clearances specified in Table A.2 of EN 60664-1:2007 may need to be taken into account.

*Add the following subclause:*

**29.3.Z1** Appliance shall be constructed so that if there is a possibility of damaging the insulation during installation, the insulation shall withstand the scratch and penetration test of 21.2.

## **32 Radiation, toxicity and similar hazards**

*Add at the end:*

*Compliance regarding electromagnetic fields is checked according to EN 50366 or EN 62233..*

### **Annex I (normative) Motors having basic insulation that is inadequate for the rated voltage of the appliance**

**19.I.101** *Replace the first sentence by:*

*The appliance is supplied at **rated voltage** and operated under **normal operation** with each of the following fault conditions:*

*Add the following before the note:*

*When any of the fault conditions are simulated, the duration of the test is as specified in 19.7.*

Add the following annexes

## Annex ZA (normative)

### Special national conditions

**Special national condition:** National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the European Standard.

For the countries in which the relevant special national conditions apply, these provisions are normative. For other countries they are informative.

<u>Clause</u>	<u>Special national condition</u>
<b>19.5</b>	<b>Norway</b> The test is also applicable to appliances intended to be permanently connected to fixed wiring.
<b>22.2</b>	<b>Norway</b> The second paragraph of this subclause, that deals with single-phase, permanently connected class I appliances having heating elements, is not applicable due to the supply system.
<b>25.6 and 25.25</b>	Information concerning National plug and socket-outlets is available from the CENELEC website, under the following hyperlink: <b><u><a href="ftp://ftp.cenelec.eu/CENELEC/TCs/61/PlugsSockets.pdf">ftp://ftp.cenelec.eu/CENELEC/TCs/61/PlugsSockets.pdf</a></u></b> Normative national requirements concerning plug and socket-outlets are shown in the relevant National standard.
<b>25.8</b>	<b>Ireland and United Kingdom</b> In the table, replace the line for 10 A and 16 A by: > 10 and ≤ 13    1,25 > 13 and ≤ 16    1,5.

## **Annex ZB** (informative)

### **A-deviations**

**A-deviation:** National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC national member.

This European Standard/Harmonization Document falls under the EU Directives 2006/95/EC and 2006/42/EC.

NOTE (from CEN/CENELEC IR Part 2:2006, 2.17) Where standards fall under EC Directives, it is the view of the Commission of the European Communities (OJ No C 59, 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

A-deviations in an EFTA-country are valid instead of the relevant provisions of the European Standard/Harmonization Document in that country until they have been removed.

<u>Clause</u>	<u>Deviation</u>
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<b>25.6</b>	<b>Ireland</b> (Statutory Instrument No. 525 of 1997)
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These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs complying with I.S. 401:1997, or equivalent, to be fitted to domestic appliances.

<b>25.6</b>	<b>United Kingdom</b> (Statutory Instrument 1994 No 1768)
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These regulations apply to all plugs for domestic use at a voltage of not less than 200 V and in general allow only plugs to BS 1363 to be fitted to domestic appliances. It also allows plugs to BS 4573 and EN 50075 to be fitted to shavers and toothbrushes.

NOTE: Information concerning National plug and socket-outlets is available from the CENELEC website, under the following hyperlink: <ftp://ftp.cenelec.eu/CENELEC/TCs/61/PlugsSockets.pdf>.

Normative national requirements concerning plug and socket-outlets are shown in a relevant National standard.

## Annex ZC (normative)

### Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
-	-	Particular safety requirements for equipment to be connected to telecommunication networks and/or a cable distribution system	EN 41003	-
-	-	Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) – Part 3-11: Cables with special fire performance - Flexible cables with halogen-free thermoplastic insulation, and low emission of smoke	EN 50525-3-11 <sup>1)</sup>	-
-	-	Electric cables - Low voltage energy cables of rated voltages up to and including 450/750 V (U0/U) – Part 3-21: Cables with special fire performance - Flexible cables with halogen-free crosslinked insulation, and low emission of smoke	EN 50525-3-21 <sup>2)</sup>	-
-	-	Household and similar electrical appliances - Electromagnetic fields - Methods for evaluation and measurement	EN 50366	2003 <sup>3)</sup>
-	-	Safety of household and similar electrical appliances - Interpretations related to European Standards within the scope of CENELEC/TC 61	CLC/TR 50417	2010
IEC 60061-1 (mod)	-	Lamp caps and holders together with gauges for the control of interchangeability and safety - Part 1: Lamp caps	EN 60061-1	-
IEC 60065 (mod) + corr. August + A1 (mod)	2001 2002 2005	Audio, video and similar electronic apparatus - Safety requirements	EN 60065 + corr. August + A1 + A11	2002 2007 2006 2008
IEC 60065	2001	Audio, video and similar electronic apparatus - Safety requirements	-	-

<sup>1)</sup> EN 50525 series, which is related to, but not directly equivalent with the IEC 60227 series, applies instead.

<sup>2)</sup> EN 50525 series, which is related to, but not directly equivalent with the IEC 60245 series, applies instead.

<sup>3)</sup> EN 50366:2003 is superseded by EN 62233:2008.

IEC 60068-2-2	-	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	-
IEC 60068-2-31	-	Environmental testing - Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	-
IEC 60068-2-75	-	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	-
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	-
IEC 60083	1975	Plugs and socket-outlets for domestic and similar general use - Standards	-	-
IEC/TR 60083	2009	Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC	-	-
IEC 60085	2007	Electrical insulation - Thermal evaluation and designation	EN 60085	2008
IEC 60112 + corr. June + corr. October + A1	2003 2003 2003 2009	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112 + A1	2003 2009
IEC 60127	series	Miniature fuses	EN 60127	series
IEC 60227	series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements	-	-
IEC 60238	2004	Edison screw lampholders	EN 60238 + corr. January	2004 2005
IEC 60245	series	Rubber insulated cables - Rated voltages up to and including 450/750 V	-	-
IEC 60252-1	-	AC motor capacitors - Part 1: General - Performance, testing and rating - Safety requirements - Guide for installation and operation	EN 60252-1	-
IEC 60309	series	Plugs, socket-outlets and couplers for industrial purposes	EN 60309	series
IEC 60320-1	-	Appliance couplers for household and similar general purposes - Part 1: General requirements	EN 60320-1	-
IEC 60320-2-2	-	Appliance couplers for household and similar general purposes - Part 2-2: Interconnection couplers for household and similar equipment	EN 60320-2-2	-
IEC 60320-2-3	-	Appliance couplers for household and similar general purposes - Part 2-3: Appliance coupler with a degree of protection higher than IPX0	EN 60320-2-3	-



IEC 60384-14	2005	Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2005
IEC 60417	Data-base	Graphical symbols for use on equipment	-	-
IEC 60529 + A1	1989 1999	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May + A1	1991 1993 2000
IEC 60598-1 (mod)	2008	Luminaires - Part 1: General requirements and tests	EN 60598-1 + A11	2008 2009
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003
IEC 60664-4	2005	Insulation coordination for equipment within low-voltage systems - Part 4: Consideration of high-frequency voltage stress	EN 60664-4 + corr. October	2006 2006
IEC 60691	-	Thermal-links - Requirements and application guide	EN 60691	-
IEC 60695-2-11 + corr. January	2000 2001	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001
IEC 60695-2-12	-	Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability test method for materials	EN 60695-2-12	-
IEC 60695-2-13	-	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignitability test method for materials	EN 60695-2-13	-
IEC 60695-10-2	-	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test	EN 60695-10-2	-
IEC 60695-11-5	2004	Fire hazard testing - Part 11-5: Test flames - Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	EN 60695-11-5	2005
IEC 60695-11-10	-	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	-

IEC 60730-1 (mod) + A1 (mod) + A2 (mod)	1999 2003 2007	Automatic electrical controls for household and similar use - Part 1: General requirements	EN 60730-1 + corr. August + A1 + A2 + A11 + A14 + A13 + A12 + A15 + A16 + corr. March	2000 2007 2004 2008 2002 2005 2004 2003 2007 2007 2010
IEC 60730-2-8 (mod) + A1 (mod)	2000 2002	Automatic electrical controls for household and similar use - Part 2-8: Particular requirements for electrically operated water valves, including mechanical requirements	EN 60730-2-8 + A1	2002 2003
IEC 60730-2-10	2006	Automatic electrical controls for household and similar use - Part 2-10: Particular requirements for motor starting relays	EN 60730-2-10	2007
IEC 60738-1	-	Thermistors - Directly heated positive temperature coefficient - Part 1: Generic specification	EN 60738-1	-
IEC 60906-1	-	IEC system of plugs and socket-outlets for household and similar purposes - Part 1: Plugs and socket-outlets 16 A 250 V a.c.	-	-
IEC 60990	1999	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw- type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm <sup>2</sup> up to 35 mm <sup>2</sup> (included)	EN 60999-1	2000
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	-
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	-
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	-
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	-

IEC 61000-4-6	-	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	-
IEC 61000-4-11	2004	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004
IEC 61000-4-13 + A1	2002 2009	Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	EN 61000-4-13 + A1	2002 2009
IEC 61000-4-34 + A1	2005 2009	Electromagnetic compatibility (EMC) - Part 4-34: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current more than 16 A per phase	EN 61000-4-34 + A1	2007 2009
IEC 61032 + corr. January	1997 2003	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61058-1 (mod) + corr. January + A1 + A2	2000 2009 2001 2007	Switches for appliances - Part 1: General requirements	EN 61058-1 - + A2 <sup>4)</sup>	2002 - 2008
IEC 61180-1	-	High-voltage test techniques for low-voltage equipment - Part 1: Definitions, test and procedure requirements	EN 61180-1	-
IEC 61180-2	-	High-voltage test techniques for low-voltage equipment - Part 2: Test equipment	EN 61180-2	-
IEC 61558-1 + corr. March + corr. March + A1	2005 2010 2008 2009	Safety of power transformers, power supplies, reactors and similar products - Part 1: General requirements and tests	EN 61558-1 + corr. August + A1	2005 2006 2009
IEC 61558-2-6	2009	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	2009
IEC 61770	-	Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets	EN 61770	-
IEC 62233 (mod)	-	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure	EN 62233	-

<sup>4)</sup> EN 61058-1 includes A1 to IEC 61058-1 (mod) + corr. January.

ISO 2768-1	-	General tolerances - Part 1: Tolerances for linear and angular dimensions without individual tolerance indications	-	-
ISO 7000	2004	Graphical symbols for use on equipment - Index and synopsis	-	-
ISO 9772 + A1	2001 2003	Cellular plastics - Determination of horizontal burning characteristics of small specimens subjected to a small flame	-	-
ISO 9773	1998	Plastics - Determination of burning behaviour of thin flexible vertical specimens in contact with a small-flame ignition source	EN ISO 9773	1998

**Annex ZD**  
(informative)

**IEC and CENELEC code designations for flexible cords**

**Table ZD.1 – IEC and CENELEC code designations for flexible cords**

Type of flexible cord	Code designations	
	IEC	CENELEC
<b>PVC insulated cords</b>		
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F
Ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 53	H05VV-F
Heat resistant light polyvinyl chloride sheathed flexible cord	60227 IEC 56	H03V2V2-F
Heat resistant ordinary polyvinyl chloride sheathed flexible cord	60227 IEC 57	H05V2V2-F
<b>Rubber insulated cords</b>		
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
<b>Cords having high flexibility</b>		
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	-

## **Annex ZE** (informative)

### **Specific additional requirements for appliances and machines intended for commercial use**

The following modifications to this standard are applicable for appliances and machines intended for commercial use.

#### **Introduction**

*Add:*

For the verification of compliance of appliances or machines intended for commercial use with the Essential Health and Safety Requirements (EHSR) of the Directive 2006/42/EC, the requirements in this Annex ZE will be modified by specific provisions in the relevant Parts 2.

When a specific Part 2 does not mention Annex ZE then Annex ZE of this EN 60335-1 is not applicable.

#### **1 Scope**

*Addition:*

This Annex deals with additional requirements concerning appliances and machines intended for commercial use by persons that have been trained on the use of such appliances and concerning appliances and machines which are declared to be for commercial use by lay persons.

#### **3 Terms and definitions**

*Add:*

##### **3.ZE1**

##### **guard**

part of the appliance specifically designed to provide protection by means of a physical barrier

##### **3.ZE2**

##### **operator**

person or persons installing, operating, adjusting, maintaining, cleaning, repairing or moving appliances

##### **3.ZE3**

##### **workstation**

place, as defined in the technical documentation of the relevant appliance, where the **operator** has to be in attendance to operate, or to adjust, or to control the appliance

NOTE Examples are the driving place of commercial cleaning machines or the location where the **operator** loads the conveyor of commercial conveyor dishwashing machines.

#### **4 General requirement**

*Replace the first paragraph by:*

Appliances shall be constructed so that they function safely so as to cause no danger to persons or surroundings during normal use, even in the event of carelessness, and during installation, adjusting, maintenance, cleaning, repairing or transportation.

## **7 Marking and instructions**

### **7.1** *Replace the fourth and fifth dashed items by:*

- business name and full address of the manufacturer and, where applicable, his authorized representative;
- model or type reference, serial number, if any, and production year;

NOTE ZE1 Production year is the year when the production process is completed. The production year can be a part of the serial number.

*Add a new dashed item:*

- designation of the appliance.

NOTE ZE2 The designation may be a combination of letters and/or numbers and shall enable to identify the machine as specified in the instructions.

### **7.12** *Replace the first sentence in the requirement by:*

Instructions shall be provided with the appliance so that the appliance can be used safely.

*Add:*

The instructions shall contain at least the following information:

- the business name and full address of the manufacturer and, where applicable, his authorized representative;
- model or type reference of the appliance as marked on the appliance itself, except for the serial number;
- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers.
- the general description of the appliance, when needed due to the complexity of the appliance;
- specific precautions if required during installation, operation, adjusting, user maintenance, cleaning, repairing or moving;
- when needed drawings, diagrams, descriptions and explanations necessary for the safe use and user maintenance of the appliance;
- the possible reasonably foreseeable misuse and, whenever relevant, a warning against the effects it may have on the safe use of the appliance;
- the designation of the appliance together with its explanation in case it is given by a combination of letters and/or numbers.

The words "Original instructions" shall appear on the language version(s) verified by the manufacturer or by the authorized representative.

When a translation of the original instructions has been provided by a person introducing the appliance on the market; the meaning of the sentence "Translation of the original instructions" has to appear in the relevant instructions delivered with the appliance.

The instructions for maintenance/service to be done by specialized personnel, mandated by the manufacturer or the authorized representative may be supplied in only one Community language which the specialized personnel understand.

The instructions shall indicate the type and frequency of inspections and maintenance required for safe operation including the preventive maintenance measures.

*Add the new following subclauses:*

**7.12.ZE1** Wherever needed for specific appliances, information shall be given:

- on use, transportation, assembly, dismantling when out of service, testing or foreseeable breakdowns, if these operations have consequences on stability of the appliance in order to avoid overturning, falling or uncontrolled movements of the appliance or of its component parts;
- on how to maintain adequate mechanical stability when in use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance;
- on the protective measures to be taken by the user, including, where appropriate, the personal protective equipment to be provided;
- on the operating method to be followed in the event of accident or breakdown; if a blockage is likely to occur the operating method to safely unblock the appliance;
- on the specifications on the spare parts to be used, when these affect the health and safety of the **operator**;
- on airborne noise emissions, determined and declared in accordance with the relevant Part 2.

This includes:

- the A-weighted emission sound pressure level at **workstations**, where this exceeds 70 dB(A); where this level does not exceed 70 dB(A), this fact shall be indicated,
- the peak C-weighted instantaneous sound pressure value at **workstations**, where this exceeds 63 Pa (130 dB in relation to 20 µPa),
- the A-weighted sound power level emitted by the machinery, where the A-weighted emission sound pressure level at **workstations** exceeds 80 dB(A).

**7.12.ZE2** The instructions shall include a warning that the appliance shall be disconnected from its power source during service and when replacing parts and, if that the removal of the plug is foreseen, it shall be clearly indicated that the removal of the plug has to be such that an operator can check from any of the points to which he has access that the plug remains removed.

If this is not possible, due to the construction of the appliance or its installation, a disconnection with a locking system in the isolated position shall be provided.

## **19 Abnormal operation**

**19.11.4.8** *Replace the second paragraph by:*

*The appliance shall continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage fluctuation occurred, or a manual operation shall be required to restart it.*

## **20 Stability and mechanical hazards**

**20.1** *Add at the end:*

Appliances and their components and fittings shall have adequate mechanical stability during transportation, assembly, dismantling and any other action involving the appliance.



*Compliance is checked by verifying the instructions and by the relevant tests, if necessary, as specified in the relevant Part 2.*

**20.2** *Replace the requirements and notes by:*

Dangerous moving transmission parts shall be safeguarded either by design or **guards**. When **guards** are used, they shall be fixed **guards**, interlocking movable **guards** or protective devices.

NOTE ZE1 Parts of the enclosure can fulfil the guarding function.

Moving parts directly involved in the function of the appliance which cannot be made completely inaccessible shall be fitted with:

- fixed **guards** or interlocking movable **guards** preventing access to those sections of the parts that are not used in the work; and
- adjustable **guards** restricting access to those sections of the moving parts where access is necessary.

Interlocking movable **guards** (e.g. the door of a washing machine) shall be used where frequent access is required.

## **21 Mechanical strength**

**21.1** *Replace the first paragraph by:*

Appliances and their components and fittings shall have adequate mechanical strength and be constructed to withstand such rough handling that may be expected in normal use, during transportation, assembly, dismantling, scrapping and any other action involving the appliance.

## **22 Construction**

*Add the following:*

**22.ZE.1** For appliances provided with a seat, the seat has to give adequate stability. The distance between the seat and the control devices shall be capable of being adapted to the **operator**.

*Compliance is checked by inspection.*

**22.ZE.2** For appliances provided with separate devices for the start and the stop functions, the stop function shall be unambiguously identifiable and shall always override the start function.

For appliances provided with one device performing the start and the stop function, the stop function shall be unambiguously identifiable and shall always override the start function.

*Compliance is checked by inspection and by manual test.*

**22.ZE.3** Appliances shall be designed in such a way that incorrect mounting is avoided, if this can lead to an unsafe situation. If this is not possible, information on the correct mounting shall be given directly on the part and/or the enclosure.

*Compliance is checked by inspection.*

**22.ZE.4** Where the weight, size or shape prevents appliances from being moved manually, they shall be fitted with attachments for lifting gear or be designed so they can be fitted with such attachments, or be shaped in such a way that standard lifting gear can easily be used.

Appliances to be moved manually shall be constructed or shall be equipped so that they can be moved easily and safely.

*Compliance is checked by inspection.*

**22.ZE.5** The fixing systems of fixed **guards** which prevent access to dangerous moving transmission parts shall only be removable with the use of tools.

If such **guards** have to be removed by the user for routine cleaning or maintenance their fixing systems shall remain attached to the fixed **guards** or to the machine after removal. Where possible, **guards** shall be incapable of remaining in place without their fixings.

This does not apply if, after removal of the screws, or if the component is incorrectly repositioned, the appliance becomes inoperative.

If movable guards are used they shall be interlocked. The interlocking devices shall prevent the start of hazardous appliance functions until the guards are fixed in their position, and give a stop command whenever they are no longer closed.

Where it is possible for an **operator** to reach the danger zone before the risk due to hazardous appliance functions has ceased, movable **guards** shall be associated with a **guard** locking device in addition to an interlocking device that

- prevents the start of hazardous appliance functions until the **guard** is closed and locked, and
- keeps the **guard** closed and locked until the risk of injury from the hazardous appliance functions has ceased.

Interlocking movable **guards** shall remain attached to the appliance when open and they shall be designed and constructed in such a way that they can be adjusted only by means of an intentional action.

*Compliance is checked by inspection.*

**22.ZE.6** Interlocking movable **guards** shall be designed in such a way that the absence or failure of one of their components prevents starting or stops the hazardous appliance functions.

*Compliance is checked by inspection and by the following tests.*

*The guard is opened to the extent needed to cause the interlocking to operate and is then closed. This operation is carried out for the number of cycles as defined, if relevant, in the specific Part 2.*

*After this test any defect that may be expected in normal use is applied to the interlock system, including interruption of the supply, only one defect being simulated at a time.*

NOTE 1 Examples of defects are the breakage of a spring or a gravity-operated part failing to drop into position.

NOTE 2 Fault conditions applied during the tests of Clause 19 are not repeated.

*After these tests the interlock system shall be fit for further use.*

**22.ZE.7** Adjustable **guards** restricting access to areas of the moving parts strictly necessary for the work shall be

- adjustable manually or automatically, depending on the type of work involved, and
- readily adjustable without the use of tools.

*Compliance is checked by inspection.*

**22.ZE.8** In case of interruption, re-establishment after an interruption or fluctuation in whatever manner of the power supply, the appliance shall not restart, however automatic restarting of the operation is allowed if

the appliance may continue to operate, without causing any hazard to the user, from the same point in its operating cycle at which the voltage interruption or fluctuation occurred.

*Compliance is checked by inspection*

**22.ZE.9** Appliances shall be fitted with means to isolate them from all energy sources (e.g. hot water, steam, compressed air). Such isolators must be clearly identified. They shall be capable of being locked if reconnection could endanger persons.

After the energy source is disconnected, it shall be possible to dissipate any energy remaining or stored in the circuits of the appliance without risk to persons.

*Compliance is checked by inspection.*

## Annex ZF (informative)

### Criteria applied for the allocation of products covered by standards in the EN 60335 series under LVD or MD

This guide has 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 ZF.1 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 ZF.1 – List of standards under CLC/TC 61**

<b>Standard reference</b>	<b>To be listed under LVD (2006/95/EC)</b>	<b>To be listed under MD (2006/42/EC)</b>
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"/>

**Table ZF.1 – List of standards under CLC/TC 61** *(continued)*

<b>Standard reference</b>	<b>To be listed under LVD (2006/95/EC)</b>	<b>To be listed under MD (2006/42/EC)</b>
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

**Table ZF.1 – List of standards under CLC/TC 61 (continued)**

<b>Standard reference</b>	<b>To be listed under LVD (2006/95/EC)</b>	<b>To be listed under MD (2006/42/EC)</b>
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

**Table ZF.1 – List of standards under CLC/TC 61** *(continued)*

<b>Standard reference</b>	<b>To be listed under LVD (2006/95/EC)</b>	<b>To be listed under MD (2006/42/EC)</b>
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"/>



**Table ZF.1 – List of standards under CLC/TC 61** *(continued)*

<b>Standard reference</b>	<b>To be listed under LVD (2006/95/EC)</b>	<b>To be listed under MD (2006/42/EC)</b>
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>		

## **Annex ZG** (normative)

### **UV appliances**

The following modifications to this standard apply to appliances having UV emitters.

This annex is not applicable to appliances covered by the scopes of IEC 60335-2-27, IEC 60335-2-59 or IEC 60335-2-109.

## **7 Marking and instructions**

*Add the following:*

**7.12.ZG** The instructions for appliances incorporating UVC emitters shall include the substance of the following:

**WARNING** — This appliance contains a UV emitter. Do not stare at the light source.

## **32 Radiation, toxicity and similar hazards**

*Add the following:*

For appliances incorporating UV emitters the manufacturer's shall deliver a declaration providing evidence that the plastic material exposed to the radiation is UV resistant.

**NOTE** Examples of appliances that may incorporate UVC emitters are range hoods, air cleaners and finger nail hardeners.

**Annex ZZ**  
(informative)

**Coverage of Essential Requirements of EC Directives**

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in the EC Directives 2006/95/EC and 2006/42/EC.

Compliance with this Part 1 when used together with the relevant Part 2 provides one means of conformity with the specified essential requirements of the Directives concerned.

**WARNING — Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.**

## **Bibliography**

### *Addition*

IEC 62079, *Preparation of instructions – Structuring, content and presentation*

NOTE IEC 62079 is harmonised as EN 62079.

CENELEC Guide 29, *Temperatures of hot surfaces likely to be touched – Guidance document for Technical Committees and manufacturers*

CEN/CENELEC Guide 6 *Guidelines for standards developers to address the needs of older persons and persons with disabilities*