



NSAI
Standards

Irish Standard
I.S. EN 60335-2-7:2010

Household and similar electrical appliances - Safety - Part 2-7: Particular requirements for washing machines

I.S. EN 60335-2-7:2010

Incorporating amendments/corrigenda issued since publication:

EN 60335-2-7:2010/A1:2013
EN 60335-2-7:2010/A11:2013

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

<i>This document replaces:</i> EN 60335-2-7:2003 + corr July 2003 + A1:2004 + A2:2006	<i>This document is based on:</i> EN 60335-2-7:2010	<i>Published:</i> 22 January, 2010
This document was published under the authority of the NSAI and comes into effect on: 20 June, 2012		ICS number: 97.060 13.120
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
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English version

**Household and similar electrical appliances -
Safety -
Part 2-7: Particular requirements for washing machines**

Appareils électrodomestiques et
analogues -
Sécurité -
Partie 2-7: Règles particulières pour les
machines à laver le linge

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke -
Teil 2-7: Besondere Anforderungen für
Waschmaschinen

This amendment A11 modifies the European Standard EN 60335-2-7:2010; it was approved by CENELEC on 2012-12-31. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

This document (EN 60335-2-7:2010/A11:2013) has been 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) 2014-04-25
at national level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with (dow) 2014-11-21
this document have to be withdrawn

This amendment supplements or modifies the corresponding clauses of EN 60335-1:2012 and its amendments, EN 60335-2-7:2010 and EN 60335-2-7:2010/A1:2013.

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.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

1 Scope

Replacement:

This clause of Part 1 is replaced by the following.

This European Standard deals with the safety of electric washing machines for household and similar purpose, that are intended for washing clothes and textiles, their rated voltage being not more than 250 V for single-phase and 480 V for others. These washing machines in this European Standard are generally referred to as appliances.

This European Standard also deals with the safety of electric washing machines for household and similar use employing an electrolyte instead of detergent. Additional requirements for these appliances are given in Annex CC.

Appliances intended to be used by laymen in shops and other premises for normal housekeeping purposes, are within the scope of this European Standard.

NOTE Z101 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 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 Z102 Household environments include the dwelling and its associated buildings, the garden, etc.

As far as is practicable, this European Standard deals with the common hazards presented by appliances that are encountered by all persons in household and similar environments.

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,
- **user maintenance** by **children**, including the cleaning of the appliance.

It is recognised that **very vulnerable people** may have needs beyond the level addressed in this European Standard.

This European Standard does not apply to

- appliances to be used in the commercial areas, e.g. laundrettes (EN 50571),
- appliances intended exclusively for industrial purposes (EN ISO 10472-2),
- 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).

NOTE Z103 Attention is drawn to the fact that

- for washing machines 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,
- for washing machines having a separate spin container for water extraction, EN 60335-2-4 is also applicable,
- for washing machines having a drying function, EN 60335-2-11 is also applicable,

- if an appliance within the scope of this European Standard also incorporates functions that are covered by another Part 2 of EN 60335, the relevant Part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

7 Marking and instructions

7.10 Replace the text beginning by "Devices used to start/stop operational..." and ending in "or position, etc..." by the following:

The accessible switch required by 22.40 shall be distinguished from other manual devices by means of shape, or size, or surface texture, or position, etc.

7.12 Addition:

Children of less than 3 years should be kept away unless continuously supervised.

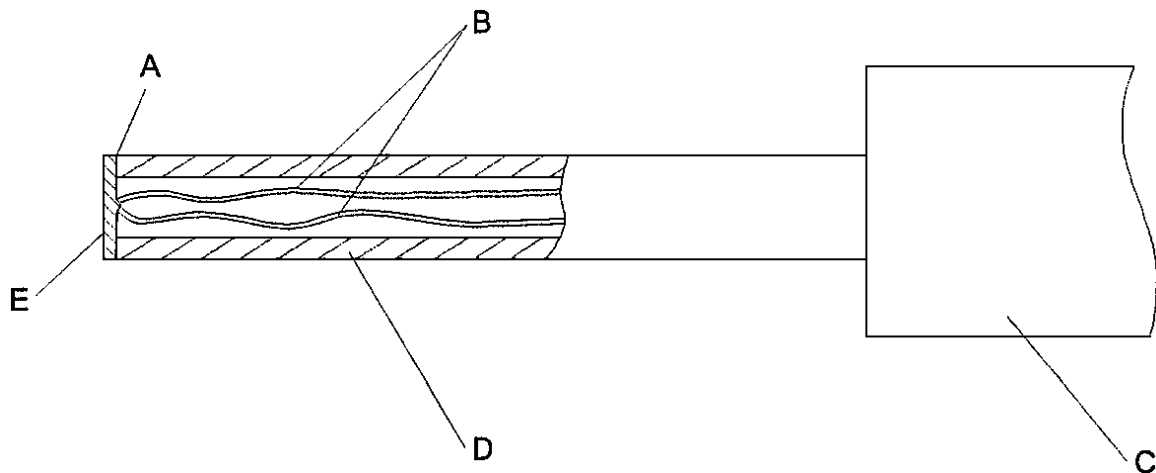
11 Heating

11.3 Addition:

For flat surfaces, temperature rises of the accessible front surface are measured using the probe of Figure Z101. The probe is applied with a force of $4\text{ N} \pm 1\text{ N}$ to the surface in such a way that the best possible contact between the probe and the surface is ensured.

NOTE Z101 Any measuring instrument giving the same results as the probe may be used.

Add the following Figure Z101:



Key

- A adhesive
- B thermocouple wires 0,3 mm diameter to EN 60584-1 Type K (chrome alumel)
- C handle arrangement permitting a contact force of $4\text{ N} \pm 1\text{ N}$
- D polycarbonate tube: inside diameter 3 mm, outside diameter 5 mm
- E tinned copper disc: 5 mm diameter, 0,5 mm thick

NOTE The contact face of the disc is to be flat.

Figure Z101 – Probe for measuring flat surface temperatures

11.8 Modification:

Replace the first paragraph of Part 1 by the following: "During the test, the temperature rises are monitored continuously and shall not exceed the values shown in Table 3 and Table Z101 in accordance with 11.Z101".

**Household and similar electrical appliances -
Safety -
Part 2-7: Particular requirements for washing machines
(IEC 60335-2-7:2008/A1:2011, modified)**

Appareils électrodomestiques et
analogues -
Sécurité -
Partie 2-7: Règles particulières pour les
machines à laver le linge
(CEI 60335-2-7:2008/A1:2011, modifié)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke -
Teil 2-7: Besondere Anforderungen für
Waschmaschinen
(IEC 60335-2-7:2008/A1:2011, modifiziert)

This amendment A1 modifies the European Standard EN 60335-2-7:2010; it was approved by CENELEC on 2012-11-20. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

I.S. EN 60335-2-7:2010

EN 60335-2-7:2010/A1:2013

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Foreword

The text of document 61/4279/FDIS, future edition 1 of IEC 60335-2-7:2008/A1, prepared by IEC TC 61 "Safety of household and similar electrical appliances" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60335-2-7:2010/A1:2013.

A draft amendment, which covers common modifications to IEC 60335-2-7:2008/A1:2011, was prepared by CLC/TC 61 "Safety of household and similar electrical appliances" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has (dop) 2013-11-20
to be implemented at national level
by publication of an identical
national standard or by endorsement
- latest date by which the national (dow) 2015-11-20
standards conflicting with this document
have to be withdrawn

This amendment supplements or modifies the corresponding clauses of EN 60335-1:2012 and EN 60335-2-7:2010.

Endorsement notice

The text of the International Standard IEC 60335-2-7:2008/A1:2011 was approved by CENELEC as a European Standard with agreed common modifications.

In the Bibliography of EN 60335-2-7:2010, delete the following note:

ISO 13732-1 NOTE Harmonized as EN ISO 13732-1.

COMMON MODIFICATIONS

20.104

Delete the sentence in the Amendment A1 of IEC beginning with "After the Note...", but keep the last paragraph after this sentence.

20.105

Delete the modification in the Amendment A1 of IEC.

EUROPEAN STANDARD

EN 60335-2-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2010

ICS 97.060;13.120

Supersedes EN 60335-2-7:2003 + corr. Jul.2003 + A1:2004 + A2:2006

English version

**Household and similar electrical appliances -
Safety -
Part 2-7: Particular requirements for washing machines
(IEC 60335-2-7:2008, modified)**

Appareils électrodomestiques et
analogues -
Sécurité -
Partie 2-7: Règles particulières pour les
machines à laver le linge
(CEI 60335-2-7:2008, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke -
Teil 2-7: Besondere Anforderungen
für Waschmaschinen
(IEC 60335-2-7:2008, modifiziert)

This European Standard was approved by CENELEC on 2009-11-01. 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 Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 61/3564/FDIS, future edition 7 of IEC 60335-2-7, prepared by IEC Technical Committee 61, Safety of household and similar electrical appliances, was submitted to the IEC-CENELEC parallel vote.

A draft amendment was prepared by the Technical Committee CENELEC TC 61, Safety of household and similar electrical appliances. It was discussed during the meetings of CENELEC TC 61 in Malaga in June 2007, in Berlin in November 2007, in Kista in June 2008 and in London in December 2008, when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure.

The combined texts were approved by CENELEC as EN 60335-2-7 on 2009-11-01.

This European Standard supersedes EN 60335-2-7:2003 + corr. July 2003 + A1:2004 + A2:2006.

The principal changes compared to EN 60335-2-7:2003 are as follows (minor changes are not listed):

- the text of some notes has been converted to normative text;
- the spillage test has been made applicable to all washing machines (15.2);
- additional requirements concerning the accessibility of mechanical release mechanisms have been added (22.105);
- requirements for washing machines employing an electrolyte, instead of detergent, have been introduced in Annex CC.

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

The following dates are applicable:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2010-11-01
- date on which national standards
conflicting with the EN have to be withdrawn (dow) 2014-11-01

This part 2 has to be used in conjunction with EN 60335-1, Household and similar electrical appliances – Safety – Part 1: General requirements. It was established on the basis of the 2002 edition of that standard. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

This part 2 supplements or modifies the corresponding clauses of EN 60335-1, so as to convert it into the European Standard: Safety requirements for electric washing machines.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

NOTE 1 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letter Z.

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 the associated noun are also in bold.

There are no special national conditions causing a deviation from this European Standard, other than those listed in Annex ZA to EN 60335-1.

There are no national deviations from this European Standard, other than those listed in Annex ZB to EN 60335-1.

p NOTE In this document, p is used in the margin to indicate instructions for preparing the printed version.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-7: Particular requirements for washing machines

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
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- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of IEC 60335-2-7 consists of the seventh edition (2008) [documents 61/3564/FDIS and 61/3653/RVD] and its amendment 1 (2011) [documents 61/4279/FDIS and 61/4302/RVD]. It bears the edition number 7.1.

The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience. A vertical line in the margin shows where the base publication has been modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through.

This part of International Standard IEC 60335 has been prepared by IEC technical committee 61: Safety of household and similar electrical appliances.

The principal changes in this edition as compared with the sixth edition of IEC 60335-2-7 are as follows (minor changes are not listed):

- the text of some notes in the identified subclauses has been converted to normative text (3.1.9, 5.7, 10.1, 10.2, 11.7, 18.101, 19.101, 20.101, 20.103, 22.6, 22.101, 22.103, 22.104, 23.101, AA.1, AA.2 and Clause 4 of Annex BB);
- the spillage test has been made applicable to all washing machines (15.2);
- additional requirements concerning the accessibility of mechanical release mechanisms have been added (22.105);
- requirements for washing machines employing an electrolyte, instead of detergent, have been introduced in Annex CC;
- the requirements for power driven wringers have been moved to informative Annex DD.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This part 2 is to be used in conjunction with the latest edition of IEC 60335-1 and its amendments. It was established on the basis of the fourth edition (2001) of that standard.

NOTE 1 When “Part 1” is mentioned in this standard, it refers to IEC 60335-1.

This part 2 supplements or modifies the corresponding clauses in IEC 60335-1, so as to convert that publication into the IEC standard: Safety requirements for electric washing machines.

NOTE 2 The following annexes contain provisions suitably modified from other IEC or ISO standards.

Annex AA	Detergent and rinsing agent	IEC 60436 and IEC 60456
Annex BB	Ageing test for elastomeric parts	ISO 1817

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

NOTE 3 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

NOTE 4 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 the associated noun are also in bold.

A list of all parts of the IEC 60335 series, under the general title: *Household and similar electrical appliances – Safety*, can be found on the IEC website.

NOTE 5 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The following differences exist in the countries indicated below.

- 3.1.9: Different size cloths are used. The initial water temperature for machines without heating elements and without a wringer is 71 °C (USA).
- 6.1: Class 01 appliances are allowed (China and Japan).
- 6.2: IPX0 appliances are allowed (Canada and USA).
- 11.7: The test durations are different (USA).
- 15.101: The test is different (USA).
- 19.7: Appliances without a programmer are operated until steady conditions are established (USA).
- 19.101: A redundant set of contacts is not required (USA).
- 22.6: The test is different (USA).
- 22.101: The test is carried out at twice the permissible inlet pressure or 2,0 MPa, whichever is higher (Norway).
- 22.101: The test is not carried out (USA).
- Annex AA: The detergent and rinsing agent are different (USA).
- Annex BB: Different tests are carried out (USA).

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

NOTE 6 The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip themselves for conducting new or revised tests.

It is the recommendation of the committee that the content of the amendment 1 be adopted for implementation nationally not earlier than 12 months or later than 36 months from the date of publication.

The contents of the corrigendum of September 2012 have been included in this copy.

IMPORTANT – The “colour inside” logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this publication using a colour printer.

INTRODUCTION

It has been assumed in the drafting of this International Standard that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

This standard recognizes the internationally accepted level of protection against hazards such as electrical, mechanical, thermal, fire and radiation of appliances when operated as in normal use taking into account the manufacturer's instructions. It also covers abnormal situations that can be expected in practice and takes into account the way in which electromagnetic phenomena can affect the safe operation of appliances.

This standard takes into account the requirements of IEC 60364 as far as possible so that there is compatibility with the wiring rules when the appliance is connected to the supply mains. However, national wiring rules may differ.

If an appliance within the scope of this standard also incorporates functions that are covered by another part 2 of IEC 60335, the relevant part 2 is applied to each function separately, as far as is reasonable. If applicable, the influence of one function on the other is taken into account.

NOTE 1 For example, if appliances within the scope of this Part 2

- have a separate spin container for water extraction, IEC 60335-2-4 is also applicable as far as is reasonable;
- have a drying function, IEC 60335-2-11 is also applicable as far as is reasonable.

When a part 2 standard does not include additional requirements to cover hazards dealt with in Part 1, Part 1 applies.

NOTE 2 This means that the technical committees responsible for the part 2 standards have determined that it is not necessary to specify particular requirements for the appliance in question over and above the general requirements.

This standard is a product family standard dealing with the safety of appliances and takes precedence over horizontal and generic standards covering the same subject.

NOTE 3 Horizontal and generic standards covering a hazard are not applicable since they have been taken into consideration when developing the general and particular requirements for the IEC 60335 series of standards. For example, in the case of temperature requirements for surfaces on many appliances, generic standards, such as ISO 13732-1 for hot surfaces, are not applicable in addition to Part 1 or part 2 standards.

An appliance that complies with the text of this standard will not necessarily be considered to comply with the safety principles of the standard if, when examined and tested, it is found to have other features that impair the level of safety covered by these requirements.

An appliance employing materials or having forms of construction differing from those detailed in the requirements of this standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be considered to comply with the standard.

HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES – SAFETY –

Part 2-7: Particular requirements for washing machines

1 Scope

This clause of Part 1 is replaced by the following.

This International Standard deals with the safety of electric washing machines for household and similar use, that are intended for washing clothes and textiles, their **rated voltage** being not more than 250 V for single-phase appliances and 480 V for other appliances.

This standard also deals with the safety of electric washing machines for household and similar use employing an electrolyte instead of detergent. Additional requirements for these appliances are given in Annex CC.

NOTE 101 Guidance is given in Annex DD for requirements that may be used to ensure an acceptable level of protection against electrical and thermal hazards for washing machines fitted with a power driven wringer.

Appliances not intended for normal household use but which nevertheless may be a source of danger to the public, such as appliances intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard.

NOTE 102 Examples of such appliances are washing machines for communal use in blocks of flats or in laundrettes.

As far as is practicable, this standard deals with the common hazards presented by washing machines that are encountered by all persons in and around the home. However, in general, it does not take into account

- persons (including children) whose
 - physical, sensory or mental capabilities; or
 - lack of experience and knowledgeprevents them from using the appliance safely without supervision or instruction;
- children playing with the appliance.

NOTE 103 Attention is drawn to the fact that

- for washing machines 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 104 This standard does not apply to

- washing machines intended exclusively for industrial purposes (ISO 10472-2);
- 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).

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