

Specification for

Safety of household and

similar electrical appliances

Part 2. Particular requirements

Section 2.15 Appliances for heating liquids

This European Standard EN 60335-2-15 : 1990 has the status of a British Standard

Sécurité des appareils électrodomestiques et analogues
Partie 2. Règles particulières
Section 2.15 Appareils de chauffage des liquides

Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen
Abschnitt 2.15 Geräte zur Flüssigkeitserhitzung

Cooperating organizations

The European Committee for Electrotechnical Standardization (CENELEC), under whose supervision this European Standard was prepared, comprises the National Committees of the following countries.

Austria	Italy
Belgium	Luxemburg
Denmark	Netherlands
Finland	Norway
France	Portugal
Germany	Spain
Greece	Sweden
Iceland	Switzerland
Ireland	United Kingdom

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Amendments issued since publication

Amd. No.	Date	Text affected



Amendment No. 1
published and effective from 15 October 1992
to BS EN 60335-2-15 : 1991

Specification for safety of household and
similar electrical appliances
Part 2. Particular requirements
Section 2.15 Appliances for heating liquids

NOTE. The English language version of European Standard EN 60335-2-15 was implemented in the United Kingdom by the publication of BS EN 60335-2-15 : 1991. This amendment implements amendment A1 to EN 60335-2-15.

This amendment together with European Standard EN 60335-2-15 : 1990 has the status of a British Standard.

Revised text

AMD 7127
October 1992

National foreword

In paragraph 1, line 4, after 'liquids' insert 'including Amendment A1'.

In paragraph 1, line 7, after 'edition', insert 'as amended by Amendment No. 1 : 1988'.

After paragraph 6, insert the following.

'The foreword of the EN Amendment A1 makes reference to 'date of withdrawal (dow) of conflicting national standards' as '1994-09-01'. In this case the relevant national standard is BS EN 60335-2-15 but the dow relates only to those parts of the British Standard subject to Amendment No. 1. Certificates and marks will not be awarded after this date with respect to the British Standard not incorporating Amendment No. 1. They will be awarded with respect only to the amended British Standard. However, such certificates and marks already awarded with respect to the British Standard not incorporating Amendment No. 1 may continue to apply for production until 1999-09-01.'

AMD 7127
October 1992

EN title page and foreword

Insert the attached EN title page (foreword on reverse).

AMD 7127
October 1992

Text of EN 60335-2-15

Amend the text of European Standard EN 60335-2-15 in accordance with the details given on the attached pages.

AMD 7127
October 1992

National appendix NC

Insert in correct numerical order in the list of identical or technically equivalent standards the following reference.

'HD 195 S6 : 1989

BS 415 : 1990 Specification for safety requirements for
mains-operated electronic and related apparatus for
household and similar general use
(Identical)'

UDC 64.06-83:641.524:620.1:614.8

Descriptors: Household electrical appliances, liquids, kettles, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

Amendment A1 to the English version of EN 60335-2-15

Safety of household and similar electrical appliances Part 2 : Particular requirements for appliances for heating liquids

(Amendment 1 : 1988 to IEC 335-2-15 : 1986, modified)

Sécurité des appareils électrodomestiques
et analogues
Deuxième partie: Règles particulières pour
les appareils de chauffage des liquides
(Modification 1 : 1988 à la
CEI 335-2-15 : 1986, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für Geräte
zur Flüssigkeitserhitzung
(Änderung 1 : 1988 zu
IEC 335-2-15 : 1986, modifiziert)

This amendment A1 modifies the European Standard EN 60335-2-15 : 1990. It was approved by CENELEC on 15 March 1991. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The proposal to endorse amendment 1 to IEC Publication IEC 335-2-15, documents CLC/TC (SEC) 603 and 604, was circulated under the enquiry procedure in October 1987.

This proposal was discussed during the Neusiedl meeting in May 1988 when it was decided to submit a draft for an amendment to EN 60335-2-15 to the unique acceptance procedure (UAP). This procedure started in April 1990.

The text of this draft was ratified by CENELEC as amendment A1 on the 10th December 1990.

A proposal to amend EN 60335-2-15, document CLC/TC 61 (SEC) 695, was circulated under the enquiry procedure in July 1989.

This proposal was discussed during the Stockholm meeting in November 1989 when it was decided to submit a draft for an amendment to EN 60335-2-15 to the unique acceptance procedure (UAP). This procedure started in June 1990.

The text of this draft was ratified by CENELEC as amendment A51 on the 15th of March 1991. It has been incorporated in EN 60335-2-15/A1.

This amendment has been prepared by the secretariat of CENELEC technical committee TC 61.

The following dates are applicable:

- latest date of publication of an identical national standard (dop) 1992-09-01
- date of withdrawal of conflicting national standards (dow) 1994-09-01

For products which have complied with EN 60335-2-15 : 1990 before 1994-09-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-09-01.

This document supplements or modifies the corresponding clauses of amendment 1 : 1988 to IEC 335-2-15 : 1986, so as to convert it into amendment A1 to EN 60335-2-15 : 1990.

As a consequence of endorsing amendment 1 of IEC 335-2-15, the common modification of EN 60335-2-15 concerning subclause 1.1 is withdrawn since it is covered by the IEC text.

EN 60335-2-15, including this amendment, has to be used in conjunction with EN 60335-1 : 1988, including its amendments A2 : 1988, A5 : 1989 and A6 : 1989.

Annexes which are in addition to those in IEC 335-2-15 are lettered ZAA, ZBB, etc.

There are no special national conditions (snc) causing a deviation from this amendment.

There are no national deviations from this amendment.

Common modifications

Prefaces *Delete.*

1 **Scope**

1.1 *Replace 'IEC Publication 65' by 'HD 195'.*

Add to the second explanation:

Refer annex ZAA.

2. **Definitions**

Add:

2.2.601 *Cordless kettle* denotes a kettle incorporating its heating element which is connected to the supply only when placed on its associated stand.

7. **Marking**

7.1 *Add:*

The associated stands delivered with cordless kettles shall be marked with:

- manufacturer's name or trade mark;
- manufacturer's model or type reference.

7.12 *Add:*

The instruction sheet shall state that the cordless kettle is only to be used with the stand provided and is not to be filled when placed on the stand.

When the construction of the cordless kettle is such that the complete appliance can be lifted by gripping only the handle of the kettle, the instruction sheet shall include the substance of the following:

Important: Ensure that the kettle has switched OFF automatically or is switched OFF manually before attempting to remove it from its stand.

Add:

8. **Protection against electric shock**

Replace the text by:

This clause of Part 1 is applicable except as follows:

8.1 *Addition:*

Access to live parts in the stand of cordless kettles through the socket apertures shall not be possible by a single action with the test pin of figure 2 applied with a force of 5 N.

Add:

15. **Moisture resistance**

15.3 Add:

The test with the cordless kettle on the horizontal plane is carried out with the kettle both on and off its stand. The additional test for spout filling kettles is carried out only with the kettle off its stand.

Add the following new subclause:

15.601 *The stands of cordless kettles are additionally tested without the kettle as follows:*

30 ml of water containing approximately 1 % NaCl is poured over a period of 10 s from a height of 200 mm through a tube with an inner diameter of 8 mm onto the enclosure of the contacts. Immediately afterwards, the electric strength test is made with a voltage of 2 500 V.

Add:

18. **Endurance**

Add the following new subclause:

18.601 *Cordless kettles shall be subjected to the following test with the contact pins at room temperature.*

The two live contacts of the kettle are connected internally to one another and an external electrical load is connected in series with the supply which is maintained throughout the test. The external load is of such a value that the current is 1,1 times the maximum rated current at a voltage of 1,06 times the maximum rated voltage and it is positioned so as not to affect the ambient temperature of the test enclosure. The kettle is inserted into and withdrawn from the stand 10 000 times (20 000 strokes), the same direction of insertion and withdrawal being maintained throughout the test.

If the appliance is designed such that it is not possible for current to pass through the contact pins as the kettle is being placed on or removed from its stand, the kettle is inserted into and withdrawn from the stand 10 000 times (20 000 strokes) with no current passing through the contact pins. The number of insertions and withdrawals is reduced to 5 000 times with current and 5 000 times without current (10 000 strokes) for kettles controlled by a thermostat.

After this endurance test, the kettle and stand shall withstand the electric strength test of 16.4. The earthing circuit shall then comply with 27.5.

After these tests, the appliance shall

- show no wear impairing further use. In particular there shall be no wear or distortion of the contact pins and sockets causing these to switch the load current instead of any internal switch;*
- comply with 8.1.*

If, with the temperature limiter closed, the circuit through the stand and the kettle is made and broken by a separate switch which is actuated by the insertion and withdrawal of the kettle, this switch shall, when not separately approved for the conditions of use, comply with the requirements of EN 60335-1 or CEE 24; the number of operations for the endurance test shall be 10 000.

22. **Construction**

22.105 *Replace the requirement by:*

Pressure cookers shall incorporate a pressure or temperature responsive pressure relief device.

Add the following subclause:

- 22.601 Cordless kettles and their associated stands shall comply with the requirements of EN 60320-1 as far as they reasonably apply. In particular:
- the distance from the contact sockets to the surface shall not be less than 5,7 mm.
 - the contact sockets shall be locked against rotation in compliance with subclause 12.3 in EN 60320-1.

Compliance is checked by inspection and by measurement.

Add:

Add the following new annex:

ANNEX ZAA (normative)

NATIONAL REGULATIONS FOR PRESSURE VESSELS

Austria	Decree Dampfkesselverordnung – DKV, BGBl. Nr. 510/1986.
Denmark	Ordinance No. 746 of November 26, 1987, from the Directorate of Labour Inspection. From July 1, 1992, Ordinances No. 627 and 628 of September 7, 1990 will also be in force (Implementation of EEC Directive)
Finland	Act 98/73 and decree 549/73 on pressure vessels; decisions of Ministry of trade and industry 69/75, 70/75, 71/75, 391/84; directives and regulations given by TTK; SFS – standards. Current amendments are to be regarded.
France	– Décret du 2 avril 1926 portant règlement sur les appareils à vapeur. – Arrêté du 25 janvier 1979 relatif à la protection contre les surpressions de certaines enceintes fermées chauffées et contenant de l'eau sous pression.
Germany	Decrees Dampfkesselverordnung – DampfkV and Druckbehälter-verordnung – DruckbehV; DIN 660 65 Part 1 and Part 2.
Greece	Part 2 Standard ELOT 730-21.
Netherlands	'Regels voor toestellen onder druk'.
Sweden	AFS 1988:11, issued by the National Board of Occupational Safety and Health.
United Kingdom	The building regulations statutory requirements g3 for England and Wales; 1986 model water byelaws (HMSO London) in byelaws 90 and 91.

PREFACE

This amendment has been prepared by IEC Technical Committee No. 61: Safety of household and similar electrical appliances.

The text of this amendment is based upon the following documents:

Six Months' Rule	Report on Voting
61(C0)510 61(C0)511	61(C0)538 61(C0)539

Further information on the voting for the approval of this amendment can be found in the Voting Reports indicated in the above table.

PREFACE

Page 5

Replace the second paragraph below the table by:

This Part 2 is intended to be used in conjunction with IEC Publication 335-1. It was established on the basis of the second edition (1976) of that publication, as modified by Amendments No. 1 (1977), No. 2 (1979), No. 3 (1982), No. 4 (1984), No. 5 (1986) and No. 6 (1988). Consideration may be given to future editions of, or amendments to, IEC Publication 335-1.

Page 7

Add the following to the list of notes regarding differing national practices:

- In the U.S.A. a different internal test pressure is applied (Sub-clause 22.28).
- In the U.S.A. a higher force is applied (Sub-clause 22.106).

Page 9

1. Scope

1.1 Replace "pressure cookers" in the list by:

- pressure cookers having a nominal cooking pressure not exceeding 140 kPa (1.4 bar) and a rated capacity not exceeding 10 litres;

Add:

For appliances incorporating radio receivers or other audio equipment, attention is drawn to the requirements of IEC Publication 65.

Attention is drawn to the fact that in many countries requirements for pressure vessels are applied to pressure cookers.

Page 11

2. Definitions

2.2.29 *Delete "pressure cookers" from the second paragraph.*

Add:

Pressure cookers are operated in accordance with the manufacturer's instructions but with the container filled with a quantity of initially cold water to a depth of 25 mm.

Add the following definitions:

2.2.104 *Pressure regulating device* denotes a control fitted to a pressure cooker in order to maintain the pressure at a particular value during normal use.

2.2.105 *Pressure relief device* denotes a control fitted to a pressure cooker in order to reduce the pressure under abnormal operating conditions.

2.2.106 *Nominal cooking pressure* denotes the pressure assigned to the appliance by the manufacturer.

Page 15

7. Marking

7.1 **Add:**

If the closed position of the lid of a pressure cooker is not obvious, this position shall be marked on the appliance.

7.12 **Add:**

For pressure cookers, the instruction sheet shall state that the passages in the pressure regulating device allowing the escape of steam should be checked regularly to ensure that they are not blocked. This instruction sheet shall also give details of how to open the container safely and shall state that the container must not be opened until the pressure has decreased sufficiently.

Page 17

11. Heating

11.7 Replace the final paragraph by:

Pressure cookers are operated for 15 min after attaining the maximum nominal cooking pressure indicated in the manufacturer's instructions.

If instructions are given regarding the use of the pressure cooker for purposes other than pressure cooking, the appliance is additionally tested accordingly.

Page 27

19. Abnormal operation

19.1 Add: "pressure cookers" to the appliances stated in the third paragraph of the test specification.

Add:

19.4 Addition:

Pressure regulating devices of pressure cookers are made inoperative together with each safety device in turn.

Pressure relief devices and thermal cut-out are examples of safety devices.

Add:

19.11 Addition:

Pressure relief devices of pressure cookers shall operate during the test of Sub-clause 19.4 before the internal pressure has exceeded atmospheric pressure by 350 kPa (3.5 bar).

Add the following new sub-clause:

19.102 For appliances with detachable liquid containers, the automatic transfer of liquid from one container to another shall not give rise to an electrical hazard in the event of incorrect positioning of these containers.

Compliance is checked by assembling the appliance with its receiving container incorrectly positioned or removed. The water discharge pipe is incorrectly positioned if this produces a more unfavourable condition. The appliance is operated as specified in Clause 11 but for one cycle only. The appliance is then subjected to the test of Clause 16 and inspection shall show that there is no trace of water on insulation which could result in the reduction of creepage distances and clearances below the limits specified in Sub-clause 29.1.

22. Construction

22.28 Add:

For pressure cookers compliance is checked by inspection and by the following test:

All pressure relief devices and pressure regulating devices are made inoperative and with the lid in closed position the internal pressure is gradually increased hydraulically to six times the maximum nominal cooking pressure. The container shall not rupture.

Add the following new sub-clauses:

- 22.105 Pressure cookers shall incorporate a pressure or temperature responsive pressure relief device, at least part of which has to be replaced after operation.

Compliance is checked by inspection.

- 22.106 Pressure cookers shall be so constructed that the lid cannot be removed while the pressure within the container is excessive. They shall be provided with a means to release the pressure within the container to a value such that the lid can be removed without risk.

Compliance is checked by the following test:

The pressure cooker is operated under the conditions specified in Clause 11 until the pressure regulating device operates for the first time.

The pressure cooker is then disconnected from the supply and the pressure within the container allowed to decrease until the pressure is 4 kPa (0.04 bar). A force of 100 N is applied to the most unfavourable point where the lid or its handle can be gripped. It shall not be possible to remove the lid.

The internal pressure is then further reduced gradually. When the lid is removed, there shall be no hazardous displacement of the lid.

This test is not made on pressure cookers where the lid is secured by means of screw clamps or other devices which ensure that the pressure within the container is automatically reduced in a controlled manner before the lid can be removed.



Amendment No. 2
published and effective from 15 October 1992
to BS EN 60335-2-15 : 1991

Specification for safety of household and
similar electrical appliances
Part 2. Particular requirements
Section 2.15 Appliances for heating liquids

NOTE. The English language version of European Standard
EN 60335-2-15 was implemented in the United Kingdom by the
publication of BS EN 60335-2-15 : 1991. This amendment implements
amendment A2 to EN 60335-2-15.

This amendment together with European Standard EN 60335-2-15 :
1990 has the status of a British Standard.

Revised text

AMD 7281
October 1992

National foreword (as amended by Amendment No. 1)

In paragraph 1, line 4, delete 'including Amendment A1' and substitute 'including Amendments A1 and A2'.

In paragraph 1, line 7, after 'Amendment No. 1 : 1988', insert 'and Amendment No. 2 : 1990'.

After paragraph 7 insert the following.

'The foreword of the EN Amendment A2 makes reference to 'date of withdrawal (dow) of conflicting national standards' as '1994-09-01'. In this case the relevant national standard is BS EN 60335-2-15 but the dow relates only to those parts of the British Standard subject to Amendment No. 2. Certificates and marks will not be awarded after this date with respect to the British Standard not incorporating Amendment No. 2. They will be awarded with respect only to the amended British Standard. However, such certificates and marks already awarded with respect to the British Standard not incorporating Amendment No. 2 may continue to apply for production until 1999-09-01.'

AMD 7281
October 1992

EN title page and foreword

Insert the attached EN title page (foreword on reverse).

AMD 7281
October 1992

Text of EN 60335-2-15

Amend the text of European Standard EN 60335-2-15 in accordance with the details given on the attached pages.

UDC 64.06-83:641.524:620.1:614.8

Descriptors: Household electrical appliances, liquids, kettles, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

Amendment A2 to the English version of EN 60335-2-15

Safety of household and similar electrical appliances Part 2 : Particular requirements for appliances for heating liquids

(Amendment 2 : 1990 to IEC 335-2-15 : 1986, modified)

Sécurité des appareils électrodomestiques
et analogues
Deuxième partie: Règles particulières pour
les appareils de chauffage des liquides
(Modification 2 : 1990 à la
CEI 335-2-15 : 1986, modifiée)

Sicherheit elektrischer Geräte für den
Hausgebrauch und ähnliche Zwecke
Teil 2: Besondere Anforderungen für Geräte
zur Flüssigkeitserhitzung
(Änderung 2 : 1990 zu
IEC 335-2-15 : 1986, modifiziert)

This amendment A2 modifies the European Standard EN 60335-2-15 : 1990. It was approved by CENELEC on 23 September 1991. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Foreword

The proposal to endorse amendment No. 2 to IEC 335-2-15 was discussed during the Helsinki meeting in May 1990 when it was decided to submit a draft for an amendment to EN 60335-2-15 to the unique acceptance procedure (UAP). This procedure started in November 1990.

The text of the draft was ratified by CENELEC as amendment A2 on 23 September 1991.

This amendment has been prepared by the secretariat of CENELEC Technical Committee TC 61.

The following dates are applicable:

- latest date of publication of an identical national standard (dop) 1992-09-01
- date of withdrawal of conflicting national standards (dow) 1994-09-01

For products which have complied with EN 60335-2-15 : 1990 before 1994-09-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-09-01.

This document supplements or modifies the corresponding clauses of amendment No. 2 : 1990 to IEC 335-2-15 : 1986, so as to convert it into amendment A2 to EN 60335-2-15 : 1990.

There are no special national conditions (snc) causing a deviation from this amendment.

There are no national deviations from this amendment.

Common modifications

Prefaces *Delete.*

19 **Abnormal operation**

Add:

19.11 *Replace the common modification by:*

If the enclosure of a coffee maker, water boiler, or feeding-bottle heater or egg boiler is used as supplementary insulation or reinforced insulation, its temperature rise during the test of 19.4 is not determined.

Add:

24 **Components**

24.11 *Replace the common modification by:*

Appliances intended to maintain liquid at a particular temperature by means of a heating element are considered as appliances intended for use unattended.

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

25.6 *Add:*

Replace the first dashed item in the common modification by:

- for appliances having a rated capacity not exceeding 1,5 l:
 - if rubber insulated, braided flexible cord (code designation H03 RT-F). However, for coffee makers braided flexible cord is not allowed;
 - if polyvinyl chloride insulated, light polyvinyl chloride sheathed flexible cord (code designation H03 VV-F or H03 VVH2-F);

Add:

30 **Resistance to heat, fire and tracking**

30.1 *Replace the common modification by:*

For coffee makers, water boilers, feeding-bottle heaters and egg boilers the temperature rises occurring during the test of 19.4 are not taken into account.