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British Standard Specification for

Safety of household and similar electrical appliances

Part 102. Particular requirements

Section 102.6 Cooking ranges, cooking tables, ovens and similar appliances for household use

(Implementation of CENELEC HD 275 S1)

Sécurité des appareils électrodomestiques et analogues

Partie 102. Règles particulières

Section 102.6 Cuisinières, réchauds, fours et appareils analogues à usage domestique

Sicherheit von Elektrogeräten für den Haushalt und ähnliche Zwecke

Teil 102. Besondere Anforderungen

Abschnitt 102.6 Küchenherde, Tischherde, Backöfen und ähnliche Geräte für den Hausgebrauch

BS 3456: Part 102: Section 102.6: 1989

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Foreword

This Section of BS 3456: Part 102 has been prepared under the direction of the Light Electrical Engineering Standards Policy Committee. It is aligned with the CENELEC* Harmonization Document for cooking ranges, cooking tables, ovens and similar appliances for household use, HD 275 S1, which in turn is based on IEC† Publication 335-2-6 (1982—Second edition). Its number is directly related to the number of the equivalent Section of the IEC publication.

It is a revision of BS 3456: Section 2.1: 1972 which is withdrawn in accordance with the CENELEC Internal Regulations. It gives the particular requirements for cooking ranges, cooking tables, ovens and similar appliances and is to be read in conjunction with BS 3456: Part 101: 1987 'General requirements' which it supplements or modifies. The many references to Part 1 should be read as references to BS 3456: Part 101 which is the implementation of the CENELEC Harmonization Document for the general requirements, HD 251 S3. In the original IEC text of the particular requirements the precise line numbers in the IEC Part 1 are given. The lines in Part 101 of BS 3456 are not numbered but sufficient information has been included in these particular requirements for the relevant matter in Part 101 to be identified. For ease of production the text of the IEC standard has been used, but it has been modified as described below.



'Amendment No 1 to Section 102.6 implements Amendment 1 to HD 275 S1 dated 1989-02-09 and gives the harmonized requirements for temperature rise for accessible front surfaces.

The CENELEC modifications that appear in HD 275 S1 have been included in the text in the appropriate position and are indicated by a single side line in the margin of the page. References are included to items of the original IEC text which are given in appendix X together with the justifications in the CENELEC Harmonization Document for the modifications.

The United Kingdom deviations are included in the text of the standard and are indicated by a double side line in the margin of the page. In the event of any conflict between the requirement in the Harmonization Document and the requirement in the United Kingdom deviation, the requirement in the United Kingdom deviation takes precedence and users of this British Standard should operate to the United Kingdom deviation.

A complete list of all national deviations to the CENELEC Harmonization Document is given in appendix Y.

In this British Standard the following print types are used to differentiate between requirements, test specifications and explanatory matter.

Requirements: in roman type.

Test specifications: in italic type.

Explanatory matter: in small roman type.

The CENELEC Harmonization Document was approved by the CENELEC Technical Board on 10 September 1986.

A revision of IEC Publication 335-2-6 was published in 1986. It is expected that this will eventually appear, possibly with some modification, as a European Standard. Before this happens a European Standard based on IEC Publication 335-1 including Amendment 3 will have been issued in CENELEC. Revisions of the parallel British Standards will be prepared and published as required.



Sub-clauses or figures which are additional to those in Part 1 are numbered starting from 101.

Product approval. Attention is drawn to the fact that products conforming to this British Standard may be approved by the British Electrotechnical Approvals Board for the purposes of participation in the CENELEC Certification Agreement and in the CB Scheme of the IECEE. (Details of the BEAB approval mark scheme are given on the inside back cover.)

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Cross-references

International standards

IEC 335-1: 1976 }
HD 251 S3: 1982 }

HD 21: 1984 }
HD 22: 1984 }

Code designation HO3 VVH2-F Table 15

CEE Publication 15: 1964

Corresponding British Standards

BS 3456 Specification for safety of household and similar electrical appliances
Part 101: 1987 General requirements
(Technically equivalent)

BS 6500: 1984 Specification for insulated flexible cords and cables

(Technically equivalent)

BS 3535: 1962 Specification for safety isolating transformers for industrial and domestic purposes
(Technically equivalent)

The Technical Committee has reviewed the specific provisions of CEE Publication 7: 1975. Specification for plugs and socket-outlets for domestic and similar purposes, to which reference is made in 11.8, and has decided that they are acceptable for use in conjunction with this standard.

0404

* CENELEC = European Committee for Electrotechnical Standardization.

† IEC = International Electrotechnical Commission

British Standard Specification for

Safety of household and similar electrical appliances

Part 102. Particular requirements

Section 102.6 Cooking ranges, cooking tables, ovens and similar appliances for household use

1. Scope

This clause of Part 1 is applicable except as follows:

1.1 Replacement:

This standard applies to electric cooking ranges, separate stationary ovens, cooking tables and table cookers, and to electric ovens, hob assemblies, grills and griddles for building-in, all intended for household use.

NOTE. For information see X.2.

Self-cleaning ovens, including those of the pyrolytic type, separate ovens for building-in and cooking tables for building-in are within the scope of this standard.

The electrical part of appliances supplied with energy other than electric is also within the scope of this standard.

For appliances having parts supplied with gas, reference is made to the relevant safety requirements occurring in the European Standard EN 30.

NOTE. For information see X.3.

This standard does not take into account the special hazards which exist in nurseries and other places where there are young children or aged or infirm persons without supervision; in such cases, additional requirements may be necessary.

This standard does not apply to:

- separate grills which are not intended for building-in and portable ovens, which are covered by a separate Part 2;
- mains-operated electric toys, which are covered by a separate Part 2;
- microwave cooking appliances, which are covered by a separate Part 2.

Details with regard to separate stationary grills are under consideration;

Additional requirements for electric ignition devices are also under consideration.

NOTE. For information see X.4.

For appliances intended to be used in vehicles or on board ships or aircraft, additional requirements may be necessary.

For appliances intended to be used in tropical countries, special requirements may be necessary.

Attention is drawn to the fact that in many countries additional requirements are specified by the national health authorities and the national authorities responsible for the protection of labour.

2. Definitions

This clause of Part 1 is applicable except as follows:

2.2.4 Addition:

If the appliance comprises more than one heating unit, the rated input is the total maximum input of all heating units that can be switched on at the same time under conditions of normal use.

For appliances provided with more than three heating units, a diversity factor is applied to the rated input when determining the rated current from the rated input and the rated voltage in order to establish the size of the terminals and the nominal cross-sectional area of the supply cables or flexible cords; this diversity factor F is calculated from the following formula, where N is the number of heating units:

$$F = 0.35 + \frac{0.65}{\sqrt{N}}$$

For appliances provided with a socket-outlet, the contribution of the latter to the rated current is considered to be equal to the rated current of the fuse or miniature circuit-breaker protecting the socket-outlet and incorporated in the appliance.

NOTE. For information see X.5.

The total current demand to be assumed for a cooking range is taken to be the first 10 A of the rated current plus 50 % of the remainder of the rated current, plus 5 A if a socket-outlet is incorporated in the cooking range or control unit. For three-phase cooking ranges, the current demand per phase is similarly calculated, based on the rated current per phase.

NOTE. For information see Y.C.2.

2.2.29 *Replacement:*

Conditions of adequate heat discharge denote that the appliance is operated under the following conditions.

Hob elements are operated with a pan containing initially cold water positioned centrally over the heated area. The pan is of aluminium, of commercial quality, not brightly polished, with a flat bottom. If the hob element has a nominal diameter as shown in the following table, the diameter of the bottom of the pan is approximately equal to the nominal diameter of the hob element, and the quantity of water in the pan is as shown in the table. If the hob element has a diameter other than that shown in the table, the diameter of the bottom of the pan and the quantity of water are those specified for the next larger nominal diameter.

Nominal diameter of hob element mm	Quantity of water l
110	0.6
145	1
180	1.5
220	2
300	3

During the tests, the pan is covered with a lid, and water is added in such a way that the water level is maintained as boiling continues.

In case of doubt, standard test pans of commercial aluminium with the dimensions shown in Figure 101 are used.

Ovens are operated empty with the door closed throughout the period of operation.

Ovens provided with a rotating spit or similar accessory are, in addition, operated with this accessory rotating, taking into account the manufacturer's instructions with regard to:

- the heating element to be operated;
- the setting of the thermal control;
- the position of the door.

In the absence of such instructions, the control is adjusted to its highest setting and the door is open; if a partly open position is provided, the door is placed in that position. Any grill pan is placed in its lowest position.

Grills are operated empty with the grill pan, grid or food support in the most unfavourable position and the door and other accessories, if any, in the position indicated in the manufacturer's instructions. In the absence of such instructions, the door and other accessories are placed in the most unfavourable position in which they may be left. For grills incorporated in ovens, the thermal control is adjusted to the highest setting specified in the manufacturer's instructions. In the absence of such instructions and for other grills, the thermal control is adjusted to the highest setting for grilling.

Reflectors, if any, intended to be placed above heating elements are placed in position.

Grills provided with a rotating spit or similar accessory are, in addition, operated with the accessory rotating, taking into account the manufacturer's instructions with regard to:

- the heating element to be operated;
- the setting of the thermal control;
- the position of any grill pan, grid or food support and of the door.

In the absence of such instructions, the thermal control is adjusted to its highest setting for grilling, any grill pan, grid or food support is placed in its lowest position and the door is placed in the most unfavourable position in which it may be left.

NOTE. For information see X.6.

Warming drawers and heated cupboards are operated in the closed position.

When pyrolytic self-cleaning ovens are operated under cleaning conditions, no cooking utensils other than those specified in the instruction sheet are placed in the oven, the cleaning conditions being those specified in the instruction sheet.

Additional definitions:

2.2.101 *Heating unit* denotes any part of the appliance which fulfils an independent cooking or heating function, such as a hob element, an oven, a grill or a warming drawer.

If an oven or grill incorporates more than one heating element or group of heating elements, which are so controlled that one element or group of elements cannot be switched on while another element or group of elements is energized, each of the elements or groups of elements is considered as a separate heating unit.

2.2.102 *Hob element* (boiling plate or surface element) denotes a heating unit designed to accommodate one or more vessels on its upper surface.

2.2.103 *Detachable hob element* denotes a hob element provided with pins which engage with contact tubes in the main part of the appliance, so that the hob element can be withdrawn from its normal position of use and replaced in this position without the aid of a tool.

2.2.104 *Hob* denotes the horizontal part of the appliance which carries or contains the hob element(s).

2.2.105 *Cooking range* (cooker) denotes an appliance having one or more hob elements and one or more ovens; it may also incorporate a grill and/or a griddle.

NOTE. For information see X.7.

2.2.106 *Hob assembly* (counter insert) denotes an appliance for building-in comprising a hob with one or more hob elements, but no oven or grill.

2.2.107 *Table cooker* (table stove) denotes a cooking range intended to stand on a table or similar working surface.

2.2.108 *Cooking table* denotes an appliance intended to stand on a table or similar working surface and having one or more hob elements, but no oven or grill.

2.2.109 *Griddle* denotes a heating unit having a flat surface on which the food to be cooked is placed directly.

2.2.110 *Grill* denotes a heating unit so designed that the food, supported on a grid, mesh or spit, is cooked by radiant heat.

The cooking operation in a grill is known as grilling in some parts of the world and as broiling in other parts.

2.2.111 *Pyrolytic self-cleaning oven* denotes an oven having provision for removing normal cooking deposits or soiling from the interior of the oven by raising the temperature in the oven to a value exceeding 350 °C.

3. General requirement

This clause of Part 1 is applicable.

4. General notes on tests

This clause of Part 1 is applicable except as follows:

4.2 Addition:

Hob elements which are submitted separately are tested when installed in an appropriate appliance.

Addition:

For the tests of Sub-clauses 19.2 to 19.5, an additional sample may be necessary.

4.3 Replacement:

The tests are carried out in the order of the clauses of Part 1, except that, for pyrolytic self-cleaning ovens, the tests of Sub-clauses 22.109 and 22.112 to 22.114 inclusive are made immediately before the tests of Clause 19.

4.4 Addition:

When testing the electrical part of appliances supplied with energy other than electric, the influence of the non-electrical part of the appliance has to be taken into account.

4.13 Not applicable.

- 4.51 For measuring the temperature in the centre of the useful oven space during the tests of Clauses 11 and 19, thermocouples as specified in Sub-clause 11.3 of Part 1 are used.

NOTE. For information see X.8.

5. Rating

This clause of Part 1 is applicable except as follows:

Additional sub-clause:

- 5.101 The rated current of detachable hob elements shall not exceed 16 A.

Compliance is checked by determining the rated current from the rated input and the rated voltage.

6. Classification

This clause of Part 1 is applicable except as follows:

See Sub-clause 22.1.

Additional item:

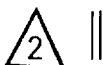
3. According to degree of protection against risk of fire, for appliances other than ovens and grills for building-in and appliances specifically designed to stand away from walls:

- for appliances intended to stand on a table or similar working surface:

NOTE. For information see X.9.

- appliances of type B;
- for appliances intended to stand on the floor, hob assemblies and cooking ranges for building-in:
 - appliances of type X;
 - appliances of type Y.

Ovens and grills for building-in are not classified according to degree of protection against risk of fire.



7. Marking

This clause of Part 1 is applicable except as follows:

- 7.1 Paragraph 1, item (h). Not applicable.

Addition:

If a cooking range incorporates a socket-outlet protected by means of fuses other than D-type fuses, the cooking range shall be marked with the maximum current allowed by the relevant fuse.

NOTE. For information see X.10.

Pyrolytic self-cleaning ovens shall be marked with the substance of the following warning, unless this warning is given in the instruction sheet:

All oven utensils, other than those specified in the instruction sheet, and excess spillage must be removed before starting the cleaning process.

- 7.2 Not applicable.

- 7.12 After paragraph 2.

Addition:

The instruction sheet shall state whether the appliance is of type X or type Y with regard to protection against overheating of surrounding surfaces and shall indicate the usage allowed.



If a cooking range is not delivered with a power supply cord, the instruction sheet shall include the necessary information with regard to the type of power supply cord to be connected, taking into account the temperature rise attained in normal use by the rear surface of the cooking range.

If a cooking range incorporates a socket-outlet protected by means of D-type fuses or miniature circuit-breakers intended to be screwed into E 27 fuse-bases, the instruction sheet shall state that the fuse or circuit-breaker may be replaced by the user.

If the appliance is provided with hob elements or a hob having surfaces of glass, ceramic or similar brittle material in or on which a heating element is mounted, or which are essential parts of the enclosure of live parts, the instruction sheet shall include the substance of the following warning:

CAUTION—As soon as any crack in the surface becomes visible, disconnect the appliance immediately from the supply.

If the appliance incorporates a lamp intended for illuminating the appliance and is not provided with a switch for disconnecting the appliance from the supply with a contact separation of at least 3 mm in all poles, the instruction sheet shall include the substance of the following warning:

CAUTION—Disconnect the appliance from the supply before replacing the lamp.

 If the manufacturer instructs the user to use the oven as a grill with the door open, then the instruction sheet shall contain the substance of the following warning:

CAUTION—Accessible parts may become hot when the grill is in use! Children should be kept away!

If the manufacturer instructs the user to set the control for cleaning to a position higher than for normal cooking purposes, then the instruction sheet shall contain a statement that under such conditions the surfaces may get hotter than usual and children should be kept away.

NOTE. For information see X.11.

7.14 Addition:

The marking for the maximum current allowed by the fuse protecting the socket-outlet shall be placed on or near the socket-outlet.

NOTE. For information see X.12.

If pyrolytic self-cleaning ovens are marked with the warning specified in Sub-clause 7.1, this warning shall be visible when the appliance is installed as in normal use, without removing covers other than those which have to be removed before starting the cleaning process.

The latter requirement is considered to be met, if the marking is visible when the oven door is open.

8. Protection against electric shock

This clause of Part 1 is applicable except as follows:

8.1 Addition:

Cooking ranges and cooking tables intended to accommodate detachable hob elements shall be so designed that, during insertion or removal of the hob elements, there is adequate protection against accidental contact with live parts.

Addition:

For heating elements situated at the top of an oven or grilling compartment and which glow visibly in normal use, it shall not be possible to touch live parts with the standard test finger shown in Figure 1, Part 1, if such elements are controlled by single-pole switches, by single-pole thermostats or by timers incorporating a single-pole switch.

NOTE. For information see X.13.

8.2 and 8.4 Not applicable.

8.9 **NOTE.** For information see X.14.

Additional sub-clause:

8.101 Heating elements, other than those situated at the top of an oven or grilling compartment, which are liable to be touched accidentally by a fork or similar pointed object in normal use, shall be so protected that it is not possible to touch their live parts with such an object

NOTE. For information see X.15.

Compliance is checked by a test similar to that of Sub-clause 8.1, the test being made with the long test pin shown in Figure 102, the pin being applied without appreciable force.

9. Starting of motor-operated appliances

This clause of Part 1 is applicable except as follows:

9.1 TEST. After paragraph 1.

Addition:

When testing a motor for a rotating spit or similar accessory, a weight, as shown in Figure 103, having a mass of approximately 4.5 kg, is attached to the rotating part.

9.2 Not applicable.

NOTE. For information see X.16.

10. Input and current

This clause of Part 1 is applicable except as follows:

10.1 *Addition:*

For appliances, other than those provided with means to limit the total input, which incorporate more than one heating unit, the total input may be determined by measuring the input of each heating unit separately.

NOTE. For information see X.17.

11. Heating

This clause of Part 1 is applicable except as follows:

11.1 TEST.

Replacement:

For appliances other than hob elements which are submitted separately, compliance is checked by determining the temperature rise of the various parts under the conditions specified in Sub-clauses 11.2 to 11.7, and 11.101'. |

Addition:

Hob elements which are submitted separately, are not subjected to the tests of this clause.

The test conditions for determining the temperature rise of accessible surfaces, including the temperature rise of oven doors, are under consideration.

NOTE. For information see X.18.

11.2 *Replacement:*

Appliances of type A and type B are placed on the floor of the test corner as near to the walls as possible.

The test corner consists of two walls at right angles, a floor and, if necessary, a ceiling, all of dull black painted plywood having a thickness of 20 mm.

Appliances of type X and cabinets containing hob assemblies of type X or cooking ranges for building-in of type X are placed against one of the walls of the test corner and away from the other wall, a rectangular test box as described hereafter being placed as near as possible to each side of the appliance.

Appliances of type Y, cabinets containing hob assemblies of type Y or cooking ranges for building-in of type Y are placed in the test corner, a rectangular test box as described hereafter being placed as close as possible to the free side of the appliance.

The test boxes are closed and made of dull black painted plywood, 10 mm thick; they have a width of 150 mm, their top being level with the top surface of the hob of the appliance and their front being flush with the front surface of the appliance.

Appliances specifically designed to stand away from walls are tested away from the walls of the test corner.

Appliances normally fixed to a wall are mounted on one of the walls of the test corner, as near to the other wall as is likely in normal use, unless otherwise specified in the manufacturer's instructions for installation.

Appliances for building-in are built into a cabinet having plywood walls, about 20 mm thick, in accordance with the manufacturer's instructions, the walls of the cabinet being painted dull black inside.



Appliances provided with a lid covering the heating surface(s) are tested with the lid in the position for normal use. Hinged lids which can be removed without the aid of a tool are removed.

NOTE. For information see X.19.

Precautions must be taken to prevent jets of steam from impinging on the walls of the test corner at or near places where thermocouples are positioned.

11.3 Addition:

For appliances of type A, the temperature rise of the side wall of the test corner is determined only below the hob, but not for that part which projects in front of the appliance.

'The test conditions for determining the temperature rise of accessible front surfaces including oven doors are lined out in Sub-clause 11.101. The test conditions for determining the temperature rise of other accessible surfaces are under consideration; for the time being, the values specified in the national standards apply.'



NOTE. For information see X.20.

For appliances of type Y, the temperature rise of the side walls of the test corner is determined as specified for appliances of type B, the temperature rise of the surface of the test box adjacent to the appliance being also determined.

For appliances of type X, the temperature rise of the surface of both test boxes adjacent to the appliance is determined.

For all types of appliance, the temperature rise of the floor and that of the back wall of the test corner, both above the below the hob, are determined.

For the various types of appliance, the location of the appliance in the test corner and the surfaces on which temperature-rise measurements are made, are shown in Figure 104.

NOTE. For information see X.21.

11.4 Replacement:

The appliances are operated in accordance with conditions of adequate heat discharge, with all heating elements that can be switched on at the same time under normal conditions of use in circuit. The supply voltage is such that the total input of the appliance is 1.15 times rated input.

If the appliance is provided with means to limit the total input, the test is made with whichever heating unit, or combination of heating units, as may be selected by this means, imposes the most severe conditions.

11.5 NOTE. For information see X.22.

11.6 Addition:

For pyrolytic self-cleaning ovens, the appliance as a whole is operated at the most unfavourable voltage between 0.94 times the minimum rated voltage and 1.06 times the maximum rated voltage.

11.7 Replacement:

Warming drawers and heated cupboards are operated for 30 min, with their control devices, if any, adjusted to the highest setting.

Hob elements are operated in accordance with conditions of adequate heat discharge with their control devices adjusted to the highest setting until the water boils, and then the control devices are adjusted so as to maintain the water gently boiling.

Griddles provided with means to reduce the input are operated with the control adjusted so as to limit the temperature at the centre of the griddle to a value as close as possible to 275 °C but not less than 245 °C, unless this condition cannot be obtained, in which case the control is adjusted to the highest setting.

Ovens provided with a thermostat are operated so that the mean temperature, over a cycle of the thermostat, in the centre of the useful oven space is maintained at 240 ± 4 °C or at the value obtained when the thermostat is adjusted to the highest setting, whichever is the lower. Other ovens are operated so that the temperature in the centre of the useful oven space is maintained at 240 ± 15 °C by switching the supply on and off.

Ovens with forced air circulation and provided with a thermostat, are operated as specified above, the mean temperature in the centre of the useful oven space being, however, maintained at 220 ± 4 °C, or if this value cannot be achieved, at the value obtained when the thermostat is adjusted to the highest setting.

NOTE. For information see X.23.

Ovens provided with a rotating spit or similar accessory are subjected to an additional test during which they are operated in accordance with conditions of adequate heat discharge for 60 min.

NOTE. For information see X.24.

Grills are operated for 30 min with the control adjusted to the highest setting for grilling indicated in the manufacturer's instructions. In the absence of such instructions, the control is adjusted to the highest setting. Grills provided with means to reduce the input are operated for 15 min with their control devices adjusted to the setting specified before, and then for 15 min at a setting giving an input as near as possible to half the input measured at the highest setting; for grills under cyclic control, the input to be considered is the average input.

Grills provided with a rotating spit or similar accessory are operated under the most unfavourable conditions specified in the manufacturer's instructions.

Pyrolytic self-cleaning ovens are subjected to an additional test, which is made after the appliance has been allowed to cool to approximately room temperature and for which the oven is operated under cleaning conditions for the maximum period that can be provided by the circuit controlling the cleaning operation, any other heating unit which is not interlocked being operated for a period of 1 h in accordance with the conditions of adequate heat discharge specified before for the appropriate unit, this period of 1 h being chosen, within the cleaning period, so as to impose the most severe conditions.

NOTE. For information see X.25.

Other appliances are operated for 60 min, the heating units of cooking ranges being operated as specified for the appropriate unit.

If a cooking range incorporates a warming drawer, a heated cupboard, a separate grill or a griddle, these heating units are operated during the last 30 min of the test.

NOTE. For information see X.26.

If a cooking range incorporates a grill mounted inside the oven, the range is allowed to cool to approximately room temperature and then an additional test is made with no oven heating element other than the grill element(s) and any element intended to be operated simultaneously with the grill element(s) in circuit.

11.8 Table 3, of Part 1, lines 2, 3, 4 and 5. Not applicable.

After Table 3.

Addition:

The temperature rise of the floor and the walls of the test corner and that of the sides of the test boxes, which is determined as described for the walls of the test corner, shall not exceed the values, in deg C (K), shown in the following table.

Places of measurement	Type of appliance			
	A	B	X	Y
Side wall of test corner above hob	—	65	—	65
Side wall of test corner below hob, but only alongside the appliance	65	65	—	65
Back wall of test corner above hob	65	65	75	65
Back wall of test corner below hob	65	65	75	65
Floor of test corner	65	65	75	65
Sides of test boxes alongside the appliance	—	—	75	65
Walls of cabinet in which hob assemblies or cooking ranges for building-in are installed	—	—	75	65

The temperature rise of the inside walls of the cabinet in which ovens and grills for building-in are installed shall not exceed 65 deg C (65 K).

The temperature rise of handles is not limited for those of inner glass doors, grill pans and rotating parts in ovens or grills.

During the additional test for pyrolytic self-cleaning ovens, the temperature rise of knobs, handles and levers, in degrees centigrade (kelvin), shall not exceed:

— if held continuously in normal use:

- if of metal 50
- if of porcelain or vitreous material. 60
- if of moulded material, rubber or wood. 70

— if held for short periods only in normal use:

- if of metal 55
- if of porcelain or vitreous material. 65
- if of moulded material, rubber or wood. 80

For determining the temperature rise of a socket-outlet incorporated in the appliance and of the corresponding plug, an appropriate 10/16 A 250 V test plug complying with CEE Publication 7 is inserted in the socket-outlet, the appliance being operated under the most unfavourable conditions occurring in normal use.

The plug is provided with a light polyvinyl chloride sheathed flexible cord (code designation HO3 VVH2—F), which is loaded, from a resistive supply source, with a current equal to 1.25 times the rated current of the fuse or miniature circuit-breaker protecting the socket-outlet, or with 10 A, whichever is the lower.

The cord connected to the plug has a nominal cross-sectional area of:

- 0.75 mm² if the maximum current allowed for the socket-outlet does not exceed 6 A,
- 1 mm² in other cases.

The temperature rise determined shall not exceed the values shown in the following table.

Parts	Temperature rise deg C (K)
Ambient of the socket-outlet ¹⁾ :	
— without T-marking	45
— with T-marking	T-25
Centre of the engagement face of the plug, at a distance of 2 mm below the surface.	45
¹⁾ The ambient of the socket-outlet is the temperature of the air measured at the hottest point at a distance of 5 mm from the surface of the socket-outlet concerned.	

NOTE. For information see X.27.1.





11.101 *Cooking ranges and ovens are subjected to the following test, during which the temperature rises on the accessible front surface are measured.*

The limitation of the temperature rises of the side walls of freestanding ranges is under consideration.

Appliances are positioned as indicated in Sub-clause 11.2 except that Type Y appliances are tested as Type X appliances.

Temperature rises are measured using a probe. A suitable probe is shown in Figure 106. The probe is applied with force of 4 ± 1 N to the surface in such a way to ensure that the best possible contact between the probe and the surface is ensured.

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

Care is especially necessary when surfaces which are not flat are being assessed.

The appliance is operated at rated voltage or the most unfavourable voltage in case of a range under conditions of adequate heat discharge. All heating elements, except grill elements that can be connected to the supply at the same time under normal conditions of use are switched on.

Ovens are operated without accessories. The mean oven temperature in the centre of the useful oven space is maintained at 200^{+4}_{-0} °C.

If an appliance incorporates two ovens, they are operated simultaneously.

Hob elements and griddles are operated in accordance with Sub-clause 11.7.

Warming drawers and heated cupboards are operated with the controls adjusted to the highest setting.

The appliance is operated from ambient temperature for a period of 60 min or until steady conditions are established, whichever is the shorter.

If the oven can be used for grilling and the manufacturer states that for grilling the door should be closed, the test on the appliance is repeated but with the oven operating in the grilling mode with the controls set according to the manufacturers' instructions. The duration of this test is 30 min, the grill being operated according to Sub-clause 11.7. However, if the oven has a rotating spit, the duration of the test is 60 min with the controls set to give the most unfavourable conditions specified in the manufacturers' instructions.

The temperature rises on the accessible front surfaces are measured, except for those on parts:

- which are not accessible with a 75 mm diameter probe having a hemispherical end and*
- for ranges, which are within 25 mm below the level of the hob or are above the hob.*

In addition, the temperature rise is not measured on small parts such as oven vents, hinges and trim where the width of the accessible surface is less than 10 mm.

During the test, the temperature rises shall not exceed the following values:

<i>Metal and painted metal surfaces</i>	<i>60 K</i>
<i>Vitreous enamelled metal surfaces</i>	<i>65 K</i>
<i>Glass and ceramic surfaces</i>	<i>80 K</i>
<i>Plastic surfaces</i>	<i>100 K</i>

NOTE. For information see X.27.

12. Operation under overload conditions of appliances with heating elements

This clause of Part 1 is applicable except as follows:

12.2 After paragraph 4.

Addition:

If a grill is incorporated in the oven, eight of the cycles are made with the oven in operation, and seven with the grill in operation.

After paragraph 7.

Addition

For pyrolytic self-cleaning ovens, the test is repeated, but with the oven operated under cleaning conditions and no other heating unit in operation.

12.3 Not applicable.

13. Electrical insulation and leakage current at operating temperature

This clause of Part 1 is applicable except as follows:

13.1 TEST. Paragraph 1.

Replacement:

Compliance is checked by the tests of Sub-clauses 13.2 and 13.3, which are made after the appliance has been operated under the conditions specified in Clause 11, with all control devices adjusted to the setting specified in Sub-clause 11.7. The appliance is operated until the leakage current has reached a steady value or for the time specified in Sub-clause 11.7 for that setting, whichever is the shorter period, after which all control devices are adjusted to their highest setting and the measurements are made immediately.

NOTE. For information see X.28.

If a grill is incorporated in the oven, either the oven or the grill is operated, whichever imposes the most severe condition.

For appliances provided with hob elements or hobs having surfaces of glass, ceramic or similar brittle material in or on which a heating element is mounted, or which are essential parts of the enclosure of live parts, the tests of Sub-clauses 13.2 and 13.3 are made with a pan filled with water, as described in Sub-clause 2.2.29, placed on each of the heated areas.

NOTE. For information see X.29.

Addition:

For pyrolytic self-cleaning ovens, the tests of Sub-clauses 13.2 and 13.3 are combined with the test of Sub-clause 32.101.

13.2 Paragraph 8, items (A)(1), (A)(2), (A)(3) and (A)(4).

Replacement:

— *for Class I appliances with heating elements which are detachable or can be switched off separately 1 mA or 1 mA per kW rated input for each element, whichever is the greater, with a maximum of 10 mA for the appliance as a whole.*