

Domestic cooking appliances burning gas —

Part 1-3: Safety — Appliances having a glass ceramic hotplate

The European Standard EN 30-1-3:2003 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 30-1-3:2003. It supersedes BS 5386-3:1980 and BS 5386-4:1991 which are withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GSE/35, Gas Cooking Appliances (Domestic), which has the responsibility to:

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Domestic cooking appliances burning gas - Part 1-3: Safety - Appliances having a glass ceramic hotplate

Appareils de cuisson domestiques utilisant les
combustibles gazeux - Partie 1-3: Sécurité - Appareils
comportant une table de travail vitrocéramique

Haushalt-Kochgeräte für gasförmige Brennstoffe - Teil 1-3:
Sicherheit - Geräte mit Glaskeramik-Kochteil

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Contents

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Classification	5
5 Constructional requirements	5
6 Performance requirements	6
7 Test methods	7
8 Marking and instructions	9
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EC Directives	11
Bibliography	14

Foreword

This document (EN 30-1-3:2003) has been prepared by Technical Committee CEN/TC 49, "Gas cooking appliances", the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2004, and conflicting national standards shall be withdrawn at the latest by February 2004.

This document supersedes EN 30:1979.

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

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

This standard is intended to be used with EN 30-1-1 or EN 30-1-4 and, where appropriate, EN 30-1-2.

Requirements for rational use of energy are given in EN 30-2-1 and EN 30-2-2 as appropriate.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the construction and performance characteristics as well as the requirements and methods of test for the safety and marking of domestic cooking appliances, capable of using the combustible gases defined in EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999, having one or more enclosed covered burners under a glass ceramic panel, referred to in the text as "appliances".

This standard is intended to be used in conjunction with EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999 or EN 30-1-4:2002, and, where appropriate, EN 30-2-1:1999.

It does not cover all of the safety requirements and methods of test that are specific to forced convection ovens and/or grills.

Unless excluded specifically hereafter, this standard covers appliances or their components, whether or not the component parts are independent or incorporated into a single appliance, even if the other heating components of the appliance use electrical energy (e.g. gas-electric-cookers).

This standard includes requirements covering the electrical safety of equipment incorporated in the appliance that is associated with gas. It does not include requirements covering the electrical safety of electrically-heated component parts of their associated equipment¹⁾.

This Standard does not apply to:

- outdoor appliances;
- appliances connected to a combustion products evacuation duct;
- appliances having a pyrolytic gas oven;
- appliances having automatic burner control systems that
 - have a second safety time, or
 - control one or more burners that incorporate a separate ignition burner;
- appliances having an uncovered burner or a non-enclosed covered burner;
- appliances equipped with air-gas ratio controls;
- appliances with more than one fan for the supply of combustion air and/or for the evacuation of products of combustion from a combustion chamber;
- appliances supplied at pressures greater than those defined in 7.1.2.

This standard does not cover the requirements relating to third family gas cylinders, their regulators and their connection.

This standard only covers type testing.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

1) Refer to the electrical safety rules.

EN 30-1-1:1998, *Domestic cooking appliances burning gas fuel – Part 1-1: Safety – General.*

EN 30-1-1:1998/A1:1999, *Domestic cooking appliances burning gas – Part 1-1: Safety – General – Amendment 1.*

EN 30-1-4:2002, *Domestic cooking appliances burning gas – Part 1-4: Safety – Appliances having one or more burners with an automatic burner control system.*

EN 60068-2-75, *Environmental testing. Part 2-75: Test methods. Test Eh. Hammer test.*

EN 60335-2-6:1999, *Household and similar electrical appliances. Part 2-6: Particular requirements. for stationary cooking ranges, hobs, ovens and similar appliances (IEC 60335-2-6:2002 modified).*

3 Terms and definitions

For the purposes of this document, the terms and definitions of EN 30-1-1:1998 and/or EN 30-1-1:1998/A1:1999 and/or EN 30-1-4:2002 apply as well as the following terms and definitions.

3.1 Additional terms and definitions for appliances with glass ceramic hotplates

3.1.1

glass ceramic hotplate

part of a cooking appliance, consisting of a compartment having continuous glass ceramic panel that forms its upper surface in which one or more burners are arranged so as to transmit heat to cooking or warming zones

3.1.2

cooking zone

zone of a glass ceramic panel which is located directly above the burner and which may be heated up on demand to high temperatures for cooking purposes

3.1.3

warming zone

any zone of a glass ceramic panel, heated by the products of combustion, as defined by the manufacturer, used to keep cooking vessels warm

3.1.4

temperature limiter of the glass ceramic panel

device which shuts off the gas supply to the burner if the temperature limit of the glass ceramic panel is achieved and which may open the gas supply to the burner automatically if the temperature is below the limit (see 5.5.1)

3.1.5

working zone

any zone in which the user of the appliance has to move their hands in order to operate controls or manipulate cooking vessels

4 Classification

The classification given in 4 of EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999 and EN 30-1-4:2002 applies, as appropriate.

5 Constructional requirements

The corresponding clauses of EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999 or EN 30-1-4:2002 apply with the following modifications/additions:

5.1.4 Strength

5.1.4 of EN 30-1-1:1998 applies except 5.1.4.2 and the following addition:

5.1.4.3 Glass ceramic panel

The materials used for glass ceramic panels shall have the mechanical characteristics that ensure durability against damage in normal use.

This requirement is deemed to be met if after application of the test given in 7.6.1, the surface of the glass ceramic panel is not broken and does not show any crack or rupture.

In the case of appliance incorporating live parts underneath the glass or glass ceramic surface, the requirements given in 16.3 of EN 60335-2-6:1999 have to be met.

5.2.5 Ignition systems

5.2.6 of EN 30-1-4:2002 applies if the appliance incorporates an automatic burner control system. For other appliances, 5.2.5 of EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999 is replaced with the following:

All the components of the ignition device shall be designed to avoid damage or accidental displacement in normal use. The relative position of the ignition device and the burner shall be sufficiently well defined to ensure satisfactory operation of the assembly.

When the ignition devices include a permanent pilot, the gas rate of this pilot shall not exceed 0,06 kW for each burner controlled.

If necessary, it shall be possible to adjust the pilot gas rate in the event of a gas change, either by adjuster or by change of injector.

A means shall be provided to cut off the gas supply to any pilot.

The ignition system shall meet the requirements of 6.2.1 and 6.3.1 of EN 30-1-1:1998.

5.5 Additional requirements for the glass ceramic hotplates

5.5.1 Thermostat and temperature limiter

If the appliance has a thermostat or a temperature limiter for the control of the temperature of the glass ceramic panel, this shall be designed and arranged so, that the maximum temperature of the glass ceramic panel declared by its manufacturer is not exceeded.

5.5.2 Marking of the cooking and warming zone

The cooking zone shall be clearly visible, if necessary with the aid of marking. When marking is necessary this shall be durable.

If the appliance has warming zones, such zones shall be identified with a marking on the glass ceramic panel. The purpose of the marking shall be explained in the instructions for use and maintenance.

NOTE The durability and indelibility of these markings is verified by a test carried out in accordance with EN 60335-1:1995.

6 Performance requirements

The corresponding clause 6 of EN 30-1-1:1998 or EN 30-1-4:2002 apply with the following modifications/additions:

6.7 Additional requirements for appliances with glass ceramic hotplates

6.7.1 Performance of the thermostat/energy regulator or the temperature limiter of the glass ceramic panel

When tested under the test conditions of 7.6.2.1 it shall be verified, that the temperature limit for the glass ceramic panel declared by its manufacturer is not exceeded.

In addition it shall be verified that the temperature of the support, the walls, the adjacent surfaces and the built-in cabinet do not exceed the room temperature by more than 120 K.

6.7.2 Safety in case of a failure of the thermostat/energy regulator or the temperature limiter of the glass ceramic panel

When tested under the conditions of 7.6.2.2 it shall be verified that the temperature of the support, the walls, the adjacent surfaces and the built-in cabinet do not exceed the room temperature by more than 120 K.

Where a hotplate burner has an automatic burner control and a user-adjustable thermostat, it shall be verified by application of the fault analysis procedure given in Annex G of EN 30-1-4:2002 that failure of this thermostat would not create a hazard.

6.7.3 Evacuation of the combustion products

If any openings for evacuation of the combustion products are located in the working zone of the user, the temperature of the combustion products at a distance of 100 mm from these openings shall not exceed the ambient temperature by more than 130 K under the following conditions:

- 7.3.1.5 Test No. 3 of EN 30-1-1:1998 or EN 30-1-4:2002 as appropriate;
- 7.3.1.5 Test No. 4 of EN 30-1-1:1998 or EN 30-1-4:2002 as appropriate, if the appliance is fitted with an oven with cleaning position.

7 Test methods

The corresponding clause 7 of EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999 or EN 30-1-4:2002 applies with the following modifications/additions:

7.1.4 Pans

7.1.4 of EN 30-1-1:1998 is replaced by the following:

When the use of a pan is required for individual tests of the burners of a glass ceramic hotplate, the pan and the corresponding quantity of water is selected from C.2 of EN 30-1-1:1998. The pan shall have a diameter approximating to that of the relevant cooking zone.

In tests where pans are required to be placed simultaneously over each the hot plate burners there shall be a minimum distance of 10 mm between the wall of the pan and:

- all other pans,
- all walls of the test corner,
- all sampling devices for the combustion products.

If using the pans described for the individual tests of those burners, this arrangement is not possible, a pan of the diameter according to C.2 of EN 30-1-1:1998, is used on each of the burners which allows these arrangements to be fulfilled.

7.2.1.2 Hotplate pan supports

7.2.1.2 of EN 30-1-1:1998 or EN 30-1-4:2002 is not applicable.

7.3.1.2.1.2 Operating conditions

The measurements are taken with the burner operating under the following conditions:

A pan is placed on the cooking-zone in accordance with 7.1.4 of this standard.

7.6 Additional tests for appliances with glass ceramic hotplates

7.6.1 Strength of the glass ceramic panel

7.6.1.1 Impact strength

Compliance with 5.1.4.3 is checked by applying blows to the appliance by means of the spring operated impact-test apparatus described in EN 60068-2-75.

The appliance is rigidly supported and three blows are applied to every point of the horizontal surface of the glass ceramic panel that is likely to be weak. Each blow is applied with an impact energy of $(0,5 \pm 0,04)$ Nm.

7.6.1.2 Verification of the strength of the glass ceramic panel against mechanical and thermal stress

Each burner of the glass or glass ceramic hotplate is supplied with one of the reference gases at the normal pressure corresponding to the appliance category. The burners are operated at full rate until steady conditions are established. Then the burners are shut off.

NOTE Steady conditions are deemed to be met if the temperature of the glass ceramic panel does not increase more than 1 K in 15 minutes.

The test is carried out with a pan having a bottom of copper or aluminium, which is flat over a diameter of (120 ± 10) mm and has edges rounded with a radius of at least 10 mm, and uniformly filled with sand or shot to a total mass of $(1,8 \pm 0,01)$ kg. The pan is dropped flat, from a height of 150 mm.

This operation is carried out ten times in succession on each cold cooking zone and on each warming zone of the appliance.

Compliance with 5.1.4.3 is checked.

Then burners are operated simultaneously at full rate, until steady conditions are established. The burners are then shut off and a quantity of 1,0 litres to 1,1 litres of cold water is poured steadily and uniformly over the glass ceramic panel. 1 min later all excess water is removed and the surface wiped dry.

Compliance with 5.1.4.3 is checked.

7.6.2 Thermostat/energy regulator or temperature limiter

7.6.2.1 Verification of the performance of the thermostat/energy regulator or the temperature limiter of the glass ceramic hotplates

The following test is carried out for the glass ceramic hotplates:

All burners of the glass ceramic hotplate are operated simultaneously at full rate, until steady conditions are established. The test is carried out without pans on the glass ceramic hotplate. The temperatures of the glass ceramic panel are measured by means of thermocouples located using the measuring device in Figure 1 or a measuring device giving comparable results at the hottest point. The measuring device is calibrated according to E.1 of EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999.

The maximum temperature on the upperside of the glass ceramic panel is compared with the data declared by the manufacturer. The temperature measurements of the support, the walls, the adjacent surfaces and the built-in cabinet are carried out as described in 7.3.1.5.1 and 7.3.1.5.3 of EN 30-1-1:1998.

The equipment for the temperature measurement of the glass ceramic panel shall have an accuracy of ± 10 K.

7.6.2.2 Safety in case of a failure of the thermostat/energy regulator or the temperature limiter of the glass ceramic hotplates

All burners are operated according to 7.3.1.5.2.1 of EN 30-1-1:1998 with the thermostat/energy regulator or temperature limiter inoperative. If two temperature limiters are fitted, they are made inoperative in turn. All cooking and warming zones are covered with pans according to 7.1.4.

The temperature measurements of the support, the walls, the adjacent surfaces and the built-in cabinet are carried out as described in 7.3.1.5.1 and 7.3.1.5.3 of EN 30-1-1:1998.

7.6.3 Combustion

The products of combustion produced by the hotplate burners are sampled using a device that collects all products of combustion, but does not alter their course to the extent where this is likely to affect the quality of combustion.

The analysis of the products of combustion is carried out in accordance with 7.3.2.4.3 of EN 30-1-1:1998 or 7.5.2.2 of EN 30-1-4:2002 as appropriate.

The method of sampling shall ensure that the sample is representative.

8 Marking and instructions

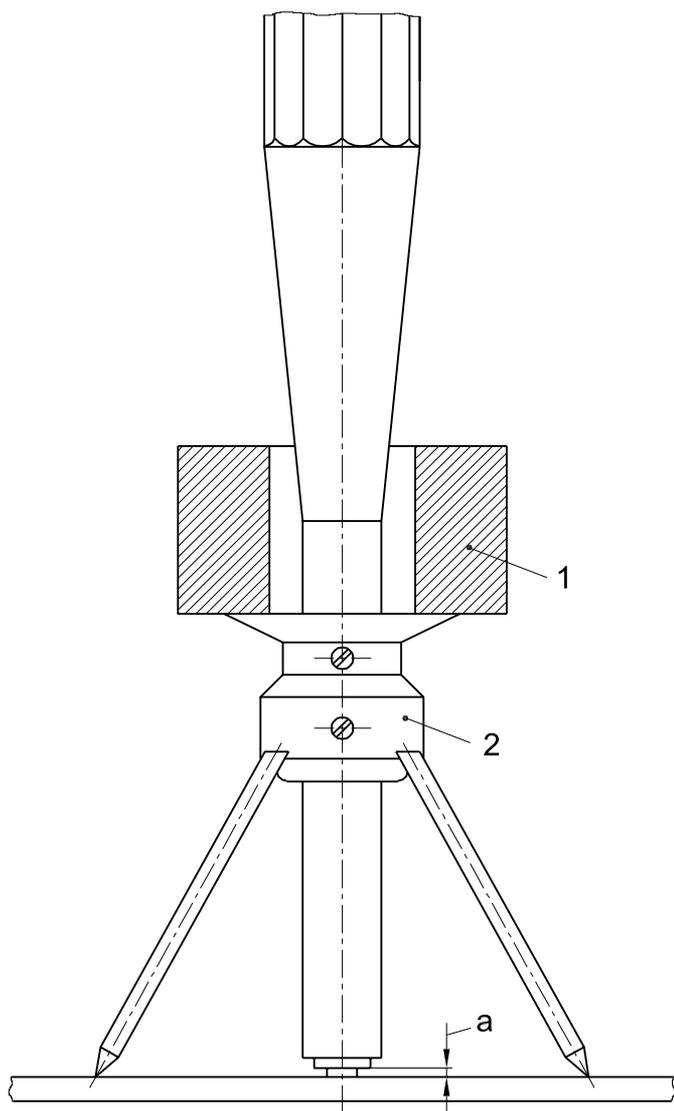
The requirements of clause 8 of EN 30-1-1:1998 or EN 30-1-4:2002 apply as appropriate with the following addition to 8.3.1:

The instructions for use and maintenance shall provide the user with information that the glass ceramic panel could be hot, even though the operating indicator is not visible.

It shall be stated in the instructions for use and maintenance, that aluminium foils and plastic vessels are not to be placed on the hot glass ceramic surface and that this surface shall not be used as a storage space.

The instructions shall also include a description of the cooking zones and warming zones.

It shall be stated in the instructions for use and maintenance, that suitable vessels have to be used.



- 1 Mass \approx 500 g
- 2 Tripod
- a 1 mm to 1,5 mm

Figure 1 – Measuring device

Annex ZA (informative)

Clauses of this European Standard addressing essential requirements or other provisions of EC Directives

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of the EU Directive 90/396/EEC.

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

The following clauses of this standard are likely to support requirements of Directive 90/396/EEC.

Compliance with clauses of this standard provides one means of conforming with the specific essential requirements of the Directive concerned and associated EFTA regulations.

Table ZA.1

Essential requirement	Subject	Requirements of EN 30-1-1:1998 ^a	Requirements of EN 30-1-4:2002 ^b	Requirements of this standard	Comments
1	Annex 1 General conditions				
1.1	Safety of operation	5.1.3, 5.1.9, 6.1.7 and 6.1.8	1, 2, 3, 5.1.1, 5.2.3 (except 5.2.2.2), 5.2.4, 5.3.1, 5.3.2, 5.3.3, 5.3.9, 6.1.1 and 6.4.1	1, 2, 3	
1.2	Marking and instructions Instructions for the installer Instructions for the user Warnings Official languages		{ 8	{ 8	
1.2.1	Information in the technical instructions		8.3.1 and 8.3.2	8	
1.2.2	Content of the instructions for use and maintenance		8.3.1 and 8.3.3	8	
1.2.3	Marking on the appliance and packaging		8.1, 8.2	8	
1.3	Fittings		2, 5.2.5, 5.2.7 and 5.2.8	2, 5.2.5	
2	Materials				
2.1	Characteristics		5.1.2	5.1.4	
2.2	Guarantee		1 and foreword	1 and foreword	

"continued"

Table ZA.1 “continued”

Essential requirement	Subject	Requirements of EN 30-1-1:1998 ^a	Requirements of EN 30-1-4:2002 ^b	Requirements of this standard	Comments
3	Design and construction				
3.1	General				
3.1.1	Durability	5.1.2, 5.1.4, 5.1.6, 5.1.7, 5.1.8, 5.2.9 and 5.2.10	5.2.2, 5.2.9 and 6.1.3.1	5.1.4.3	
3.1.2	Condensation	5.1.2, 2nd paragraph, 2nd indent			
3.1.3	Risk of explosion	5	5	5	
3.1.4	Penetration of water and air	5.1.5 and 6.1.1			"Penetration of water" : not applicable
3.1.5	Normal fluctuation of auxiliary energy	5.1.10	6.2.3, 6.3.3, 6.5.2 and 6.6.2		
3.1.6	Abnormal fluctuation of auxiliary energy	5.1.10	6.2.3, 6.3.3, 6.5.2 and 6.6.2		
3.1.7	Electrical safety	5.1.11			
3.1.8	Parts under pressure	5.1.2 and 6.1, 6.2			Only applicable to appliances with an incorporated cylinder
3.1.9	Failure of a safety device : - flame supervision device - governor - thermostat - cooling fan - combustion fan - multifunctional control - automatic shut-off valve - automatic burner control system	6.1.8 6.1.5.1.5, 6.1.10 5.2.11 and 6.1.9	5.2.7, 5.4 and 6.1.2 5.2.8 5.2.5, 5.3.4, 6.4.2, Annex G 6.5.2, 6.5.3, 6.6.2 and 6.6.3 5.3.6 5.3.7, 5.4 and Annex G 5.3.8, 5.4 and Annex G		
3.1.10	Safety/control		5.2.7		
3.1.11	Protection of parts adjusted by the manufacturer		5.2.4 and 5.2.8		
3.1.12	Marking of adjusting and control devices	5.2.2.2	5.2.3, 5.2.5, 5.3.1 and 5.3.2	5.5.2	
3.2	Unburnt gas release				
3.2.1	Risk of gas leakage	5.1.5, 5.1.6 and 6.1.1.1			
3.2.2	Risk of accumulation in the appliance	5.2.9.1.4 and 5.2.12	5.2.7, 5.3.8, 5.4 (7.4.3), 6.1.2, 6.1.3.2, 6.2.2, 6.3.2, 6.5.1 and 6.6.1		
3.2.3	Risk of accumulation in the space		5.2.7, 5.4, 6.1.2, 8.1, 8.2, 8.3.2.1, 8.3.3 and Annex G		

“continued”

Table ZA.1 “concluded”

Essential requirement	Subject	Requirements of EN 30-1-1:1998 ^a	Requirements of EN 30-1-4:2002 ^b	Requirements of this standard	Comments
3.3	Ignition				
	Ignition	5.2.9.2, 5.2.12.2	5.2.6, 6.2.2, 6.3.2, 6.5.1 and 6.6.1	5.2.5	
	Re-ignition	5.2.12.3, 6.1.9.2, 6.1.9.3	6.2.2, 6.3.2, 6.5.1 and 6.6.1		
	Cross-lighting		6.2.2, 6.3.2 (test 7.3.2.1 to 7.3.2.3 and 7.3.3.1 to 7.3.3.3), 6.5.1 and 6.6.1		
3.4	Combustion				
3.4.1	Flame stability	6.1.9.2 and 6.1.9.3	6.2.2, 6.3.2, 6.5.1 and 6.6.1		
	Concentration of harmful substances in the combustion products	5.2.9.3	5.3.5, 6.2.3, 6.3.3, 6.5.2, 6.5.3, 6.6.2 and 6.6.3 (see foreword)		
3.4.2	Release of combustion products				Not applicable
3.4.3	Release of combustion products into the space (for appliances having a flue, in the event of abnormal draught)				Not applicable
3.4.4	CO limit in the space (Heating appliance and non connected water heater)				Not applicable
3.5	Rational use of energy		See foreword	See foreword	
3.6	Temperatures				
3.6.1	Floor and adjacent surfaces	6.1.5.2 and 6.1.9			
3.6.2	Control handles	6.1.5.1.6 and 6.1.5.1.7			
3.6.3	External surface temperatures	6.1.5.1.1 and 6.1.5.1.2			
3.7	Foodstuffs and water used for sanitary purposes	5.1.2 and 5.2.13			
	Annex II		1 and Foreword	1 and foreword	
	Annex III		8.1		

^a Requirements of EN 30-1-1:1998 and EN 30-1-1:1998/A1:1999 that have been called up by this standard even though their clause numbers are not specifically mentioned.

^b Requirements of EN 30-1-4:2002 that have been called up by this standard even though their clause numbers are not specifically mentioned.

Bibliography

EN 60335-1:1995, *Household and similar electrical appliances. Part 1: General requirements.*

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