



SLOVENSKI STANDARD SIST EN 60335-2-35:1995

01-marec-1995

Safety of household and similar electrical appliances - Part 2: Particular requirements for instantaneous water heaters (IEC 335-2-35:1991, modified)

Safety of household and similar electrical appliances -- Part 2: Particular requirements for instantaneous water heaters

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

Sécurité des appareils électrodomestiques et analogues -- Partie 2: Règles particulières pour les chauffe-eau instantanés

[SIST EN 60335-2-35:1995](https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-aeb0-32145f2965e5/sist-en-60335-2-35-1995)

[https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-aeb0-](https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-aeb0-32145f2965e5/sist-en-60335-2-35-1995)

[32145f2965e5/sist-en-60335-2-35-1995](https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-aeb0-32145f2965e5/sist-en-60335-2-35-1995)

Ta slovenski standard je istoveten z: EN 60335-2-35:1994

ICS:

| | | |
|-----------|--------------------------|-------------------------|
| 13.120 | Varnost na domu | Domestic safety |
| 91.140.65 | Oprema za ogrevanje vode | Water heating equipment |

SIST EN 60335-2-35:1995

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 60335-2-35:1995](https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-aeb0-32145f2965e5/sist-en-60335-2-35-1995)

<https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-aeb0-32145f2965e5/sist-en-60335-2-35-1995>

ICS 97.100

Supersedes HD 282 S1:1990 + A1:1992

Descriptors: Household electrical appliances, instant water heaters, safety requirements, protection against electric shock, fire protection, protection against mechanical hazard

English version

SAFETY OF HOUSEHOLD AND SIMILAR ELECTRICAL APPLIANCES
PART 2: PARTICULAR REQUIREMENTS FOR INSTANTANEOUS WATER HEATERS
(IEC 335-2-35:1991, modified)

Sécurité des appareils
électrodomestiques
et analogues

Deuxième partie:

Règles particulières pour les
chauffe-eau instantanés
(CEI 335-2-35:1991, modifiée)

Sicherheit elektrischer
Geräte für den Hausgebrauch
und ähnliche Zwecke

Teil 2:

Besondere Anforderungen für
Durchflusserwärmer
(IEC 335-2-35:1991, modifiziert)

This European Standard was approved by CENELEC on 4 October 1994. 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.

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

R The proposal to endorse the second edition of IEC 335-2-35:1991, document CLC/TC 61 (SEC) 775, was circulated under the enquiry procedure in March 1991. This proposal was discussed during the Brussels meeting in November 1991, when it was decided to submit a draft for EN 60335-2-35 to the voting procedure. This procedure started in July 1992 but the draft did not receive sufficient support.

The comments were discussed during the Berlin meeting in February 1993 when it was decided to submit a second draft for EN 60335-2-35 to the voting procedure. This draft was circulated in July 1993.

A proposal to amend prEN 60335-2-35, document CLC/TC 61 (DE) 430, was also discussed during the Berlin meeting, when it was decided to submit a draft for an amendment to the Unique Acceptance Procedure (UAP). This draft was circulated as prAA in July 1993.

The drafts were combined and ratified by CENELEC as EN 60335-2-35 on 4 October 1994.

This European Standard 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) 1995-03-01
- date of withdrawal of conflicting national standards (dow) 1997-03-01

This European Standard replaces HD 282 S1:1990 and its amendment.

For products which have complied with HD 282 S1:1990 and its amendment A1:1992 before 1997-03-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2002-03-01.

This standard has to be used in conjunction with EN 60335-1:1988, Safety of household and similar electrical appliances, Part 1: General requirements, including its amendments A2:1988, A5:1989, A6:1989, A51:1991, A52:1992, A53:1992, A54:1992 and A55:1993.

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

Subclauses which are in addition to those in Part 1 are numbered starting with 101.

Special national conditions (snc) causing a deviation from this European Standard are listed in annex ZX and are in addition to those in EN 60335-1.

National deviations from this European Standard are listed in annex ZY and are in addition to those in EN 60335-1.

- r The following print types are used:
- R - requirements: in roman type;
 - i - test specifications: in italic type ;
 - r - explanations: in small roman type.

- r NOTE: In this document the following indications are used in the margin:
- R for roman type,
 - i for italic type,
 - r for small roman type,
 - p for instructions for preparing the printed version.

https://standards.iteh.ai/catalog/standards/sist/60335-2-35/1995
3214512055e5/sist-en-60335-2-35-1995
SIST EN 60335-2-35:1995
iTech STANDARD PREVIEW
(standards.iteh.ai)

ENDORSEMENT NOTICE

R The text of the International Standard IEC 335-2-35:1991 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

p Foreword Delete

1 **SCOPE**

p 1.1 Replace "IEC 335-2-21" by "EN 60335-2-21".

6 **CLASSIFICATION**

p 6.1 Add:

r Refer snc.

7 **MARKING**

p 7.12 In the paragraph dealing with water heaters intended to be used with a spray head, replace "water heaters" by "open-outlet water heaters".

8 **PROTECTION AGAINST ELECTRIC SHOCK**

p Add:

i 8.1 Modification:

Instead of being tested as delivered, water heaters intended to be permanently connected to fixed wiring by cables having a nominal cross-sectional area exceeding 2,5 mm², are tested after having been installed in accordance with the instructions.

Addition:

r **NOTE:** The connections to the water mains are assumed to be in position during the tests.

https://standards.iteh.ai/catalog/standards/sist/861be7ab-1bc9-4313-ae7b-3214512965e5/iec-en-60335-2-35-1995
SIST EN 60335-2-35:1995
iTeH STANDARD PREVIEW
(standards.iteh.ai)

COMMON MODIFICATIONS

- 15 **MOISTURE RESISTANCE**
- p 15.2 Replace the addition by:
- i Wall-mounted water heaters are installed in accordance with the manufacturer's instructions. However there shall be a gap of not less than 3 mm between the back of the water heater and the mounting surface.
- 19 **ABNORMAL OPERATION**
- p 19.2 Replace the addition by:
- i All controls which operate during the test of clause 11 are short-circuited in turn.
- Flow switches of open-outlet water heaters are short-circuited and the inlet valve adjusted to obtain the most unfavourable conditions.
- Closed water heaters not liable to be operated empty and those provided with a flow switch are completely filled as in normal use with the flow switch short-circuited and operated with the outlet valve closed.
- Other closed water heaters are filled with sufficient water to just cover the heating elements and operated with the outlet valve open.
- r **NOTE:** Water heaters are not liable to be operated empty if back flow through the inlet pipe is prevented by means incorporated in the water heater or required by the instruction sheet. Such means may be a check valve or a pipe interruptor.
- p 19.101 Add:
- i Closed water heaters incorporating a flow switch are not subjected to the tests.
- 22 **CONSTRUCTION**
- p 22.103 Delete the last paragraph of the requirement.

https://standards.iteh.ai/catalog/standards/sist/8611b69-4313-4140-3214512965e5/sist-en-60335-2-35:1994
SIST EN 60335-2-35:1994
SIST EN 60335-2-35:1995
STANDARD PREVIEW
(standard.iteh.ai)

COMMON MODIFICATIONS

- 24 **COMPONENTS**
- p 24.101 Add to the requirement:
- R ... or be located so that they can only be reset after removal of a non-detachable cover.
- p 24.103 Replace the first sentence of the test specification by:
- i The water heater is installed in accordance with the manufacturer's instructions, any control which operates during the test of clause 11 being short-circuited.
- 25 **SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CABLES AND CORDS**
- p 25.1 Add:
- R Bare-element water heaters shall be for permanent connection to fixed wiring.

Figures
101 and 102 Replace "10 cm" by "10 mm".

ITeT STANDARD PREVIEW
(standards.iteh.ai)
EN 60335-2-35:1995
321412965e5/sist/41-60335-2-35-1995

ANNEX ZX (normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard or Harmonization Document.

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

| <u>Clause</u> | <u>Special national condition</u> |
|---------------|---|
| 6.1 | GREECE Bare-element water heaters are not allowed. |
| 7.12 | FRANCE The installation of bare element water heaters has to comply with particular conditions dependant on the supply system and which are to be included in the instructions. |

SIST EN 60335-2-35:1995

https://standards.iteh.ai/catalog/standards/sist/861be7ab-1b93-4313-ae60-214512965e5/sist-en-60335-2-35-1995

SIST EN 60335-2-35:1995

STANDARD PREVIEW
standards.iteh.ai

ANNEX ZY (informative)

A-deviations

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

This European Standard falls under Directive 73/23/EEC.

NOTE (from CEN/CENELEC IR Part 2, 3.1.9): Where standards fall under EC Directives, it is the view of the Commission of the European Communities (OJ No G 59, 9.3.1982) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted except under the safeguard procedure provided for in the relevant Directive.

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

| <u>Clause</u> | <u>Deviation</u> |
|---------------|--|
| 1.1 | AUSTRIA (Dampfkesselverordnung - DKV, BGBl Nr. 510/1986) Pressure vessels shall comply with the decree "Dampfkesselverordnung - DKV". |
| 5.101 | FINLAND (Resolution of the Ministry of Domestic Affairs No. 867/75) and NORWAY (Byggeforskrift 1987 punkt 46:31) For closed water heaters, the minimum rated pressure is 1,0 MPa (10 bar). |
| 22 | UNITED KINGDOM (Building Regulations 1991 Part G3) In addition to a non-resetting thermal cut-out any closed water heater having a storage capacity in excess of 15 l shall be fitted with a temperature relief valve to BS 6283 Part 2 or a combined temperature/pressure relief valve to BS 6283 part 3. |
| 24.102 | UNITED KINGDOM (Building Regulations 1991 Part G3) In any closed water heating system having a storage capacity in excess of 15 l adequate precautions shall be taken to prevent the water temperature of the stored water at any time exceeding 100 °C. |

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC
335-2-35

Deuxième édition
Second edition
1991-01

**Sécurité des appareils électrodomestiques
et analogues**

Deuxième partie:

**Règles particulières pour les chauffe-eau
instantanés**

**Safety of household and similar electrical
appliances**

Part 2:

**Particular requirements for instantaneous
water heaters**

© CEI 1991 Droits de reproduction réservés — Copyright — all rights reserved

Aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'éditeur.

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Bureau Central de la Commission Electrotechnique Internationale 3, rue de Varembe Genève, Suisse



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

S

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

| | Page |
|---|--------|
| FOREWORD | 5 |
| Clause | |
| 1 Scope | 9 |
| 2 Definitions | 11 |
| 3 General requirement | 11 |
| 4 General notes on tests | 13 |
| 5 Rating | 13 |
| 6 Classification | 15 |
| 7 Marking | 15 |
| 8 Protection against electric shock | 17 |
| 9 Starting of motor-operated appliances | 19 |
| 10 Input and current | 19 |
| 11 Heating | 19 |
| 12 Operation under overload conditions of appliances with heating elements | 19 |
| 13 Electrical insulation and leakage current at operating temperature | 19 |
| 14 Radio and television interference suppression | 21 |
| 15 Moisture resistance | 21 |
| 16 Insulation resistance and electric strength | 21 |
| 17 Overload protection | 21 |
| 18 Endurance | 21 |
| 19 Abnormal operation | 23 |
| 20 Stability and mechanical hazards | 27 |
| 21 Mechanical strength | 27 |
| 22 Construction | 27 |
| 23 Internal wiring | 33 |
| 24 Components | 33 |
| 25 Supply connection and external flexible cables and cords | 35 |
| 26 Terminals for external conductors | 37 |
| 27 Provision for earthing | 37 |
| 28 Screws and connections | 37 |
| 29 Creepage distances, clearances and distances through insulation | 37 |
| 30 Resistance to heat, fire and tracking | 37 |
| 31 Resistance to rusting | 37 |
| 32 Radiation, toxicity and similar hazards | 37 |
| Figures | 39 |
| Annex A - Thermal controls and overload releases | 41 |