



SLOVENSKI STANDARD
SIST EN 89:2001/A4:2007
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Akumulacijski plinski grelniki za pripravo sanitarne tople vode – Dopolnilo A4

Gas-fired storage water heaters for the production of domestic hot water

Gasbeheizte Vorrats-Wasserheizer für den sanitären Gebrauch

Appareils de production d'eau chaude par accumulation pour usages sanitaires utilisant les combustibles gazeux

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Ta slovenski standard je istoveten z: EN 89:1999/A4:2006

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English Version

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pour usages sanitaires utilisant les combustibles gazeux

Gasbeheizte Vorrats-Wasserheizer für den sanitären
Gebrauch

This amendment A4 modifies the European Standard EN 89:1999; it was approved by CEN on 28 September 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant 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 CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 89:1999/A4:2006) has been prepared by Technical Committee CEN/TC 48 “Domestic gas-fired water heaters”, the secretariat of which is held by AFNOR.

This Amendment to the European Standard EN 89:1999 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

This amendment includes requirements relative to the metallic, plastic and other non-metallic materials that are used in water heaters and which come into contact with water intended for human consumption. It is intended to ensure that products of this kind complying with these requirements meet current technological development and requirements which will result from the application of the EAS (European Approval Scheme) of the European Commission, with regard to the service life of the water heaters and their physiological suitability.

NOTE As long as no European regulations are enforced (EAS) national regulations in force.

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

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6.1.2 Materials

Add the following subclause header:

“6.1.2.1 General”

Replace the penultimate paragraph by the new subclause:

“6.1.2.2 Metallic materials

6.1.2.2.1 Corrosion resistance

Provided that the water heater is used in accordance with the manufacturer's instructions:

- the functioning of components manufactured from corrosion-resistant metallic materials shall not be affected by corrosion within the expected service life of the water heater and
- no special maintenance shall be required to keep the components in good working order.

6.1.2.2.2 Requirements

Materials that come into contact with water intended for human consumption shall withstand the mechanical, chemical and thermal stresses to which they are exposed during the service life of the water heater and shall not contaminate the water supplied.

Metallic materials shall be corrosion-resistant. Metallic materials are considered to satisfy the requirements with respect to corrosion protection:

- if the material used is enamelled (one or more layers) and equipped with cathodic corrosion protection, or
- where types of stainless steel containing a minimum of 16 % chrome are used, or
- where they are assessed as acceptable to the national regulations in force.

Examples for the selection of metallic materials (steel, copper and copper alloys) are given in P.2 and P.3.

6.1.2.3 Enamelling - Physiological safety

The release of lead and cadmium ions or compounds into the water shall not exceed the following limit values:

Lead:

- cold water test: 0,3 mg/(m²·d);
- hot water test: 0,3 mg/(m²·h).

Cadmium:

- cold water test: 0,03 mg/(m²·d);
- hot water test: 0,03 mg/(m²·h).

A double parallel test with special specimen plates is carried out in cold and hot water. The cut edges of the specimen are covered with a coating of a material that does not contain lead or cadmium.

The cold water test shall be carried out using water at a temperature of $(18 \pm 5) ^\circ\text{C}$ and the hot water test using water at a temperature of $(90 \pm 5) ^\circ\text{C}$. Two parallel tests are carried out with special specimen plates. The cold water test is performed in 3 succeeding extractions of 72 h, the hot water test in 4 succeeding tests of 24 h. It is checked that the results obtained from the final extractions (cold and hot) satisfy the requirements of the given limits for lead and cadmium. The concentration is measured at each extraction. Concentrations of the successive extractions shall be not greater than that obtained at the preceding extractions.

6.1.2.4 Non-metallic materials

6.1.2.4.1 Plastic materials

Due to the many different types of plastic in components used in the drinking water sector, many different material properties need to be taken into consideration e.g. longitudinal expansion, joining and fixing techniques, temperature effects, effect of light (UV resistance), ageing, internal pressure, internal and external corrosion (for example as a result of using cleaning products) and also transport and storage conditions.

6.1.2.4.2 Requirements of plastic materials

In the manufacture of water heaters and their components, only those plastic materials that meet mechanical, chemical and thermal demands as well as physiological and hygiene requirements throughout the life of the equipment shall be used in contact with water intended for human consumption. This means they shall be suitable for coming into direct contact with food and not pose any health threat. Special attention shall be paid to microbiological properties of the plastic materials used and to the prevention of substances from leaching out.

Examples for the selection of the plastic materials are given in P.4.

6.1.2.4.3 Other non-metallic operating and auxiliary materials

These materials include rubber, sealant, adhesives and also lubricants on moving parts that come into contact with the water intended for human consumption. These materials shall satisfy the physiological and hygiene requirements in force. Their use is to be limited to what is technically necessary.

Add the following Annex P:

Annex P (informative)

Examples of materials currently used

P.1 General

Materials in compliance with the requirements of the enforced national regulations (e.g. ACS, ATA, KTW, WRC, ...) are deemed to satisfy the requirements of the present amendment.

P.2 Special types of steel

Table P.1 — Special types of steel

Material reference	Abbreviation
1.4571	X6CrNiMoTi 17 12 2
1.4435	X2CrNiMo 18 14 3
1.4539	X2NiCrMoCu 25 20 5
1.4462	X2CrNiMoN 22 5

P.3 Copper and copper alloys

Table P.2 — Copper and copper alloys

Material	Material reference	Abbreviation
Copper	2.0090	SF-Cu
Copper-Nickel alloy	2.0872	CuNi10Fe1Mn
Copper-Zinc alloys	2.0401	CuZn39Pb3
	2.0402	CuZn40Pb2
	2.0340.02	GK-CuZn37Pb
	2.0340.05	GD-CuZn37Pb
	2.0290.01	G-CuZn33Pb
Copper-Tin-Zinc alloys	2.1096.01	G-CuSn5ZnPb
Copper-Tin alloys	2.1020	CuSn6