SLOVENSKI STANDARD
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Posoda za kuhanje - Posoda za domačo uporabo na štedilniku ali kuhalni plošči - 1. del: Splošne zahteve

Cookware - Domestic cookware for use on top of a stove, cooker or hob - Part 1: General requirements

Kochgeschirre - Haushaltskochgeschirre zur Verwendung auf einem Herd oder Kochfeld - Teil 1: Allgemeine Anforderungen

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Articles culinaires - Articles culinaires à usage domestique pour cuisinières et plaques de cuisson - Partie 1 : Prescriptions générales

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ICS:

97.040.60	Kuhinjska posoda, jedilni servisi in jedilni pribor	Cookware, cutlery and flatware

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EUROPEAN STANDARD

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Cookware - Domestic cookware for use on top of a stove, cooker or hob - Part 1: General requirements

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European foreword

This document (prEN 12983-1:2026) has been prepared by Technical Committee CEN/TC 194 "Utensils in contact with food", the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12983-1:2023.

In comparison with the previous edition, the following technical modifications have been made:

The revision of requirements and associated tests for:

— handles;

— coating;

— heat suitability;

— heat distribution. The requirement has been revised to take into consideration specific existing cookware whose design allows fast heating (e.g. Enamelled Steel). Complementary criteria (e.g. maximum time for step P.3.9 with aluminium block 350 °C) are under study.

A list of all parts in a series can be found on the CEN website.

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1 Scope

This document specifies safety and performance requirements for items of cookware for domestic use on top of a cooking range or hob. It is applicable to all cookware regardless of material or method of manufacture. It is also applicable to cookware intended for use both “on top” and “in oven”.

Hob types covered by this document are gas, electric solid plate, electric radiant ring, radiant plate in glass ceramic and induction plate in glass ceramic.

This document is not applicable to pressure cookers, stove top water kettles and coffee makers.

This document does not cover requirements or measurement methods on energy efficiency.

NOTE 1 Requirements for suitability for use in automatic dishwashers are under study by a specialist group and will be added by amendment when completed.

NOTE 2 The requirements for ceramic and glass ceramic are specified in Part 2.

NOTE 3 The additional requirements for cookware for use on induction heating sources are specified in Part 3.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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ISO 10093:2020, *Plastics — Fire tests — Standard ignition sources*

EN 30-1-1:2021+A1:2023, *Domestic cooking appliances burning gas - Part 1-1: Safety - General*

EN ISO 2064:2000, *Metallic and other inorganic coatings - Definitions and conventions concerning the measurement of thickness (ISO 2064:1996)*

EN ISO 2360:2017, *Non-conductive coatings on non-magnetic electrically conductive base metals - Measurement of coating thickness - Amplitude-sensitive eddy-current method (ISO 2360:2017)*

EN ISO 2409:2020, *Paints and varnishes - Cross-cut test (ISO 2409:2020)*

EN ISO 2747:2022, *Vitreous and porcelain enamels - Enamelled cooking utensils - Determination of resistance to thermal shock (ISO 2747:1998)*

EN ISO 4532:2022, *Vitreous and porcelain enamels - Determination of the resistance of enamelled articles to impact - Pistol test (ISO 4532:1991)*

EN ISO 4628-2:2016, *Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering (ISO 4628-2:2016)*

EN 12875-1:2005, *Mechanical dishwashing resistance of utensils - Part 1: Reference test method for domestic articles*

EN ISO 28706-1:2011, *Vitreous and porcelain enamels - Determination of resistance to chemical corrosion - Part 1: Determination of resistance to chemical corrosion by acids at room temperature (ISO 28706-1:2008)*

EN ISO 28706-2:2017, *Vitreous and porcelain enamels - Determination of resistance to chemical corrosion - Part 2: Determination of resistance to chemical corrosion by boiling acids, boiling neutral liquids, alkaline liquids and/or their vapours (ISO 28706-2:2017)*

EN 60350-2:2018, *Household electric cooking appliances - Part 2: Hobs - Methods for measuring performance*

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EN 60350-2:2018/A1:2021, *Household electric cooking appliances - Part 2: Hobs - Methods for measuring performance*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at http://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1
cookware
utensil, in the form of a hollow container, which transfers heat from the heat source to food, and is primarily intended for use in the cooking of food or liquids on the top of a stove, cooker or hob, and/or in an oven

Note 1 to entry: Cookware intended to be used in an oven should also meet the requirements of EN 13834:2020 [1]

3.2
cooking range
appliance having a hob and at least one oven and which may incorporate a grill

[SOURCE: EN 60350-2:2018, 3.1]

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3.3
hob
appliance or part of an appliance which incorporates one or more cooking zones and/or cooking areas including a control unit

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[SOURCE: EN 60350-2:2018, 3.2]

3.4
fixing system
attachment method, or methods, utilized in fastening a handle to the body of an item of cookware or to fix a knob to a lid

3.5
capacity
maximum volume of water which can be held by the article on a level surface

3.6
usable capacity
two thirds of the capacity

Note 1 to entry: The true usable capacity of the cookware varies with the food being cooked. The figure given here is an average value intended for use in test situations only and not as information to the consumer

3.7
handle
projection integral with or affixed to the body of the cookware and intended to facilitate the carrying and holding of the article in normal use

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3.8
knob
handle of lid
projection integral with or affixed to the lid of the cookware to facilitate positioning or removal in normal use

3.9
shallow item
cookware of overall internal depth 1/3 or less of the interior diameter at the rim

3.10
furniture
handles and knobs

3.11
non-stick coating
coating applied to the interior of a cookware to achieve an anti-adherent effect during cooking and facilitate cleaning

3.12
external base diameter
dimension, measured on the external bottom of the cookware, across the maximum circumference of contact when placed on a flat surface

3.13
interior base diameter
diameter, measured on the inside of the cookware, excluding the radius of the body base to the body wall

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3.14
glass
inorganic non-metallic material produced by the complete fusion of raw materials at a high temperature into a homogeneous liquid which is then cooled to a rigid condition essentially without crystallization

3.15
ceramic
inorganic non-metallic material made by firing a mixture of raw materials at high temperature

Note 1 to entry: The firing temperature is high enough to give the necessary strength to the article, which is already shaped but is lower than the temperature which is necessary to achieve complete fusion of the mixture.

3.16
glass ceramic
inorganic, non-metallic material produced by complete fusion of a mixture of raw materials at high temperature into a homogeneous liquid which is then cooled to a rigid material and heat treated to achieve a certain degree of crystallization, mainly sub-microscopic crystallites

Note 1 to entry: Vitro ceramic is also considered as glass ceramic.

3.17
organic coating
kind of polymer coating whose main or primary ingredients are based on compound from organic chemistry

3.18
ceramic coating
inorganic, non-metallic solid and inert film, mainly composed of silica and possibly containing some organic substances

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3.19
hard substrate
main material of the body shape

EXAMPLE Aluminium, cast iron, steel.

3.20
concavity
difference of the height between the external base diameter and the external base centre of the product

4 Materials

Cookware shall be made of materials of a type and purity that, under normal conditions of use, present no toxic hazards nor in any way affect the organoleptic qualities of food prepared in it.

NOTE There are European regulations in force regarding products intended to be used in contact with foodstuffs.

5 General conditions for testing

Unless otherwise specified, the tests shall be carried out at an ambient temperature of (23 ± 5) °C.

When a failure in a test could be caused by the stresses set up by a previous test, the failed test shall be repeated on a new product.

6 Construction

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6.1 General

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6.1.1 Stability

The product shall be stable (i.e. shall not tilt), the base shall be in intended contact with the surface (a slide could be accepted), when placed empty without lid on a (5 ± 0,5)° inclined surface in the least favourable position.

6.1.2 Hygiene

All surfaces intended to come into contact with food shall be easily cleanable under normal circumstances.

6.1.3 Mechanical hazards

All components shall be free from burrs, splinters or sharp edges that could cause injury or discomfort to the user.

6.2 Geometry

6.2.1 Dimensions

The points of measurement of any claimed dimensions shall be made clear to the consumer, e.g. by means of a simple sketch.

6.2.2 Capacity

If a capacity is claimed, the actual capacity shall be equal or greater than the claimed capacity, when measured with an accuracy of 0,05 l.

0,1 % (mass fraction) of domestic washing up liquid detergent shall be added to the water in order to minimize the surface tension.

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6.2.3 Diameters

Any diameter claimed for the base shall be within ±10 mm of the average of two measurements of the actual diameter taken at right angles to one another.

Any other claimed diameter shall be within ±5 mm of the average of two measurements of the actual diameter taken at right angles to one another.

6.2.4 Sizes for non-circular products

Every claimed size shall be within tolerance of ±10 mm.

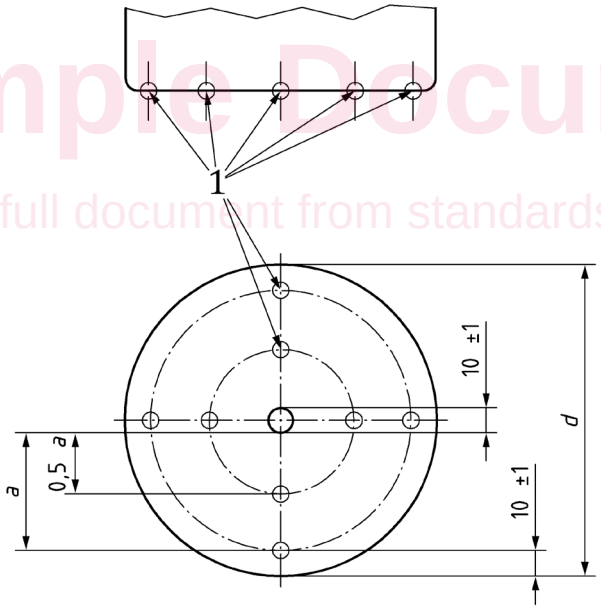
6.2.5 Base thickness

If a thickness is claimed for the base of a product, the average thickness of the base shall be greater than 85 % of the claimed thickness. The average thickness shall be calculated, by taking the average of the 8 points measured as described in Figure 1.

If more than 22 % of the base area is deliberately deformed for aesthetic or functional reasons, either internally or externally, no claim for base thickness shall be made.

Dimensions in millimetres

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Key

1 measuring points

d base diameter

Figure 1 — Measuring points

6.2.6 Base form

The base, when viewed from the beneath, shall not be convex except for products whose intrinsic design features preclude them complying with this requirement, e.g. certain woks.

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7 Furniture

7.1 General

It is not the intention that all these tests shall be passed in sequence. Except where otherwise stated, each test shall stand alone.

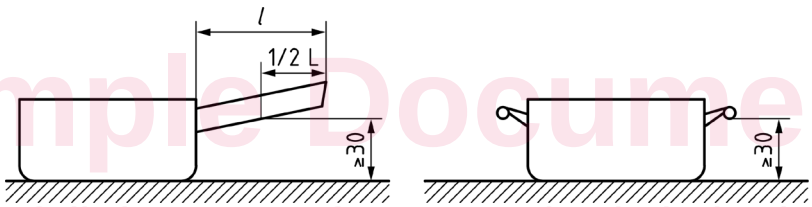
7.2 Selection of handles

All cookware with a capacity greater than 3,75 l or a total weight greater than 5 kg when filled to capacity with water shall be fitted with two handles.

7.3 Handle position with respect to cookware

Handles shall be positioned above the centre of gravity of an item of cookware when filled with water to its capacity. For shallow items, there shall be a minimum clearance of 30 mm between the handle and the horizontal projection of the base of the item of cookware at a point halfway along the handle assembly. In the case of side handles, the measurement is taken at the lowest point where they are held in normal use (see Figure 2).

Dimensions in millimetres



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Figure 2 — Handle position

7.4 Knob/handle of lid design

It shall be possible to use the knob for its normal purposes without coming into contact with any surface whose temperature exceeds the values given in 7.12 for the relevant materials.

7.5 Lid design

The design of the lid shall be such that it shall be possible to remove it from the body using a force equal to the weight of the lid + 2 N in any position at a temperature of (23 ± 5) °C. This test shall be carried out both before and after bringing a quantity of water, equal to the usable capacity, to the boil and allowing it to cool to ambient temperature. The lid shall remain in place throughout the boiling and cooling stages. If the lid is fitted with a locking device, this test shall be carried out with the device disengaged.

NOTE For glass lid thermal shock endurance, see EN 12983-2:2023+A1:2025 [2], Clause 5.

7.6 Resistance to burning

The underside of the handle or any insert or inlay there, consisting of organic material, shall not drip molten material or keep burning when tested according to Annex A. Any burning shall self-extinguish within 15 s of the removal of the flame. Once extinguished the handle material shall not spontaneously re-ignite. Each material shall be tested at its position.

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7.7 Heat resistance

All furniture designed to be attached to the main body of a product shall be free from cracks and blisters after completion of the test described in Annex B for a temperature of (150 ± 5) °C for 1 h. Purely decorative features, e.g. thermoplastic inlays or sleeves, are exempt from this requirement.

7.8 Torque resistance

When tested in accordance with Annex C, the movement of the handle shall be no more than 10° in either direction. There shall be no damage affecting the function caused to the handle, ferrule or fixing system by this test.

7.9 Bending strength

No part of the handle or handle fixing system shall detach or break with a bending force of 100 N when tested as described in Annex D during 30 s.

If the capacity of the product is less than 3 l, the test is performed with a bending force twice the capacity plus the weight of the item with a minimum of 40 N and a maximum of 100 N.

No fracturing nor permanent deformation of 10° or greater of any part of the handle or handle fixing system shall be observed where 10° relates to the original position of the handle, see Figure D.1.

7.10 Fatigue resistance

A handle assembly shall withstand 15 000 cycles, without permanent deformation or permanent loosening of the handle or its fixing system, when tested as described in Annex E. If any loosening of the handle is noticed it is acceptable to retighten as mentioned in the use and care manual. Distortion of less than 5 % of the handle length measured at the end of the handle is ignored unless it affects safety or function.

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7.11 Resistance to pull off handle assembly

When tested as described in Annex M, a handle assembly shall withstand a dynamic impact of 1,5 Nm without any breakage nor reduction in the security of the handle nor the fixing system.

7.12 Thermal hazards

For the following materials, the maximum temperature shall not exceed:

a) Metal: 55 °C;

b) Plastics, silicone: 70 °C;

c) Wood: 89 °C;

d) Ceramic, glass, stone: 66 °C

when tested as described in Annex F.

If the values exceed these limits or the cookware is claimed to be suitable for deep frying, the manufacturer shall indicate in the instructions (see 10.2) that the use of protection is required in order to ensure a safe handling of the cookware.

It shall not be possible to touch, with a spherical probe 14 mm in diameter, any metal part contained within the insulated portion of the furniture which exceeds 55 °C when tested as described in Annex F.

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8 Coatings

8.1 Vitreous enamel and ceramic coating on any substrate

8.1.1 Citric acid test at room temperature

The interior coating shall be tested in accordance with EN ISO 28706-1:2011. For matte and glossy surfaces, the result is considered as successful if the sample is in class AA, A+.

8.1.2 Boiling distilled or demineralized water test

When the interior enamel coat is tested in accordance with EN ISO 28706-2:2017, Clause 14, the maximum acceptable weight loss shall be 1,5 g/m2 for the liquid phase and 4,5 g/m2 for the vapour over a test period of 24 h.

NOTE This test does not apply to ceramic coating.

8.1.3 Thermal shock test

When the coating is tested in accordance with EN ISO 2747:2022, the minimum acceptable failure temperature shall be 280 °C.

8.1.4 Resistance to impact

When the coating is tested in accordance with EN ISO 4532:2022, the coating shall resist a minimum impact of 20 N, showing no damage greater than 2 mm after 24 h.

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8.1.5 Adhesion test for vitreous enamel on aluminium

When tested as described in Annex G, exposure of the base metal shall not exceed 3 mm from the test edge.

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8.2 Hard anodized aluminium

8.2.1 Thickness

The minimum average thickness of an anodized layer shall be 25 µm when measured as specified in EN ISO 2064:2000 and EN ISO 2360:2017.

This check shall be carried out only where the hard anodized coating is not covered by a separate coat of a different material.

8.2.2 Stain resistance

When tested as described in Annex H, there shall be no staining visible on any surface intended to come into contact with food.

8.2.3 Alkali resistance

When tested as described in Annex I, there shall be no loss of the insulating properties of the coating of any surface intended to come into contact with food.

8.2.4 Hardness

Coatings claimed to be hard anodized shall have a hardness greater than 350 HV 0,5 or equivalent.

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