



SLOVENSKI STANDARD

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Nadomešča:

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Posoda za kuhanje - Pekači za uporabo v klasičnih gospodinjskih pečicah

Cookware - Ovenware for use in traditional domestic ovens

Kochutensilien - Ofengeschirre zur Verwendung in Haushalts-Backöfen

Articles culinaires - Articles culinaires à usage domestique conçus pour la cuisson au four traditionnel

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Kuhinjska posoda, jedilni
servisi in jedilni pribor

Cookware, cutlery and
flatware

SIST EN 13834:2020

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EUROPEAN STANDARD
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English Version

**Cookware - Ovenware for use in traditional domestic
ovens**

Articles culinaires - Articles culinaires à usage
domestique pour la cuisson au four traditionnel

Kochgeschirre - Ofengeschirre zur Verwendung in
Haushalts-Backöfen

This European Standard was approved by CEN on 3 August 2020.

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

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EN 13834:2020 (E)**European foreword**

This document (EN 13834:2020) has been prepared by Technical Committee CEN/TC 194 “Utensils in contact with food”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by March 2021, and conflicting national standards shall be withdrawn at the latest by March 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13834:2007+A1:2009.

The major technical changes in this document compared to EN 13834:2007+A1:2009 concern requirements for handle fatigue resistance (7.4 and Annex B).

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

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1 Scope

This document specifies safety and performance requirements for items of ovenware for use in domestic ovens. It is applicable to ovenware regardless of material or method of manufacture.

It is applicable to products intended for use both on top of the stove and in oven.

This document is not applicable to items for single use, throwaway ovenware or ovenware intended for use in a microwave oven only.

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.

EN 1183:1997, *Materials and articles in contact with foodstuffs — Test methods for thermal shock and thermal shock endurance*

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

EN 14916, *Domestic cookware — Graphical symbols (pictograms)*

EN ISO 2064, *Metallic and other inorganic coatings — Definitions and conventions concerning the measurement of thickness (ISO 2064)*

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

EN ISO 2409:2013, *Paints and varnishes — Cross-cut test (ISO 2409:2013)*

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)*

ISO 2747, *Vitreous and porcelain enamels — Enamelled cooking utensils — Determination of resistance to thermal shock*

ISO 4532, *Vitreous and porcelain enamels — Determination of the resistance of enamelled articles to impact — Pistol test*

ISO 13805, *Vitreous and porcelain enamels for aluminium — Determination of the adhesion of enamels on aluminium under the action of electrolytic solution (spall test)*

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3 Terms and definitions

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

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

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

3.1

ovenware

utensil, in the form of a hollow or flat container, the intended use of which is cooking solid or liquid food

Note 1 to entry: Ovenwares include, but are not restricted to, the follow items:

- gratin and roasting dishes used in the preparation and cooking of vegetable and meat dishes;
- ceramic pots used in the preparation and cooking of meats and/or vegetables;
- bakeware used in the preparation and cooking of various types of dough mixtures (bakeware varies in shape and may include removable parts);
- pate mould used in the preparation and cooking of pates.

3.2

fixing system

attachment method, or methods, utilized in fastening a handle to the body of an item of ovenware or to fix a knob to a lid where the handle or knob are not an integral part of the body or lid

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3.3

furniture

handles and knobs which are attached to the body or lid of ovenware using a fixing system (3.2) and intended to facilitate the carrying and handling of the utensil in normal use

3.4

removable furniture

furniture designed to be attached and removed from the body or lid of ovenware without the use of tools

3.5

capacity

volume of water held when the ovenware is filled to the brim while standing on a level surface

3.6

usable capacity

two thirds of the capacity

Note 1 to entry: The true usable capacity of the ovenware 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

coating

deposit and/or coating applied to a substrate to obtain specific performance properties independent of the properties of the substrate

3.8**non-stick coating**

coating applied to the interior of the ovenware claimed to achieve an anti-adherent effect during cooking and to facilitate cleaning

3.9**easy to clean coating**

coating applied to the interior of the ovenware claimed to facilitate cleaning

3.10**vitreous enamel**

inorganic non-metallic material formed from a mixture of mineral compounds, applied to a metallic substrate and fused at high temperature to form a homogeneous coating

3.11**glaze**

substance resulting from the melting or sintering of inorganic constituents and designed to form a surface layer which is fused or is capable of being fused in one or more coats and the firing temperature of which is higher than 500 °C

3.12**organic coating**

material formed from a mixture of resins and polymers, applied to a metallic substrate, cured at low temperatures to form a homogeneous coating

3.13**tinuing or tin plating**

deposition of a thin coating of tin onto a steel substrate to ensure protection against corrosion

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 crystallisation/crystallise

3.15**glass-ceramic**

inorganic, non-metallic material produced by the complete fusion of raw materials at high temperatures into a homogeneous liquid which is then cooled to a rigid material and heat treated to achieve mainly sub-microscopic small crystallites

3.16**ceramic**

inorganic, non-metallic material produced 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 utensil, which is already shaped, but lower than the temperature which is necessary to achieve complete fusion of the mixture.

3.17**popping**

distinctive sound made by the application of a load to the apparently flat base of an item of ovenware due to the sudden transformation of the base from convex to concave

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3.18

flexible bakeware

utensil, in the form of a hollow or flat container, intended for use in the cooking of food and deformable in any point by manual pressure

4 Materials

Ovenware 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.

5 General conditions for testing

Unless otherwise specified, all measurements shall be carried out at ambient temperature of $(23 \pm 5) ^\circ\text{C}$ with unused ovenware.

6 Construction

6.1 General

6.1.1 Introduction

Requirements 6.1.2, 6.1.3, 6.1.4, 6.1.5, 6.1.6 and 6.1.7 may be verified on the same ovenware.

6.1.2 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° inclined surface in the least favourable position.

6.1.3 Hygiene

All surfaces intended to come into contact with food shall be easily cleanable under normal circumstances. When a dishwasher is used for cleaning, requirement of EN 12875-1:2005 shall be fulfilled.

6.1.4 Mechanical hazards

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

6.1.5 Handle position with respect to ovenware

Handles shall be positioned above the centre of gravity of an item of ovenware when filled with sand to its capacity.

6.1.6 Lid design

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 ambient temperature. This test shall be carried out both before and after exposing the product, filled to its usable capacity with water, to a temperature $20 ^\circ\text{C}$ above the manufacturer's maximum recommended temperature for 1 h and allowing cooling in ambient combinations for 10 min. This test shall also be carried out when the item has cooled to ambient temperature. Where no maximum temperature is recommended, the temperature used shall be $250 ^\circ\text{C}$.

The lid shall remain in place throughout the heating and cooling stages. If the lid is fitted with a locking device, this test shall be carried out with the device disengaged.

6.1.7 Lid knob design

It shall be possible to use the knob for its normal purposes while using an oven glove or cloth. In addition, the knob shall remain firmly attached to the lid after exposing it to a temperature 20 °C above the manufacturer's maximum recommended temperature, or 250 °C where no recommendation is given, for 1 h.

6.1.8 Thermal shock resistance of brittle materials

All ceramic, glass-ceramic and glass ovenware and their lids shall be tested in accordance with Method B of EN 1183:1997, 6.2. The test shall be carried out on 3 samples at the temperature difference ΔT of 180 °C.

Samples which do chip, crack, craze or break are considered as having failed the test.

If the 3 samples pass the test, no additional test is needed. If one fails, 7 additional samples shall be tested with Δt_{50} according to EN 1183:1997.

6.1.9 Heat resistance

After testing in accordance with Annex A at a temperature of 20 °C above the manufacturer's recommended maximum temperature, or 250 °C where no maximum temperature is given, for 1 h, the ovenware shall show no damage.

6.1.10 Resistance to leakage

The design of ovenware, including those with folded seams and loose bottoms, shall be such that it does not leak when prepared according to the manufacturer's instructions and filled with any preparation which could be expected to be cooked in it.

6.2 Geometry

6.2.1 General

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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 not be less than the claimed capacity.

6.2.3 Dimensions

Any claimed dimension shall be within ± 5 mm of the average of two measurements of the actual dimension.

NOTE Ceramic ovenware is exempted from this requirement due to the inherent size variations caused by firing during its manufacture.

7 Furniture

7.1 General

The requirements of this clause are applicable only to equipment which is attached to the ovenware by means of a fixing system.

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

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7.2 Materials

No specific requirements for materials or combinations of materials for the manufacture of ovenware furniture are given in this document but any material used shall comply with the requirements of the appropriate tests.

7.3 Heat resistance

All furniture designed to be attached to the main body of a product and the lid knob shall show no damage after completion of the test described in Annex A for 4 cycles of heating it to a temperature 20 °C higher than the recommended maximum temperature, or 250 °C where no recommendation is made, for 1 h, and allowing it to cool to ambient temperature.

7.4 Fatigue resistance

A handle assembly shall withstand 15 000 cycles, without permanent distortion or permanent loosening of the handle or its fixing system, when tested as described in Annex B. 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.

8 Coatings

8.1 General

Coatings can be:

- decorative,
- non stick,
- protective, or
- energy related.

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8.2 Non-stick coatings

8.2.1 Cross-cut adhesion test

There shall be no removal of the coating greater than classification 2 when tested in accordance with EN ISO 2409 for hard substrates, with the following modifications:

- a) precondition the test piece by immersing it in continuously boiling water for 15 min, allowing it to cool to ambient temperature and wiping it dry;
- b) repeat EN ISO 2409:2013, Annex A a further 3 times applying the tape at 90° to the previous application each time.

8.2.2 Non-stick performance tests

8.2.2.1 When tested in accordance with Annex C for 5 cycles, any item of bakeware with a non-stick coating shall permit the test food to be fully released and the surface to be wiped clean.

8.2.2.2 When roasting and gratin dishes are tested in accordance with Annex D for 5 cycles, the test food shall not adhere to the surface and it shall be wiped clean.

NOTE The surface is deemed to be clean if unaided visual examination made subsequent to wiping reveals no trace of solid material.