SLOVENSKI STANDARD
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Nadomešča:
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Kadi za prhanje za domačo uporabo

Shower trays for domestic purposes

Duschwannen für den Hausgebrauch

Receveurs de douche à usage domestique

Ta slovenski standard je istoveten z: EN 14527:2016

ICS:

91.140.70	Sanitarne naprave	Sanitary installations

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EUROPEAN STANDARD

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English Version

Shower trays for domestic purposes

Receveurs de douche à usage domestique

Duschwannen für den Hausgebrauch

This European Standard was approved by CEN on 30 April 2016.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 14527:2016) has been prepared by Technical Committee CEN/TC 163 “Sanitary 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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by March 2018.

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 14527:2006+A1:2010.

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 Regulation (EU) No 305/2011 for construction products (CPR).

For relationship with Regulation (EU) No 305/2011 see informative Annex ZA which is an integral part of this European Standard.

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

1 Scope

This European Standard specifies requirements, test methods and procedures for evaluation of conformity for shower trays used for domestic purposes which ensure that the product, when installed, used and maintained in accordance with the manufacturer's instructions, will satisfy cleanability and durability when used for personal hygiene.

This standard is applicable to all sizes and shapes of shower trays.

This standard does not cover shower trays for use with medical provisions.

NOTE 1 For the purpose of this standard the term “domestic purposes” includes use in hotels, accommodation for students, hospitals and similar buildings.

NOTE 2 Annex A lists characteristics of materials commonly used for manufacturing shower trays.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 251, *Shower trays - Connecting dimensions*

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 28706-2:2011, *Vitreous and porcelain enamels - Determination of resistance to chemical corrosion - Part 2: Determination of resistance to chemical corrosion by boiling acids, boiling neutral liquids and/or their vapours (ISO 28706-2:2008)*

EN ISO 28706-3:2011, *Vitreous and porcelain enamels - Determination of resistance to chemical corrosion - Part 3: Determination of resistance to chemical corrosion by alkaline liquids using a hexagonal vessel (ISO 28706-3:2008)*

3 Terms and definitions

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

3.1
shower tray
sanitary appliance that collects the water from washing of the human body under a shower and directs it to a waste outlet

3.2
cleanability
characteristics which allow the surface intended to come into contact with water to be non-absorbent and readily kept visually free from dirt and/or stains when subject to a maintenance regime which may include, when appropriate, specific instructions for use and care specified by the manufacturer

3.3
durability
attributes of materials and their surfaces intended to come into contact with water, which allow the anticipated working life of the product

4 Classification

Class 1: Products complying with the requirements of Clause 5.

Class 2: Products complying with the requirements of Clause 6.

5 Requirements for class 1 products

5.1 General

The manufacturer shall provide instructions with each shower tray covering installation and care.

NOTE Annex B gives advice which manufacturers can include in their instructions.

5.2 Cleanability

5.2.1 Appearance of surface

When a shower tray is inspected under strong and oblique illumination, the surfaces intended to come into contact with water shall be visibly smooth, non-absorbent and free from inaccessible corners that would impair cleanability.

NOTE Surfaces with cracks, chips, crazing and other similar defects are not considered to be smooth.

5.2.2 Drainage of water

Shower trays shall have at least one waste outlet hole. The dimensions of the waste outlet hole shall comply with the requirements of EN 251. Other dimensions are permissible, if the manufacturer provides or recommends a suitable waste fitting.

All water shall empty from the shower tray unless prevented by surface tension.

5.3 Durability

5.3.1 General

Conformance with the requirements of 5.3.2 to 5.3.4 give an assurance of durability.

5.3.2 Stability of bottom

When tested in accordance with 8.1, there shall be no permanent distortion or other defects, e.g. cracks, such that the requirements of 5.2.2 are not satisfied.

5.3.3 Resistance to chemicals and staining agents

5.3.3.1 General

When shower trays, other than those made from the materials specified in 5.3.3.2, are tested in accordance with 8.2, the surface finish shall be unaffected by the chemicals and staining agents specified in Table 1 except for superficial surface changes which are removable with water or with water and the specified abrasive agent.

Experience has shown that shower trays made of glazed ceramics comply with these requirements.

Table 1 — Chemicals and staining agents

Family	Product
Acids	Acetic acid (CH_3COOH), 10 % V/V
Alkalines	Sodium hydroxide (NaOH), 5 % m/m
Alcohols	Ethanol (C_2H_5OH), 70 % V/V
Bleaches	Sodium hypochlorite (NaOCl), 5 % active chlorine (CI_2) [a]
Staining agents	Methylene blue, 1 % m/m
[a] The above specified bleach may be replaced by sodium percarbonate ($2Na_2CO_3 \cdot 3H_2O_2$) prepared as follows: Dissolve 1 g of a commercial available powdery bleach based on sodium percarbonate containing 15 % to 30 % of the active component in 100 ml de-ionized water at room temperature.	

5.3.3.2 Particular requirements for shower trays made of enamelled steel and enamelled cast iron

Shower trays made from enamelled steel and enamelled cast iron shall comply with the requirements given in Table 2.

Table 2 — Requirements for shower trays made of enamelled steel and enamelled cast iron

Requirement	Parameter	Test method
Resistance to boiling water	< 10 g/m²	EN ISO 28706-2:2011, Clause 13
Resistance to cold citric acid	Class 2[a]	EN ISO 28706-1:2011, Clause 9
Resistance to boiling citric acid	< 5 g/m²	EN ISO 28706-2:2011, Clause 10
Resistance to cold sulphuric acid	Class 2[a]	EN ISO 28706-1:2011, Clause 10
Resistance to alkali solutions	< 8 g/m²	Testing in accordance with EN ISO 28706-2:2011, Clause 14 Test solution in accordance with EN ISO 28706-3:2011, Clause 9 Duration of test: 2,5 h
[a] Class 2 refers to EN ISO 28706-1		

5.3.4 Resistance to temperature changes

When tested in accordance with 8.3, all shower trays shall show no evidence of distortion or other defects, e.g. crazing, which will impair their cleanability.

Experience has shown that shower trays manufactured from the stainless steel grades listed in Annex A, enamelled steel, enamelled cast iron and glazed ceramics comply with this requirement.

6 Requirements for class 2 products

6.1 General

The manufacturer shall provide instructions with each shower tray covering installation and care.

NOTE Annex B gives advice which manufacturers can include in their instructions.

6.2 Cleanability

6.2.1 Appearance of surface

When a shower tray is inspected under strong and oblique illumination, the surfaces intended to come into contact with water shall be visibly smooth, non-absorbent and free from inaccessible corners that would impair the cleanability.

NOTE Surfaces with cracks, chips, crazing and other similar defects are not considered to be smooth.

6.2.2 Drainage of water

Shower trays shall have at least one waste outlet hole. The dimensions of the waste outlet hole shall comply with the requirements of EN 251. Other dimensions are permissible, if the manufacturer provides or recommends a suitable waste fitting.

All water shall empty from the shower tray unless prevented by surface tension.

6.3 Durability

6.3.1 General

Shower trays shall be readily cleanable for their anticipated working life when normal cleaning and maintenance is carried out.

6.3.2 Materials

Experience has shown that shower trays made from plastics materials, enamelled steel, enamelled cast iron, stainless steel, glazed ceramics or glass and their surfaces intended to come into contact with water have the properties described in 6.3.1.

7 Dangerous substances

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction website on EUROPA accessed through: *http:// http://ec.europa.eu/growth/tools-databases/cp-ds/*.

8 Test methods

8.1 Stability of the bottom of the shower tray

8.1.1 Test apparatus

8.1.1.1 An adequate number of reinforced cloth bags, each with dimensions of approximately 500 mm x 200 mm filled with lead shot, iron shot or sand of a mass of 25 $^{+0,5}_{0}$ kg or 12,5 $^{+0,5}_{0}$ kg.

8.1.2 Determination of the load

The load to be applied for the test shall comprise the adequate number of cloth bags (see 8.1.1) equating to 100 kg.

8.1.3 Procedure

— Install the shower tray in accordance with the manufacturer's installation instructions.

— Position the adequate number of bags in the geometric centre of shower tray as shown in Figure 1.

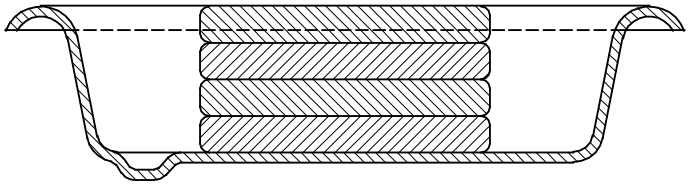

Figure 1 — Load application

— Leave the load for 10 $^{+1}_{0}$ min.

— On completion of the tests remove all the bags.

— After 10 $^{+1}_{0}$ min verify that the shower tray complies with 5.3.2 by pouring copious amounts of water coloured in contrast with that of the shower tray around all the inner surface of the sides of the showering area.

8.2 Chemical resistance

8.2.1 Principle

The test is intended to give an indication of the effect of commonly used household chemicals, staining agents and cleansing agents.

8.2.2 Test apparatus and chemicals

8.2.2.1 Chemicals and stains:

A list of chemicals and stains to be used is specified in Table 1. Each chemical solution shall be prepared immediately before use with de-ionized water, and it shall be applied at a temperature (23 ± 5) °C.

8.2.2.2 Borosilicate watch glasses: 40 mm nominal diameter.

8.2.2.3 Pipettes.

8.2.2.4 Cleaning device:

A typical cleaning device is shown in Figure 2. It consists of a disc of 75 mm diameter, faced with synthetic flexible open cell foam 15 mm in thickness. The device is driven by means of a square axle which fits loosely into the device. Any device having a mass of (1 000 ± 50) g can be used.