



SLOVENSKI STANDARD

SIST EN 14527:2006+A1:2010

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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 14527:2006+A1:2010

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ICS:

91.140.70	Sanitarne naprave	Sanitary installations
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EUROPEAN STANDARD
NORME EUROPÉENNE
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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 14 December 2005 and includes Amendment 1 approved by CEN on 19 June 2010.

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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 CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 14527:2006+A1:2010) 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of an identical text or by endorsement, at the latest by January 2011, and conflicting national standards shall be withdrawn at the latest by April 2012.

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

This document includes Amendment 1, approved by CEN on 2010-06-19.

This document supersedes EN 14527:2006.

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** and **A1**.

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 EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EN 14527:2006+A1:2010 (E)

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 **[A1]** durability **[A1]** 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 referenced documents are indispensable for the application 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 251, *Shower trays — Connecting dimensions*

EN 14483-1, *Vitreous and porcelain enamels — Determination of resistance to chemical corrosion — Part 1: Determination of resistance to chemical corrosion by acids at room temperature*

ISO 2722, *Vitreous and porcelain enamels — Determination of resistance to citric acid at room temperature*

ISO 2742, *Vitreous and porcelain enamels — Determination of resistance to boiling citric acid*

ISO 2744, *Vitreous and porcelain enamels — Determination of resistance to boiling water and water vapour*

ISO 4533, *Vitreous and porcelain enamels — Determination of resistance to hot detergent solutions used for washing textiles*

3 Terms and definitions

For the purposes of this European Standard, 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

[A1]

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 A_1

A_1

4 Classification

Class 1: Products complying with the requirements of Clause 5

Class 2: Products complying with the requirements of Clause 6 A_1

A_1

5 Requirements for class 1 products A_1 **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 A_1 Durability A_1 **5.3.1 General**

Conformance with the requirements of A_1 5.3.2 to 5.3.4 A_1 give an assurance of A_1 durability A_1 .

5.3.2 Stability of bottom

When tested in accordance with A_1 8.1 A_1 , there shall be no permanent distortion or other defects, e.g. cracks, such that the requirements of A_1 5.2.2 A_1 are not satisfied.

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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 [A1] 5.3.3.2 [A1], are tested in accordance with [A1] 8.2 [A1], 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.

Table 1 — Chemicals and staining agents

Family	Product
Acids	Acetic acid (CH ₃ COOH), 10 % V/V
Alkalines	Sodium hydroxide (NaOH), 5 % m/m
Alcohols	Ethanol (C ₂ H ₅ OH), 70 % V/V
Bleaches	Sodium hypochlorite (NaOCl), 5 % active chlorine (Cl ₂) ^a
Staining agents	Methylene blue, 1 % m/m

^a The above specified bleach may be replaced by sodium percarbonate (2Na₂CO₃ · 3H₂O₂) 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-ionised 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.

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

Requirement	Parameter	Test method
Resistance to boiling water	< 10 g/m ²	ISO 2744
Resistance to cold citric acid	Class 2	ISO 2722
Resistance to boiling citric acid	< 5 g/m ²	ISO 2742
Resistance to cold sulphuric acid	Class 2	EN 14483-1
Resistance to alkali solutions	< 8 g/m ²	Test apparatus according to ISO 2742 Test solution according to ISO 4533 Duration of test: 2,5 h

5.3.4 Resistance to temperature changes

When tested in accordance with [A1] 8.3 [A1], 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.

[A1] deleted text [A1]



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.

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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

NOTE See Annex ZA, ZA.1 and ZA.3.

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8 Test methods

8.1 Stability of the bottom of the shower tray

8.1.1 Test apparatus

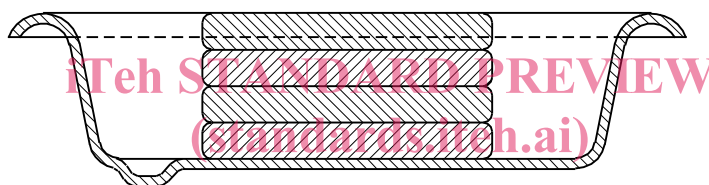
- an adequate number of reinforced cloth bags each with dimensions of approximately 500 mm x 200 mm filled with lead shot, iron shot or sand of a mass of $25^{+0,5}_0$ kg or $12,5^{+0,5}_0$ kg.

8.1.2 Determination of the load

The load to be applied for the test shall comprise the adequate number of cloth bags (see [A1](#) 8.1.1 [A1](#)) 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.



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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 [A1](#) 5.3.2 [A1](#) 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

- a) chemicals and stains

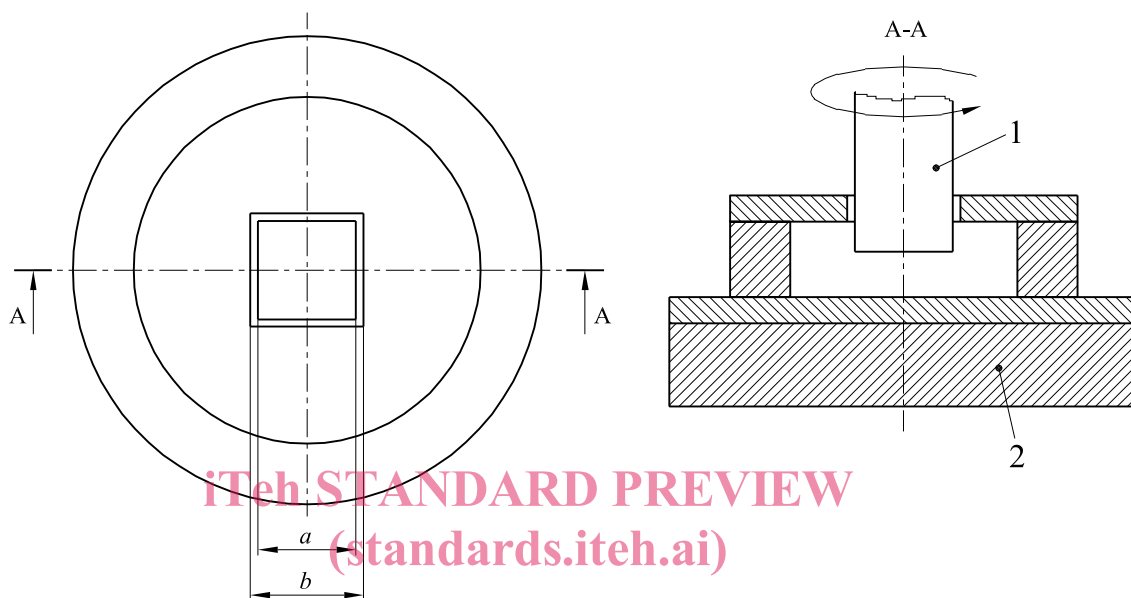
A list of chemicals and stains to be used is specified in Table 1. Each chemical solution shall be prepared immediately before use with de-ionised water, and it shall be applied at a temperature (23 ± 5) °C.

- b) borosilicate watch glasses: 40 mm nominal diameter;

- c) pipettes;
- d) 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 (1000 ± 50) g can be used.

- e) Abrasive comprising 12 h-alumina (suspension of aluminium oxide in water)¹⁾.



Key

- 1 square axle ($a = b = 1$ mm)
- 2 disc faced with foam

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Figure 2 — Cleaning device

8.2.3 Test specimens

Carry out the tests on the bottom, and on a flat part of the wall of the shower tray or on test specimens cut from these areas.

8.2.4 Procedure

- Select an area to be tested.
- Use each test area only once for each application. Clean the test area thoroughly with hot soapy water, rinse and wipe dry with a clean dry cloth.
- At each of the test areas deposit a drop of the test solution. Cover the drop with a watch glass concave face downwards. The drop size shall be such that it is completely covered by the watch glass. Leave for (120 ± 5) min with the test area protected from sunlight.

¹⁾ A suitable product is available from MERCK Eurolab-Prolabo, 54 rue Roger Salengro, 94126 Fontenay sous Bois CEDEX, France, as DURMAXTM under product description N° 20993. This information is given for the convenience of users of this standard and does not constitute an endorsement by CEN of this product.