



SLOVENSKI STANDARD
SIST EN 13904:2004
01-maj-2004

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Low resistance shower outlets for sanitary tapware

Brausen für Sanitärarmaturen mit geringem Durchflusswiderstand

Douches basse pression pour robinetterie sanitaire

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Ta slovenski standard je istoveten z: EN 13904:2003

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EUROPEAN STANDARD

EN 13904

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2003

ICS 91.140.70

English version

Low resistance shower outlets for sanitary tapware

Douches basse pression pour robinetterie sanitaire

Brausen für Sanitärarmaturen mit geringem
Durchflusswiderstand

This European Standard was approved by CEN on 1 August 2003.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

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

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13904:2003) has been prepared by Technical Committee CEN/TC 164 "Water supply", 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of an identical text or by endorsement, at the latest by March 2004, and conflicting national standards shall be withdrawn at the latest by March 2004.

Annex A is informative.

This document includes a Bibliography.

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

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Introduction

In respect of potential adverse effects on the quality of water intended for human consumption caused by the product covered by this standard.

- 1) This standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA.
- 2) It should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

This European Standard specifies requirements for 'low resistance' shower outlets suitable for use in low pressure water supply systems as described in informative annex A.

Requirements for shower outlets suitable for use in high pressure water supply systems are specified in EN 1112.

1 Scope

This European Standard specifies:

- the dimensional, leaktightness, mechanical and hydraulic characteristics with which shower outlets shall comply;
- the procedures for testing these characteristics.

It applies to shower heads and hand showers of any material used for ablutionary purposes and intended for equipping and supplementing sanitary tapware for baths and showers. They should only be connected downstream of the obturator of the tapware.

Details of pressures and temperatures are given in Table 1.

Table 1 — Conditions of use

	Limits of use	Recommended limits for correct operations
Dynamic pressure	$0,01 \leq P \leq 0$ MPa ($0,1 \leq P \leq 0$ bar)	$0,02 \leq P \leq 0,1$ MPa ($0,2 \leq P \leq 1,0$ bar)
Temperature	$T \leq 70$ °C	$T \leq 42$ °C

Integral and remote spray attachments incorporated in tapware (e.g. sink and basin mixer taps) are not covered by this standard.

Fittings complying with this Standard can also be used with inlet supply pressures in the range (0,1 to 0,2) MPa (1,0 to 2,0) bar in installations not subject to acoustic requirements.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 248, *Sanitary tapware - General specification for electrodeposited coatings of Ni-Cr.*

EN 13905, *Low resistance shower hoses for sanitary tapware.*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation.*

3 Terms and definitions

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

3.1

shower outlet

device for ablutionary purposes which allows water to be emitted in the form of jets or water droplets

3.2

spray plates

device with orifices through which water passes and forms a spray of water with separate, definable jets or water droplets

A spray forming mechanism is a device which generates a spray by other means.

3.3

shower arm

component which supports a shower head and connects it to the water supply

4 Classification

a) Shower handsets

Shower handsets are moveable hand held shower outlets which are connected to the sanitary tapware via a shower hose, complying with EN 13905 and can be hung directly on the tapware or on the wall with the aid of an appropriate support.

b) Shower heads and body showers

Shower heads are fixed overhead shower outlets which direct water onto the user from above.

Body showers are shower outlets fixed to the vertical wall and direct water laterally onto the user.

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5 Designation

Shower outlets covered by this Standard are designated by:

- their type (see clause 4);
- their connecting thread dimension;
- their flow rate class (see 11.2.4);
- reference to this standard: EN 13904.

Examples

- Shower handset, flow rate class *H*. EN 13904.

NOTE For shower handsets the connecting thread size need not be given, as it is always *G* 1/2.

- Shower head *G* 1/2 flow rate class *E*. EN 13904.

6 Marking

Shower outlets complying with this standard shall be marked permanently and legibly with the manufacturer's mark or the supplier's mark.

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The designation shall appear on the packaging.

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7 Materials

7.1 Chemical and hygienic requirements

All materials coming into contact with water intended for human consumption shall not present any health risk up to a temperature of 90 °C. They shall not cause any deterioration to the water intended for human consumption in terms of quality, appearance, smell or taste.

Within the recommended limit for correct operation given in clause 1 of this standard the materials shall not undergo any change which would impair the performance of the showers.

Parts subjected to pressure shall withstand the pressures given in Table 1. Materials without adequate resistance to corrosion shall be protected against corrosion.

7.2 Exposed surface condition and quality of coating

Visible chromium plated surfaces and Ni-Cr coatings shall comply with the requirements of EN 248.

8 Dimensional characteristics

8.1 General

General comment on design :

The design and construction of components without defined dimensions permits various design solutions to be adopted by the manufacturer.

Permitted deviations from the defined dimensions are given in 8.3

8.2 Connecting dimensions

The connecting dimensions of shower outlets are specified in Table 2.

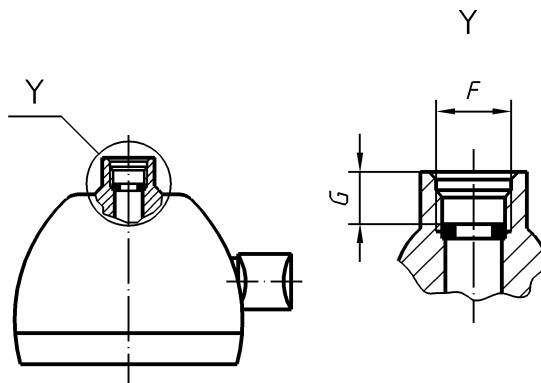


Figure 1 — Shower head

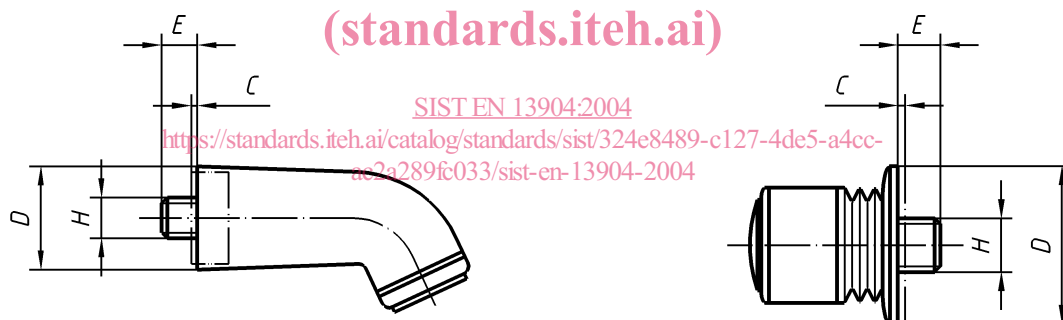


Figure 2 — Shower arm or shower head

Figure 3 — Shower head and body showers

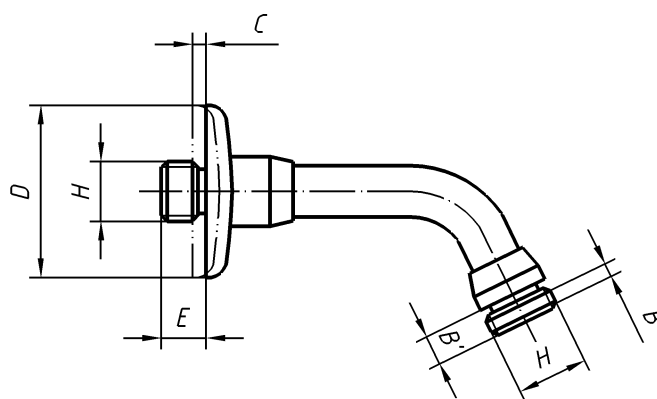


Figure 4 — Shower arm

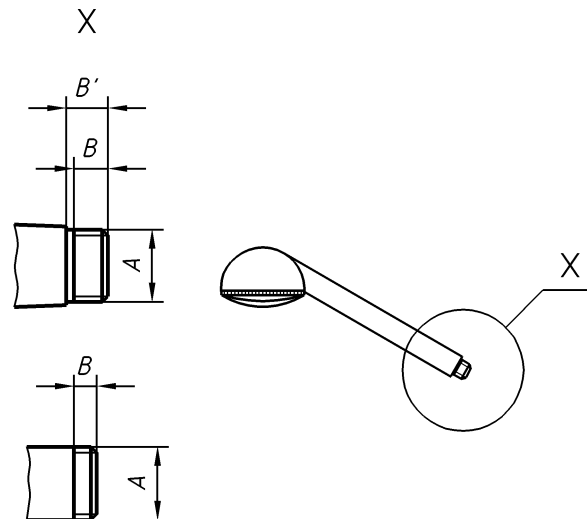


Figure 5 — Handset

Table 2 — Connecting dimensions

Dimension	Values (mm)	Comments
A	$G \frac{1}{2} B$	ISO 228-1
B	$\geq 7,5$	
B'	$\geq 9,5$	
C	≥ 5	Adjustability of the escutcheon
D	≥ 50	
E	≥ 15	Distance between end of thread and face of escutcheon. It is not the length of the thread.
F	$G \frac{1}{2}$ or $G \frac{3}{4}$	ISO 228-1
G	$8,5 \begin{smallmatrix} 0 \\ -1 \end{smallmatrix}$	Functional dimension on seal depth
H	$G \frac{1}{2} B$ or $G \frac{3}{4} B$	ISO 228-1
a	3,6	

8.3 Special cases

Shower outlets intended for special applications e.g., when dimensional interchangeability is not a requirement, can incorporate dimensional deviations provided :

- connection to the installation is guaranteed ;
- threaded connections are in compliance with ISO standards ;
- all other requirements of this standard are satisfied ;
- the manufacturers literature, including the installation instructions supplied with the shower outlet indicates clearly that the shower outlet is a special case.

9 Leaktightness characteristics

9.1 General

The test described is a type test (laboratory test) and not a quality control test carried out during manufacture.

9.2 Test method

9.2.1 Principle

The test is based on the principle of checking the leaktightness of the shower outlet with positive internal water pressure.

9.2.2 Apparatus

A test circuit capable of providing and maintaining the pressure and flow rate required for the duration of the test.

9.2.3 Procedure

Connect the shower outlet as supplied to the test circuit. With water flowing at a temperature ≤ 30 °C, apply the test pressure of $(0,2 \pm 0,01)$ MPa ($2 \pm 0,1$) bar and maintain for 5 min. In the case of multifunction and vari-function shower outlets the test shall be carried out for each function.

9.2.4 Requirements

For the duration of the test there shall be no leakage between the connecting point and body or at the connection between the spray plate and body.

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10 Mechanical characteristics

10.1 General

The tests described are type tests (laboratory tests) and not quality control tests carried out during manufacture.

10.2 Mechanical strength

10.2.1 Test method

This clause defines a test method to establish the mechanical strength of the shower handset.

10.2.2 Principle

A force F is applied to the shower handset as shown in Figure 6 or 7.

10.2.3 Apparatus

A device into which the shower handset connecting thread is screwed and means for applying a force to the shower handset.