



SLOVENSKI STANDARD
SIST EN 13905:2004

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Low resistance shower hoses for sanitary tapware

Brauseschläuche für Sanitärarmaturen mit geringem Durchflusswiderstand

Flexibles de douches basse pression pour robinetterie sanitaire

Ta slovenski standard je istoveten z: EN 13905:2003

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EUROPEAN STANDARD

EN 13905

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2003

ICS 91.140.70

English version

Low resistance shower hoses for sanitary tapware

Flexibles de douches basse pression pour robinetterie
sanitaireBrauseschläuche für Sanitärarmaturen mit geringem
Durchflusswiderstand

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

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 13905:2003) 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of an identical text or by endorsement, at the latest by March 2004, and conflicting national standards shall be withdrawn at the latest by March 2004.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 hoses suitable for use in low pressure water supply systems as described in informative annex A.

Requirements for shower hoses suitable for use in high pressure water supply systems are specified in EN 1113.

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1 Scope

This European Standard specifies :

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

It applies to shower hoses of any material used for ablutionary purposes and intended for connecting shower handsets to the sanitary tapware of baths and showers. They should only be connected downstream of the obturator of the tapware.

Details of pressure and temperature are given in Table 1.

Table 1 — Conditions of use

	Limits of use	Recommended limits for correct operation
Dynamic pressure	$0,01 \leq P \leq 0,2 \text{ MPa}$ $(0,1 \leq P \leq 2 \text{ bar})$	$0,02 \leq P \leq 0,1 \text{ MPa}$ $(0,2 \leq P \leq 1,0 \text{ bar})$
Temperature	$T \leq 70 \text{ }^\circ\text{C}$	$T \leq 42 \text{ }^\circ\text{C}$

Hoses which are an integral part of sanitary tapware (e.g. sink mixers) or hoses intended to connect sanitary tapware to the water supplies are not covered by this standard.

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.*

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 hose

flexible supply pipe which connects sanitary tapware to a shower handset

EN 13905:2003(E)**4 Designation**

Hoses complying with this standard, are designated by :

- the connecting thread dimensions G 1/2 × G 1/2 or G 1/2 × G 3/4 ;
- the length ;
- the material of the external sheath (plastic, metal) ;
- the type of nuts and if conical the dimension C ;
- reference to this standard EN 13905 ;
- flow rate Class (see 8.2.4).

EXAMPLE Shower hose G 1/2, cone 26 × G 3/4, length 1,5 m, metal sheath, EN 13905, Class H.

5 Marking

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

The designation shall appear on the packaging.

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6 Materials

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6.1 Chemical and hygiene requirements

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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 limits for correct operation given in clause 1 of this standard the materials shall not undergo any change which would impair the performance of the hose. Parts subjected to pressure shall withstand the pressures given in Table 1. Materials without adequate resistance to corrosion shall be protected against corrosion.

6.2 Exposed surface condition and quality of coating

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

7 Dimensional characteristics**7.1 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 7.3.

7.2 Connecting dimensions

The connecting dimensions of shower hoses are specified in Table 2 and Figures 1 to 3.

Table 2 — Connecting dimensions

Dimensions	Values in mm	Comments
A	G 1/2 or G 3/4	Connecting thread (tap side) ISO 228-1
B	G 1/2	Connecting thread (shower side) ISO 228-1
C	$\varnothing 23 \begin{smallmatrix} +0,5 \\ -0,1 \end{smallmatrix}$ or $\varnothing 26 \begin{smallmatrix} +0,5 \\ -0,1 \end{smallmatrix}$	Major diameter of conical nut (if provided)
G	$8,5 \begin{smallmatrix} 0 \\ -1 \end{smallmatrix}$	Functional dimension on seal depth
I	$1,5 \begin{smallmatrix} +0,5 \\ 0 \end{smallmatrix}$	Thread counterbore
K	30 min.	Total length of conical nut
α	$(3 \begin{smallmatrix} 0 \\ -1 \end{smallmatrix})^\circ$	Cone angle (if provided)
L	SIST EN 1250 min.4	Total length of hose

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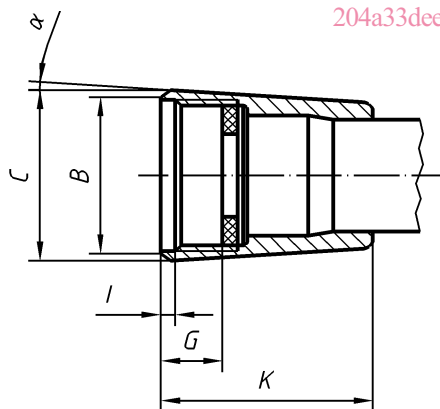


Figure 1 — Conical nut

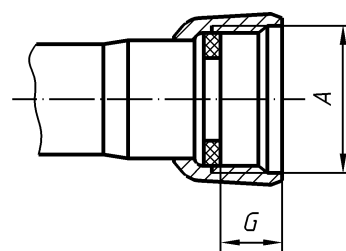


Figure 2 — Nut (shape unspecified)

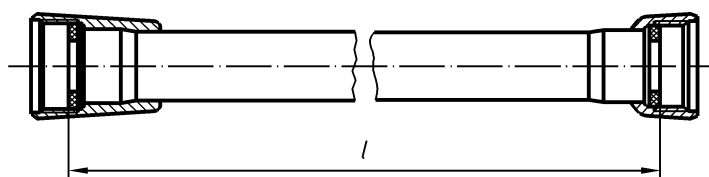


Figure 3 — Hose length

EN 13905:2003(E)**7.3 Special cases**

Shower hoses 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 manufacturer's literature, including the installation instructions supplied with the shower hose, indicates clearly that the shower hose is a special case.

8 Hydraulic characteristics**8.1 General**

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

8.2 Test method**8.2.1 Principle**

The principle consists of a method for measuring the flow rate through the shower hose using cold water ($T \leq 30 \text{ }^\circ\text{C}$) in order to determine the flow rate class of the hose. (See 8.2.4).

8.2.2 Apparatus

The test apparatus shown in Figure 4, comprises [SIST EN 13905:2004](https://standards.iteh.ai/catalog/standards/sist/35d525bc-93e0-49c4-89f3-204a33dec89d/sist-en-13905-2004)

- a supply circuit
- a test circuit

a) Supply circuit (9)

The supply circuit comprises :

- 1) means for supplying and maintaining a dynamic pressure of $(0,01 \pm 0,0005) \text{ MPa}$ ($0,1 \pm 0,005 \text{ bar}$) ;
- 2) a device for measuring the flow rate with an accuracy of 2 % of the test value.

b) Test circuit (10)

The test circuit comprises :

- 3) a DN15 regulating valve ;
- 4) a straight DN15 pipe ;
- 5) a pressure take off tee (See Figure 5) ;
- 6) a manometer to measure 0,1 bar with an accuracy of $\pm 1 \%$;
- 7) a support to maintain the hose in a straight and horizontal position;
- 8) datum.

The supply and test circuits shall be capable of delivering a flow rate which will produce a water column in the manometer at least equal to 0,12 bar dynamic pressure when the hose under test is installed.

8.2.3 Procedure

- connect the G 1/2 size nut of the shower hose to the pressure take off tee, supporting the hose in a horizontal position.
- apply a dynamic pressure of $(0,01 \pm 0,0005)$ MPa ($0,1 \pm 0,005$) bar, using the horizontal axis of the hose as a datum.
- record the flow rate "Q" after stabilisation.

8.2.4 Requirements

Shower hoses shall be classified according to the flow rate value "Q" at a pressure of (0,01) MPa (0,1) bar as shown in Table 3.

Table 3 — Flow rate classes

Class	Flow rate "Q" at (0,01) MPa (0,1) bar
E	$0,06 \text{ l/s} < Q < 0,18 \text{ l/s}$ (3,6 l/min to 10,8 l/min)
H	$0,18 \text{ l/s} \leq Q$ (10,8 l/min minimum)

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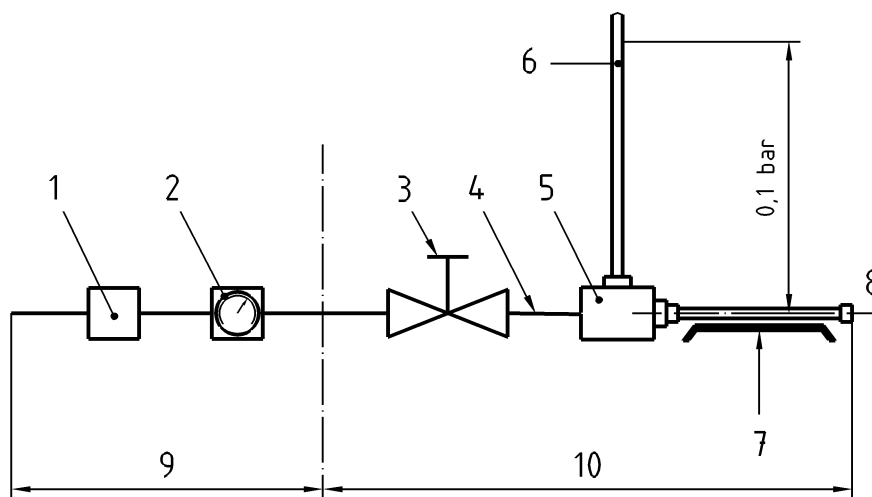


Figure 4 — Flow test rig