

Sanitary tapware: General technical specifications for single taps and mixer taps (nominal size 1/2) PN 10: Minimum flow pressure of 0.05 MPa (0.5 bar)

The European Standard EN 200:1989 has the status of a
British Standard

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



Document Sharing Hub

Cooperating organizations

The European Committee for Standardization, under whose supervision this European Standard was prepared, comprises the national standards organizations of the following countries.

Austria	Oesterreichisches Normungsinstitut
Belgium	Institut belge de normalisation
Denmark	Dansk Standardiseringsraad
Finland	Suomen Standardisoimislitto, r.y.
France	Association française de normalisation
Germany	Deutsches Institut für Normung e.V.
Greece	Hellenic Organization for Standardization
Iceland	Technological Institute of Iceland
Ireland	National Standards Authority of Ireland
Italy	Ente Nazionale Italiano di Unificazione
Luxembourg	Inspection du Travail et des Mines
Netherlands	Nederlands Normalisatie-instituut
Norway	Norges Standardiseringsforbund
Portugal	Instituto Português da Qualidade
Spain	Asociación Española de Normalización y Certificación
Sweden	Standardiseringskommissionen i Sverige
Switzerland	Association suisse de normalisation
United Kingdom	British Standards Institution

This British Standard, having been prepared under the direction of Technical Committee B/504, was published under the authority of the Standards Board and comes into effect on 1 April 1992

© BSI 08-1999

The following BSI references relate to the work on this standard:
Committee reference B/504/8
Draft for comment 83/14570 DC

ISBN 0 580 20553 3

Amendments issued since publication

Amd. No.	Date	Comments

Contents

	Page
Cooperating organizations	Inside front cover
National foreword	ii
Brief history	2
Foreword	2
Text of EN 200	5
National annex NA (informative) Committees responsible	32
National annex NB (informative) Cross-references	Inside back cover

National foreword

This British Standard has been prepared under the direction of Technical Committee B/504, Water Supply, and is the English language version of EN 200 “*Sanitary tapware: General technical specifications for single taps and mixer taps (nominal size $\frac{1}{2}$) PN 10: Minimum flow pressure of 0,05 MPa (0,5 bar)*”, published by the European Committee for Standardization (CEN).

EN 200 was produced as a result of international discussion in which the UK took an active part. It covers requirements for high pressure applications, which are in use in most European countries, but the traditional UK water supply system uses low pressure, and so the UK agreed not to vote against the approval of EN 200 only on condition that the UK was permitted to publish a revision of BS 5412/BS 5413-1 to BS 5413-5. This revision is in preparation and will follow the format of EN 200, differing only where absolutely necessary for low pressure application.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 32, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

UDC 621.646.2:644.6:621.646.6/7:696.11:696.4:620.1

Descriptors: Sanitary valves, cocks, mixing valves, valves and fittings, dimensions, leaktightness, hydraulic properties, mechanical strength, pressure tests, fatigue tests, acoustic properties, marking

English version

**Sanitary tapware: General technical specifications
for single taps and mixer taps (nominal size $\frac{1}{2}$)
PN 10: Minimum flow pressure of 0,05 MPa (0,5 bar)**

Robinetterie sanitaire: Spécifications
techniques générales des robinets simples
et mélangeurs (dimension nominale $\frac{1}{2}$)
PN 10: Pression dynamique minimale
de 0,05 MPa (0,5 bar)

Sanitärarmaturen: Allgemeine technische
Anforderungen an Auslaufventile und
Mischbatterien (Nennengröße $\frac{1}{2}$)
PN 10: Mindestfließdruck 0,05 MPa (0,5 Bar)

This European Standard was approved by CEN on 1988-06-20. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

© CEN 1989 Copyright reserved to all CEN members

Brief history

This European Standard has been prepared by Technical Committee CEN/TC 34 “*Water fittings and waste fittings for sanitary appliances — Dimensions — Quality*”.

The work was initially undertaken with a view to establishing several standards, themselves divided into Parts:

- prEN 27 – Mixing taps with concealed body for mounting on horizontal surfaces.
- prEN 28 – Mixing taps with combined visible body known as “single hole” for mounting on horizontal surfaces.
- prEN 29 – Single taps for mounting on vertical surfaces.

The first Part of these standards, on dimensional characteristics, reached the final voting stage and was approved in 1977.

The study of mixing taps with visible cross-connected body for mounting on vertical surfaces (prEN 97) was subsequently undertaken; this standard was divided up in the same way as for the other standards. Part 1 was submitted for preliminary voting in 1977 and was approved.

The other Parts, 2 (tightness characteristics), 3 (pressure resistance characteristics) and 4 (hydraulic characteristics) of these draft standards were not put to the vote individually, as in 1980, the members of CEN/TC 34 felt it preferable to combine in a single document all specifications on taps and the test procedure for verifying them. Taps, regardless of type, can only be judged to be in conformity with the standard if they satisfy *all* of these characteristics.

Since 1980, the work of CEN/TC 34 has been supplemented by the study of the torsional strength of the control mechanism, the mechanical endurance of the movable parts, and the acoustic characteristics. Recently, the CEN/TC 34 members unanimously decided to study, in the form of a separate standard, the characteristic of nickel/chromium surface coating (condition of visible surfaces and quality of coating). This standard will be studied as quickly as possible so that the final vote on it may coincide with the final vote on EN 200.

The members of CEN/TC 34 have decided unanimously to prepare a separate standard concerning the characteristics of nickel-chromium surface coatings (apparent surface conditions and coating quality). This standard is EN 248.

According to the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

Foreword

This European Standard is divided in different clauses, each of them lays down, for each characteristic, the test method and the corresponding requirements.

A tap will be considered to be in accordance with this European Standard if it complies with all of the clauses.

Contents

		Page
Brief history	2	
Foreword	2	
1 Scope	5	
2 Field of application	5	
3 Normative references	5	
4 Designation	5	
5 Marking — identification	5	
6 Materials	6	
7 Dimensional characteristics	6	
7.1 Combination taps with concealed body for mounting on horizontal surfaces	6	
7.2 Single hole combination tap assemblies with combined visible body for mounting on horizontal surfaces	9	
7.3 Bib taps for mounting on vertical surfaces	10	
7.4 Combination taps with visible cross-connected body for mounting on vertical surfaces	11	
7.5 Dimensions of nozzle outlets to accept aerators	14	
8 Watertightness characteristics	15	
9 Pressure resistance characteristics	18	
10 Hydraulic characteristics	20	
11 Mechanical strength characteristics	22	
12 Mechanical endurance characteristics	23	
12.1 Mechanical endurance characteristics of the operating mechanism	23	
12.2 Mechanical endurance of diverters	24	
12.3 Mechanical endurance of swivel nozzles	27	
13 Acoustic characteristics	27	
Annex A (for information) Recommendations for the construction of pressure take off tees	30	
Figure 1	6	
Figure 2	7	
Figure 3	7	
Figure 4 — Inlet connections	8	
Figure 5	9	
Figure 6	10	
Figure 7	10	
Figure 8 — Straight union	12	
Figure 9 — Eccentric unions	12	
		Figure 10 — Example of a combination tap with visible cross-connected body mounted on a vertical surface for baths and showers, with diverter 14
		Figure 11 14
		Figure 12 15
		Figure 13 — Supply circuit 21
		Figure 14 21
		Figure 15 — Examples of drive plates 25
		Figure 16 25
		Figure 17 — Pressure gauge tappings examples 30
		Table 1 — Conditions of use of tapware 5
		Table 2 — Dimensions of combination taps with concealed body for mounting on horizontal surfaces 8
		Table 3 — Inlet connections, with bore 9
		Table 4 — Dimensions of single hole combination taps assemblies for mounting on horizontal surfaces 11
		Table 5 — Dimensions of bib taps for mounting on vertical surfaces 11
		Table 6 — Straight unions 12
		Table 7 — Eccentric unions 13
		Table 8 — Dimensions of union 13
		Table 9 — Dimensions of taps with cross-connected body mounted on vertical surfaces 14
		Table 10 15
		Table 11 15
		Table 12 — Summary of watertightness tests 19
		Table 13 — Mechanical behaviour — resistance to pressure 20
		Table 14 — Acoustic groups 28

1 Scope

The aim of this European Standard is to specify:

- the dimensional, watertightness, pressure resistance, hydraulic, mechanical strength, mechanical endurance and acoustic characteristics with which the single taps and mixer taps shall comply;
- the test methods to verify these characteristics.

2 Field of application

This European Standard applies to draw off taps to be fitted to sanitary appliances installed in rooms used for bodily hygiene (WCs, bathrooms, etc.) and in kitchens.

It applies to sanitary draw off taps of nominal size $\frac{1}{2}$ and PN 10 operating at the following pressure and temperature conditions.

Table 1 — Conditions of use of tapware

	Limits of use	Recommended limits for correct operation
Pressure	0,5 MPa to 1 MPa (0,5 to 10 bar)	$0,1 \text{ MPa} < P < 0,5 \text{ MPa}$ (1 bar < P < 5 bar)
Temperature	Max. 90 °C	Max. 65 °C Lower limits: as for installation

The scope of this standard excludes the following: single control mixers, thermostatic mixers, jet regulators, shower accessories, waste taps, and all taps adapted for special use.

3 Normative references

EN 246:1989, *Sanitary tapware — General specifications for flow rate regulators.*

EN 248:1989, *Sanitary tapware — General specifications for Ni-Cr metallic surface coatings.*

ISO 228-1:1982, *Pipe threads where pressure tight joints are not made on the threads — Part 1: Designation, dimensions and tolerances.*

ISO 3822-1:1983, *Acoustics — Laboratory test noise emission from appliances and equipment used in water supply installations — Part 1: Method of measurement.*

ISO 3822-2:1984, *Acoustics — Laboratory tests on noise emissions from appliances and equipment used in water supply installations — Part 2: Mounting and operating conditions for draw-off taps.*

ISO 3822-4:1985, *Acoustics — Laboratory tests on noise emissions from appliances and equipment used in water supply installations — Part 4: Mounting and operating conditions for special appliances.*

ISO 5167:1980, *Measurement of fluid flow by means of orifice plates, nozzles and venturi tubes inserted in circular cross section conduits running field.*

4 Designation

The draw-off taps covered by this standard are designated as follows:

- its type;
- its nominal size $\frac{1}{2}$;
- the reference of this standard: EN 200.

Example: Combination tap with combined visible body, $\frac{1}{2}$, for mounting on horizontal surfaces, EN 200.

5 Marking — identification

5.1 Marking

Tapware to this standard shall be marked in a permanent and indelible fashion as follows:

- on the head, with the manufacturer's name or identification;
- on the body, with the manufacturer's name or identification, its acoustic group and flow resistance class.

5.2 Identification

The control devices for the taps shall be identified by:

- the colour blue for cold water;
- the colour red for hot water.

In the case of taps with separate control devices, the cold water shall be on the right and the hot water on the left.

6 Materials

6.1 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 change to the drinking water either in terms of quality, appearance, smell or taste.

In the recommended limits for correct operation in clause 2 the materials shall not undergo any change which would impair the performance of the tap. Parts subjected to pressure shall withstand the maximum operating pressures given in Table 1. Materials without adequate resistance to corrosion shall be protected against corrosion.

6.2 Exposed surface condition

Exposed surfaces shall comply with the requirements of EN 248, for electrodeposited Ni-Cr coatings.

6.3 Coating quality

The coating shall comply with the requirements of EN 248, for electrodeposited Ni-Cr coatings.

7 Dimensional characteristics

The design and production of the parts without dimensions in no way prejudice the various solutions applied by the manufacturers when producing the corresponding parts.

7.1 Combination taps with concealed body for mounting on horizontal surfaces

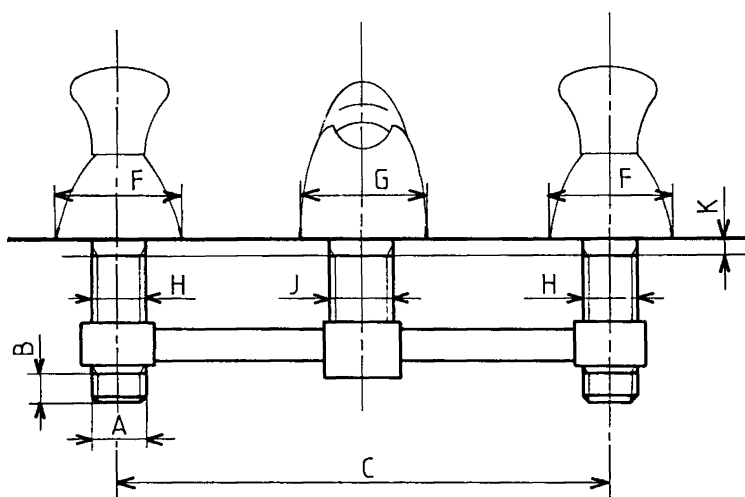


Figure 1

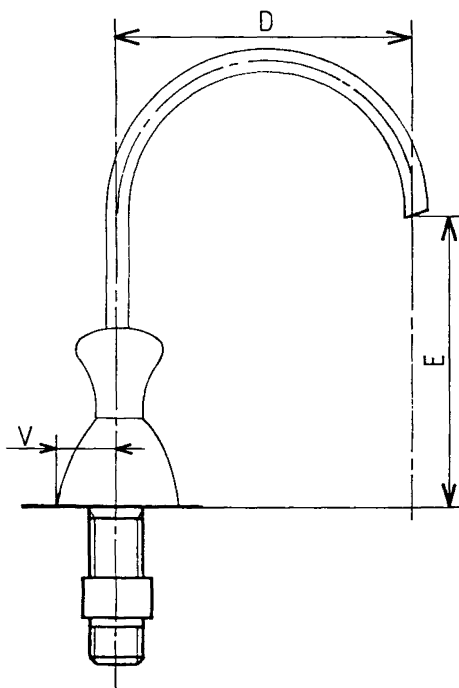


Figure 2

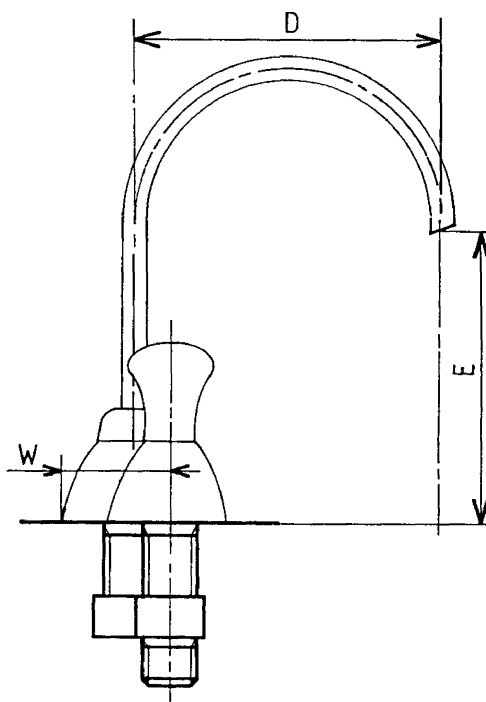


Figure 3

Table 2 — Dimensions of combination taps with concealed body for mounting on horizontal surfaces

Dimension reference	Values (mm)	Comments
A	G ₁ B	ISO 228-1
B	8 min.	
C (see note)	200 ± 1 200 ⁺¹⁰ ₋₅	In the case of fixed taps In the case of adjustable taps
D	— Fixed nozzle: 90 min. — Movable nozzle: 100 min.	Dimensions measured from the centre of the outlet orifice, the tap being of a type that may be fitted with or without an aerator, as appropriate
E	— Fixed nozzle: 25 min. — Movable nozzle: low outlet: 25 min. high outlet: 125 min.	
F	42 min.	
G	45 min.	Smallest dimension of the base
G ₁	external diameter 10 max.	Backnut (not shown)
E	29 max. 24 max. for taps with fixed centres	
J	33,5 max.	
K	Value such that it allows the tap to be fixed to the appliance: — with a minimum thickness of 5 mm for ceramic ware — with minimum thickness of 1 mm for other materials	This value shall also allow for a maximum thickness of support below the body of the tap of 18 mm
V	32 max.	Maximum rear projection of the base of the tap
W	47 max.	

NOTE The value of 200 mm does not apply to bidets.

Bore for connecting joints

The connections of certain types of taps may be provided with a bore. If a bore is provided, the dimensions shall be chosen exclusively from those given for dimension N₁ and N₂.

