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Specification for

**Low-resistance single
taps and combination
tap assemblies
(nominal size $\frac{1}{2}$
and $\frac{3}{4}$) suitable for
operation at PN 10 max.
and a minimum flow
pressure
of 0.01 MPa (0.1 bar)**

Product code 00610711

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee B/504, Water supply, upon which the following bodies were represented:

- Association of Consulting Engineers
- Association of Manufacturers of Domestic Unvented Supply Systems Equipment (MODUSSE)
- British Bathroom Council
- British Foundry Association
- British Non-Ferrous Metals Federation
- British Plastics Federation
- British Plumbing Fittings Manufacturers' Association
- Department of the Environment
- Department of the Environment (Drinking Water Inspectorate)
- Fibre Cement Manufacturers' Association Limited
- Institute of Plumbing
- Institution of Water and Environmental Management
- Local Authority Organizations
- Scottish Association of Directors of Water and Sewerage Services
- Water Companies Association
- Water Research Centre
- Water Services Association of England and Wales

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Foreword

This British Standard has been prepared by Technical Committee B/504 and replaces BS 5412-1 to BS 5412-5:1976 and BS 5413-1 to BS 5413-5:1976 which are withdrawn.

For convenience and economy, the requirements of these two standards are being reissued together as BS 5412:1995.

In accordance with CEN Resolution BT 73/1987, this standard reflects, where appropriate, the requirements of BS EN 200:1992 and is presented in a similar format.

It should be noted, however, that the pressure range, outlet nozzle height and mechanical endurance characteristics differ from those covered by BS EN 200.

This revision continues to acknowledge the traditional UK installation which combines mains-fed and cistern-fed water supplies.

The water pressure that provides the minimum flow rates specified in this standard is that appropriate to the cistern-fed supply. This does not preclude the use of these taps on higher pressure or mains-fed supplies since the test criteria ensure the integrity of the taps at higher pressures.

There are no UK specifications governing the level of acoustic emissions from water installations. If individual supply pressures are such that excessive noise is generated it is recommended that pressure or flow regulators are fitted in the system or, where practical, taps conforming to an appropriate acoustical classification of BS EN 200 are employed.

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 to iv, pages 1 to 28, 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.

1 Scope

This British Standard specifies:

- a) the dimensional, watertightness, pressure resistance, hydraulic, mechanical strength and mechanical endurance characteristics of nominal size $\frac{1}{2}$ and $\frac{3}{4}$ single and combination taps;
- b) test methods to verify the characteristics.

This British Standard applies to sanitary draw-off taps of nominal size $\frac{1}{2}$ and $\frac{3}{4}$ (PN 10) operating at the pressure and temperature conditions given in Table 1.

It does not cover mechanical mixing valves, thermostatic mixing valves, jet regulators, shower accessories and all taps adapted for special use (e.g. hose union taps).

2 Field of application

This British Standard applies to draw-off taps (single and combination) for use with sanitary appliances installed in rooms used for bodily hygiene (cloakrooms, bathrooms, etc.) and in kitchens, i.e. for use with baths, wash basins, bidets, showers and sinks. (Figure 1 shows the domestic water supply system used traditionally in the UK.)

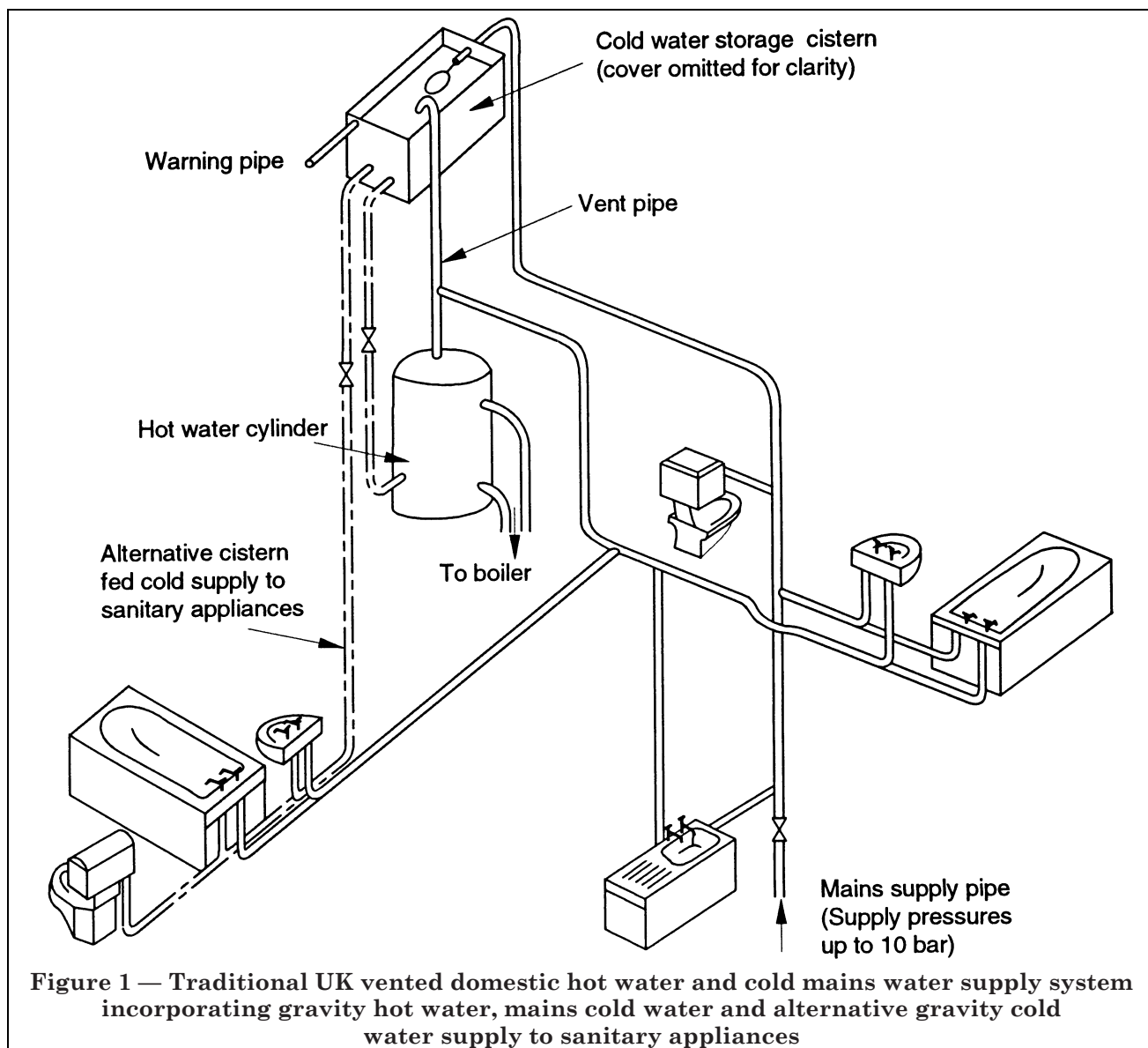


Table 1 — Conditions of use of tapware

Parameter	Maximum limits of use	Recommended limits for correct operation
Pressure	Static: 1 Mpa (10 bar)	Flow: not less than 0.01 MPa (0.1 bar)
Temperature	90 °C	Max. 65 °C Lower limit: as for installations
NOTE The pressures given are flow pressures.		

3 Normative references

This British Standard incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this British Standard only when incorporated in it by updating or revision.

4 Designation

The taps covered by this specification are designated by reference to:

- a) type;
- b) nominal size ($\frac{1}{2}$ or $\frac{3}{4}$);
- c) this standard.

Example

Combination tap with combined visible body, for mounting on horizontal surfaces, nominal size $\frac{1}{2}$, BS 5412.

5 Marking and identification

5.1 Marking

Taps shall be marked¹⁾ in a permanent and legible fashion as follows:

- a) on the body, handle or headwork, with the manufacturer’s name or identification;
- b) on the body, handle or headwork, accessible after installation, with the number of this British Standard.

5.2 Identification

5.2.1 The control devices for the taps shall be identified by:

- a) the colour blue, preferably, or the letter C for cold water;

- b) the colour red, preferably, or the letter H for hot water.

5.2.2 The cold water control device shall be on the right and the hot water control device on the left, when viewed from the front.

5.2.3 In the case of divided outlet combination tap assemblies (mains fed on cold inlet) which give cold waterway flow rates at 0.1 bar²⁾ of less than 7.5 l/m, the cold-water inlet shall be colour-coded blue, e.g. using coloured tape, disks or paint.

6 Materials

6.1 Chemical and hygiene 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 in terms of quality, appearance, smell or taste. All non-metallic materials shall conform to BS 6920-1, BS 6920-2 and BS 6920-3.

Within the recommended limits for correct operation given in Table 1, the materials shall not undergo any change that 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 conditions

Tap components shall be supplied in one of the following conditions:

- a) nickel and chromium plated;
- b) as moulded (plastics);
- c) finish ordered by the purchaser.

Where metal tap components are plated with nickel and chromium, the coatings shall conform to BS EN 248 and only materials impervious to the plating solution shall be allowed to come into contact with the solution during plating.

6.3 Finish

6.3.1 Castings

Unsound castings shall not be treated to eliminate porosity.

6.3.2 Hot stampings

Unsound stampings shall not be treated to eliminate faults.

¹⁾ Marking BS 5412:1995 on or in relation to a product represents a manufacturer’s declaration of conformity, i.e. a claim by or on behalf of the manufacturer that the product meets the requirements of the standard. The accuracy of the claim is solely the claimant’s responsibility. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

²⁾ 1 bar = 10⁵ Pa.

6.3.3 Plastics mouldings

Unsound mouldings shall not be treated to eliminate faults.

7 Dimensional characteristics

7.1 Inlet connections

Where the inlet connection is a $G \frac{1}{2} B$ or $G \frac{3}{4} B$ thread, it shall be machined at its entry to the dimensions shown in Figure 2 and given in Table 2 for type 1, 2 or 3.

7.2 Single taps

The dimensions of single taps for mounting on horizontal or vertical surfaces shall be in accordance with those given in Table 3.

7.3 Single-hole combination tap assemblies

The dimensions of single-hole combination tap assemblies with combined visible body for mounting on horizontal surfaces shall be in accordance with those given in Table 4.

7.4 Two-hole combination tap assemblies

The dimensions of two-hole combination taps with visible body for mounting on horizontal surfaces shall be in accordance with those given in Table 5.

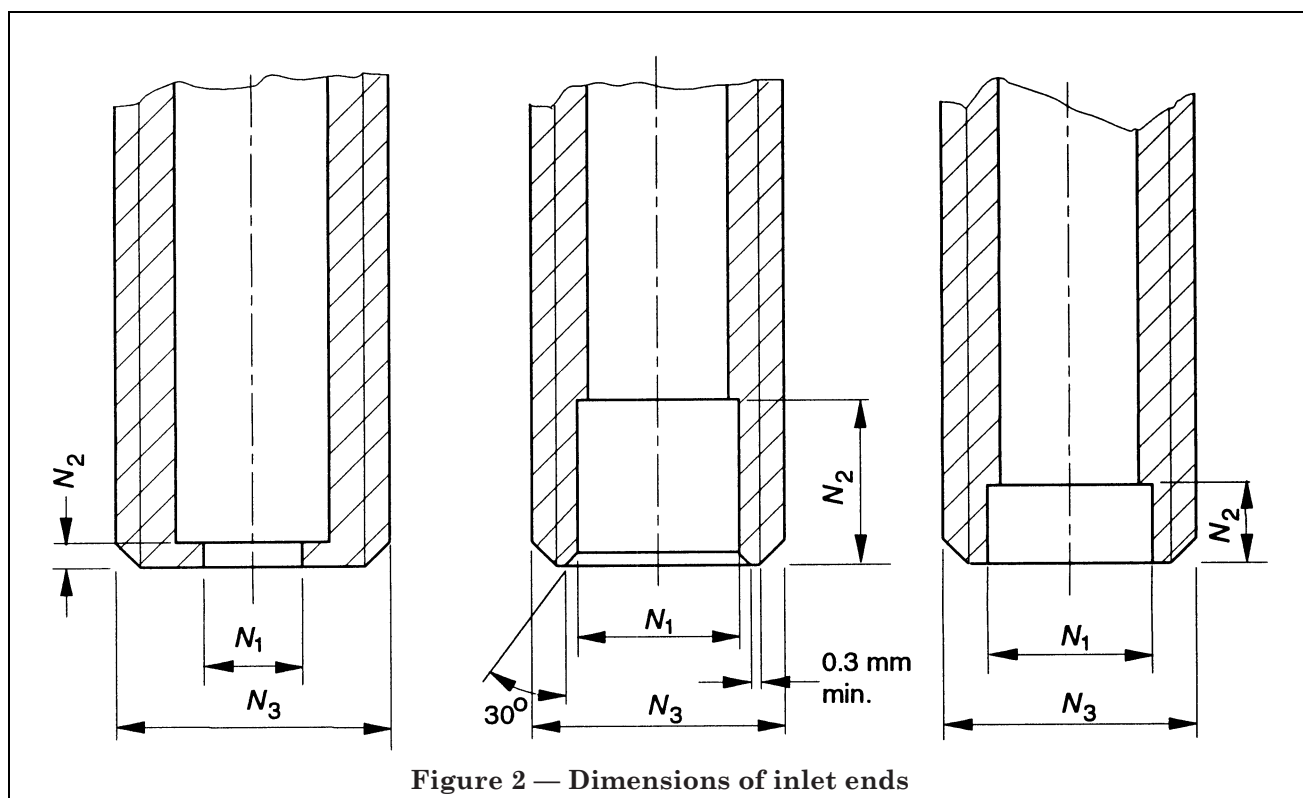


Figure 2 — Dimensions of inlet ends

Table 2 — Dimensions of inlet ends

Nominal size N_3	Type 1		Type 2		Type 3	
	$N_1 + 0.2$	N_2 min.	$N_1 \pm 0.05$	N_2 min.	$N_1 \pm 0.3$	N_2 min.
$G \frac{1}{2} B$	12.3	5.0	15.2	13.0	14.7	6.4
$G \frac{3}{4} B$	—	—	—	—	19.9	6.4

NOTE All dimensions are in millimetres.

Table 3 — Dimensions of pillar and bib taps

Dimension reference ^a		Nominal size		Comments
		$\frac{1}{2}$	$\frac{3}{4}$	
A	Bib and pillar taps	$G \frac{1}{2} B$	$G \frac{1}{2} B$	Conforming to BS 2779.
B min.	Pillar taps Bib taps	50.0 11.0	50.0 14.0	
C min.	—	67.0	80.0	Dimension measured from the centre of the outlet orifice including jet regulator or flow straightener, if fitted.
D min.	Basin taps Sink taps Bath taps	20.0 ^b 95.0 —	— — 25.0	Dimension measured from the lowest point of the outlet orifice, above the mounting surface of the tap, including jet regulator or flow straightener if fitted.
E min.	Pillar taps Bib taps	42.0 29.0	50.0 36.0	Smallest dimension of base or flange.
F	—	A value that allows tightening of the tap onto a support with a minimum thickness of 5 mm.		Where the support thickness is less than 5 mm a spacing washer may be used.

NOTE 1 All dimensions are in millimetres unless otherwise stated.

NOTE 2 Details of inlets are given in Figure 2 and Table 2.

NOTE 3 Details of threads for jet regulators are given in Table 10 and Table 11 and Figure 9 and Figure 10.

^a See Figure 3.

^b This dimension differs from that given in BS EN 200 (i.e. 25 mm) where it is measured from the centre of the outlet orifice.

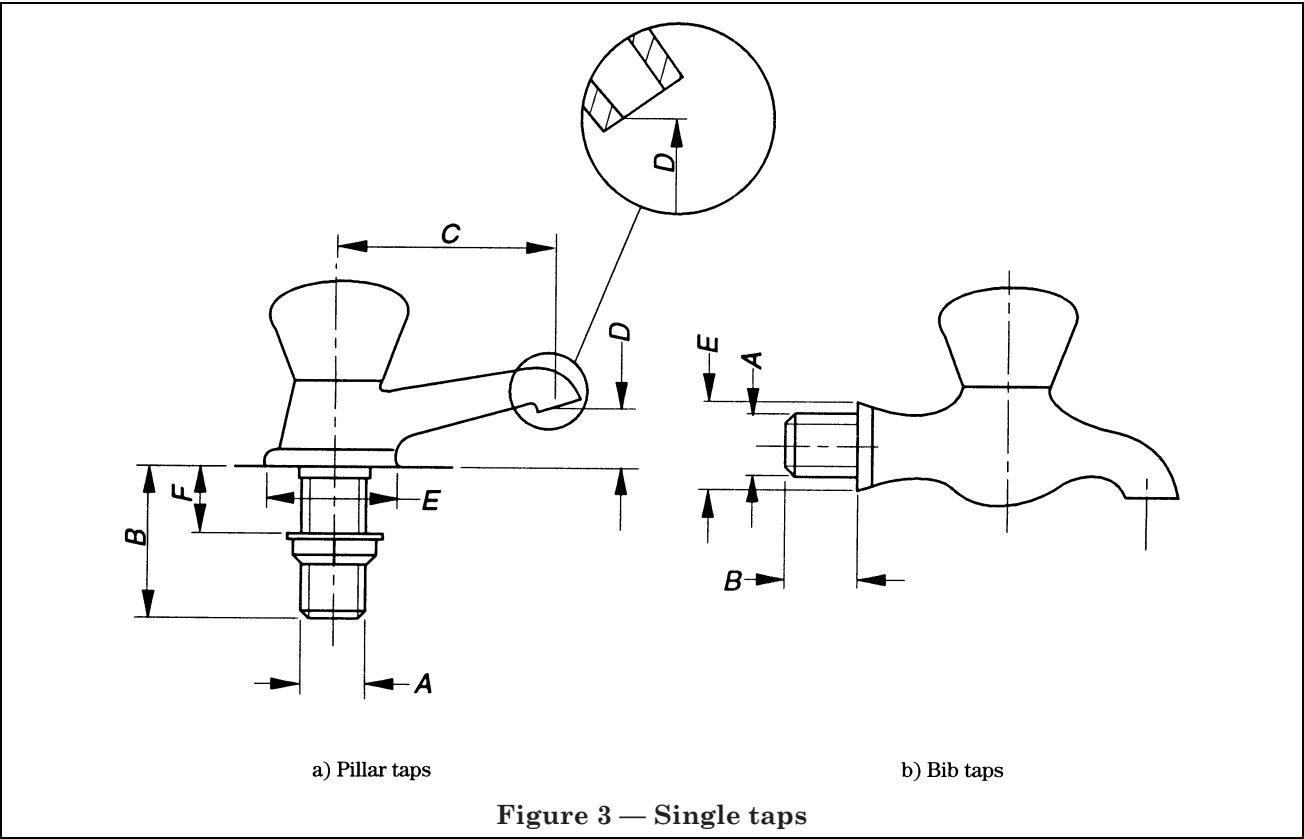


**Table 4 — Dimensions of single-hole combination tap assemblies
for mounting on horizontal surfaces**

Dimension reference ^a	Dimensions	Comments
<i>D</i> min.	Fixed nozzle, 90 Moveable nozzle, 100	Horizontal distance from axis of diameter <i>J</i> to centre of outlet orifice, including jet regulator or flow straightener if fitted.
<i>E</i> min.	Fixed nozzle, 20 ^b Moveable nozzle: — low outlet, 20 ^b — high outlet, 125	Dimension measured from the lowest point of the outlet orifice above the mounting surface of the tap including jet regulator or flow straightener if fitted.
<i>G</i> min.	45	Minimum dimension of the base.
<i>G</i> ₁	External diameter, 50 min.	Clamping washer or backnut flange diameter.
<i>J</i> max.	33.5 diameter	Diameter of inlet shank, or circumscribed diameter to clear the inlet pipes and retention stud.
<i>K/L</i>		Value that enables the product to be mounted on a support of 1 mm to 18 mm thickness.
<i>T</i>	10 or 12 copper tube or flexible pressure-resistant hose	Plain/swaged or fitted with G $\frac{3}{8}$ B or G $\frac{1}{2}$ B male or female threaded inlet.
<i>U</i> min.	Preferred size, 350 ^c	
<i>V</i> max.	32	Maximum projection to rear measured from axis of dimension <i>J</i> .
NOTE All dimensions are in millimetres unless otherwise stated.		
^a See Figure 4.		
^b This dimension differs from that given in BS EN 200:1992 (i.e. 25 mm) where it is measured from the centre of the outlet orifice.		
^c A size of 220 mm may be accepted if agreed between the manufacturer and the purchaser.		