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Specification for

Spray mixing taps

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British Valve Manufacturers' Association	South London Consortium
Copper Tube Fittings Manufacturers' Association	Thames Water Authority — Metropolitan Water Division
Department of Prices and Consumer Protection — Metrology Quality Assurance and Standards Division	Water Research Centre

This British Standard, having been prepared under the direction of the Building Services Standards Committee, was published under the authority of the Executive Board and comes into effect on 31 October 1979

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Foreword

This standard, prepared under the direction of the Building Services Standards Committee, is linked with BS 1010-1 and BS 1010-2, BS 1415-1, BS 5388 and BS 5412 & BS 5413. Spray mixing taps, incorporating a mixing function operated by the user, possess characteristics similar to those of spray taps but are able to accept hot and cold water supplies and mix them for delivery at a temperature to suit the user. The factors governing the use of spray mixing taps and their associated plumbing systems are numerous and guidance is given in Appendix A on installation considerations. For ease of reference, a table linking the types of spray mixing taps with relevant clauses is given in Appendix B.

Spray taps should normally deliver between 0.03 litres and 0.06 litres of water per second. Spray mixing taps have therefore been designated “series 45”, which refers to the average rate of flow, i.e. 45 ± 15 ml/s (mid-blend position). (See clause 7.)

It is recognized that non-standard spray taps may be required for some apparatus and there may be some merit in requesting alternative series numbers to be used in these special cases.

Fixed flow restrictors, i.e. orifice discs, etc., have been omitted from this standard as not being compatible with the sophistication of spray mixing taps.

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, pages 1 to 14, 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.

Section 1. General

1 Scope

This British Standard specifies requirements for the materials, design, construction, dimensions, testing and installation of non-thermostatic, non-compensating spray mixing taps for ablutionary purposes. Details of information that shall be supplied by the purchaser are given in Appendix C.

2 References

The titles of the publications referred to in this standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1

spray mixing tap

a tap supplied with hot and cold water and incorporating a mixing device operated by the user. The mixed water is delivered at a restricted rate of flow in the form of a spray

3.2

single sequential control spray mixing tap

a fitting into which supplies of hot and cold water enter, through separate valve ports, are mixed in a formed chamber and thence delivered through a spray outlet. The temperature of the mixed water is governed through a nominal range in a predetermined sequence by the manual operation of a single control which also has a shut-off feature

3.3

twin (or dual) control spray mixing tap

a fitting into which supplies of hot and cold water enter, through separate valve ports, are mixed in a formed chamber and thence delivered through a spray outlet. The temperature of the mixed water is governed independently by the manual operation of one control and the shut-off feature is independently governed by the manual operation of another control

3.4

single control, twin (or dual) function, spray mixing tap

a fitting into which supplies of hot and cold water enter, through separate valve ports, are mixed in a formed chamber and thence delivered through a spray outlet. The temperature of the mixed water is governed by the manual operation of the single control in one mode and the shut-off feature is independently governed by the manual operation of the same control in an alternative mode

3.5

combination spray mixing tap

a fitting into which supplies of hot and cold water enter, through separate valve ports, are mixed in a chamber and thence delivered through a spray outlet. The temperature of the mixed water and the shut-off feature of the hot and cold water is governed by the operation of two independently manually operated hot and cold controls

3.6

dead-leg

the length of hot water pipe leading to a draw-off point and not forming part of a flow and return hot water circuit

3.7

flow restrictor

that component of a spray mixing tap, not being the spray plate, which governs or restricts the rate of discharge

3.8

spray outlet

a fitting that is attached to the outlet of a tap and causes water passing through it to break up into a spray

NOTE Reference should be made to BS 4118 for other definitions.

4 Materials

The physio-chemical characteristics of spray mixing taps shall comply with the requirements of section 2 of BS 5412 & BS 5413-5:1976.

5 Marking

Spray mixing taps manufactured to the requirements of this standard shall be legibly and permanently marked with the following information:

- a) the manufacturer's name or identification mark;
- b) the number of this British Standard, i.e. BS 5779;
- c) the character "H" on the hot water inlet and the character "C" on the cold water inlet. Alternatively, the inlets may be colour coded: red for hot water and blue for cold water.¹⁾

Additional markings are not precluded, e.g. BS 1010-1 and BS 1010-2, BS 1415-1, BS 5412 or BS 5413.

Section 2. Dimensions, design and construction

6 General

The design and construction of spray mixing taps of either wall type (vertical mounting) or pillar type (horizontal mounting) shall be as specified in BS 1010-1 or BS 1010-2 or BS 5412 & BS 5413 or BS 1415-1 except for those features specified in section 2 of this standard. Pillar type (horizontal mounting) spray mixing taps shall be designed to suit and fit any British Standard basin tap hole and shall have an outside diameter shank of 29 mm max., except that for single hole combination tap assemblies this dimension may be increased to 33.5 mm diameter

Spray mixing taps shall have the dimensional features indicated in Figure 1.

7 Nominal size

The nominal size of spray mixing taps shall be designated as follows:

- 8 × 45
- 10 × 45
- 12 × 45
- $\frac{3}{8}$ × 45
- $\frac{1}{2}$ × 45

8 Inlets

Inlets may be any of the following:

- a) 8 mm outside diameter copper tube;
- b) 10 mm outside diameter copper tube;
- c) 12 mm outside diameter copper tube;

- d) G $\frac{3}{8}$;
- e) G $\frac{1}{2}$.

9 Spray outlet

The spray mixing tap shall be provided with a spray outlet capable of causing the water to assume the shape of a diverging spray. The cone shall not diverge to an extent greater than that shown in Figure 2 when the mixing valve is fully opened.

Every waterway in the spray outlet shall be capable of accepting a 1 mm nominal diameter probe manufactured from steel complying with the requirements of BS 1407.

The spray outlet device shall be capable of being removed for cleaning, but only by the use of a special tool.

10 Flow restrictor

A flow restrictor shall be provided in the spray mixing tap. The flow restrictor shall be either manually adjustable or of the self-adjusting type and shall satisfy the flow requirements specified in clause 12, and Appendix D.

The manually adjustable type flow restrictor shall be in such a form that it can be adjusted or changed without removing the spray mixing tap from the wash basin or wall, but cannot be so adjusted without the use of a special tool.

Section 3. Type testing

11 General

Spray mixing taps shall be capable of passing the tests specified in BS 5412 & BS 5413-2 and BS 5413-4, except that the following types:

- a) single sequential control spray mixing tap (see 3.2);
- b) twin (or dual) control spray mixing tap (see 3.3);
- c) single control, twin (or dual) function, spray mixing tap (see 3.4);

need not comply with the requirements of the endurance test in 10.1 of BS 5412 & BS 5413-4:1976.

In addition, spray mixing taps shall be capable of meeting the test requirements specified in section 3 of this standard.

The pressures and flows specified in this standard shall be measured with gauges whose accuracies are in accordance with BS 1780.

¹⁾ This item does not apply if the inlets are interchangeable.