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Float operated valves —

Part 2: Specification for diaphragm type float operated valves (copper alloy body) (excluding floats)

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Foreword

This Part of BS 1212 has been prepared under the direction of the Building Services Standards Committee and specifies requirements for diaphragm type float operated valves (excluding floats). It supersedes BS 1212-2:1970, which is withdrawn.

The new features in this Part of BS 1212 include the following:

- a) the possible production of certain components from plastics materials;
- b) a seat numbering system;
- c) a bottom entry inlet connection and its associated inlet elbow, with adjustable stay;
- d) a recognition of the greater lifting effort of plastics floats over copper floats of equivalent size;
- e) a test for plastics backnut strength, in line with BS 1212-3;
- f) a recognition of current manufacturing practice by deletion of reference to the use of agate tipped seats;
- g) a recognition of methods of attachment of the discharge arrangements currently used in float valves manufactured in accordance with BS 1212-3, and a test to verify their effectiveness;
- h) a modification of the method of dimensioning some components to ensure the lever does not rise above the horizontal at valve closure;
- j) the dimensional alignment of the body inlet connection with BS 1212-1, which now requires only one seat joint ring for either plastics or metal seats.

Float operated valves complying with BS 1212-2 and carrying the Kitemark are automatically eligible for listing in the Water Research Centre Fittings Scheme Directory of Water Fittings.

This Part of BS 1212 has been revised in metric terms, except for certain thread sizes and pipe thread designations which are retained in imperial sizes to accord with BS 2779.

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 20, 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 Part of BS 1212 specifies materials, dimensions, tolerances and performance requirements for diaphragm type float operated valves (copper alloy body) of nominal sizes $\frac{3}{8}$ and $\frac{1}{2}$ with seat numbers 3, 5, 6 and 9 intended for use with floats complying with BS 1968 and BS 2456.

NOTE 1 The nominal sizes correspond with the pipe size of the thread on the inlet shank as specified in BS 2779. The nominal size $\frac{3}{8}$ is formed by making a special inlet on the size $\frac{1}{2}$.

NOTE 2 The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definition

For the purposes of this Part of BS 1212 the following definition applies.

diaphragm type float operated valve

a float operated valve in which the flow of water is controlled by the flexing of a diaphragm and which incorporates or is fitted with a discharge arrangement to conduct water into the cistern to which the float operated valve is to be fitted

NOTE In operation, flow from the valve reduces as the water level rises towards shut-off water level. The change in water level over which the flow progressively reduces from maximum to zero is at least four times the nominal size of the valve.

3 Designation for ordering

Diaphragm type float operated valves shall be designated by the following:

- a) the nominal size;
- b) the words “diaphragm type float operated valve”;
- c) the seat number;

d) the number of this British Standard in the form of BS 1212-2;

e) bottom entry connection, if required.

Example. “Nominal size $\frac{1}{2}$ diaphragm type float operated valve, no. 6 seat, BS 1212-2”.

4 Marking

4.1 General

A diaphragm type float operated valve shall be permanently and legibly marked in accordance with 4.2 and 4.3 in such a way as not to deform any working part.

4.2 On the body

Rolled, cast or stamped on the body, backplate or backplate coupling nut shall be the following:

- a) the number of this British Standard in the form BS 1212-2 ¹⁾;
- b) the manufacturer's name or trade mark.

4.3 On every seat including spares

The flange of the seat shall be marked with the following:

- a) the manufacturer's name or trade mark;
- b) the designation of the seat (3, 5, 6 or 9) (see 20.2).

In the case of plastics seats, the marking shall be either within the recess for embossed marking or on the flat face for engraved marking (see clause 20 and Figure 10).

¹⁾ Marking BS 1212-2 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 therefore solely the responsibility of the person making the claim. Such a declaration is not to be confused with third party certification of conformity, which may also be desirable.

Section 2. Materials

5 Quality and finish

5.1 General

The materials to be used in the construction of components for diaphragm type float operated valves shall be chosen from those given in Table 1.

5.2 Effect of non-metallic materials on water quality

When used under the conditions for which they are designed, non-metallic materials in contact with or likely to come into contact with potable water shall comply with BS 6920-1.

6 Plastics

6.1 With the exception of seats, backplates and backplate plungers, where no reworked material shall be used (see **6.2** and **6.3**), the plastics parts of diaphragm type float operated valves shall be manufactured from the materials given in Table 1 with, if required, the addition of not more than 15 % of the manufacturer's own clean reworked material complying with this Part of BS 1212. No other reworked material shall be used.

6.2 Seats from plastics shall be manufactured from new nylon, acetal polymer or polypropylene copolymer of a hardness not less than D75 (Shore) when measured in accordance with BS 2782-3:Method 365B.

6.3 Backplates and backplate plungers from plastics shall be manufactured from new acetal polymer with a hardness not less than D80 (Shore) when measured in accordance with BS 2782-3:Method 365B.

7 Castings

Cast components shall be sound and shall comply with BS 6615.

8 Hot stampings

Hot stamped components shall be sound and shall comply with BS 3885.

9 Mouldings

Mouldings shall be sound and free from flash.

10 Machining

All machining shall be carried out so that parts comply with the dimensions specified in this Part of BS 1212 and are correctly aligned when assembled. All machined surfaces shall be free from burrs.

Table 1 — Materials

Component		Material/material specification															
		Castings				Rod for hot pressings, forging and machining						Stainless steel	Rubbers	Fibres	Plastics		
		BS 1400 SCB1 or SCB3 (see note 1)	BS 1400 DCB3	BS 1400 PCB1	BS 1400 LG1 or LG2	BS 2872 CZ122	BS 2872 CZ129	BS 2874 CZ121	BS 2874 CZ132	BS 2874 PB102	BS 1400 G1	BS 970-1 304515	Synthetics of 60 to 70 IRHD (see BS 903-A26)	BS 3964 or BS 5292	Acetal polymer	Nylon	Polypropylene copolymer
Body		X	X	X	X	X		X	X								
Backplate		X	X	X	X	X			X						X		
Backplate nut		X	X	X	X	X		X	X								
Diaphragm												X					
Lever		X	X	X	X	X	X	X	X								
Backplate plunger (see note 2)		X	X	X	X	X		X	X			X			See 6.3		
Float adjuster		X	X	X	X	X	X	X	X							X	
Thumb screw		X	X	X	X	X	X	X	X								
Seat										X	X				X	X	X
															See 6.2		
Joint ring	Inlet shank to seat												X	X	X	X	X
	Inlet adaptor to inlet elbow												X	X	X	X	X
Inlet shank		X	X	X	X	X		X	X								
Body coupling nut		X	X	X	X	X		X	X								
Integral flange backnut type (a)	size ½	X	X	X	X	X		X	X						X	X	
	size ¾	X	X	X	X	X		X	X								
Spigoted backnut type (b)	size ½	X	X	X	X	X		X	X						X	X	
	size ¾	X	X	X	X	X		X	X								
Fixed flange backnut type (c)	size ½	X	X	X	X	X		X	X						X	X	
	size ¾	X	X	X	X	X		X	X								
Inlet elbow		X	X	X	X	X		X	X								
Inlet adaptor		X	X	X	X	X		X	X								
Split cotter pin		See clause 24															
Discharge arrangement		See 25.6															
NOTE 1 Copper content may be reduced to 62 % for SCB1 and SCB3.																	
NOTE 2 Brass backplate plungers may be electroplated with nickel or tin.																	