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TEST CODE SHEET

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1. **TYPE OF TEST(S)**

Dimensional

2. **WATER REGULATIONS REQUIREMENTS FOR FITTINGS**

Schedule 2

15-(1) .... every water system shall contain an adequate device or devices for preventing backflow of fluid from any appliance, fitting or process from occurring.

3. **BRITISH STANDARDS OR WATER SPECIFICATION, DEEMED TO SATISFY WATER REGULATIONS REQUIREMENTS**

3.1 Fittings with 'kitemarks' which are deemed to satisfy the requirements of regulations are listed in the directory.

4. **TEST PROCEDURE**

4.1 Tests applicable to the following:-

**TYPE AC AIR GAP WITH SINGLE SUBMERGED FEED (INCORPORATING AIR INLET AND OVERFLOW)**  
up to and including DN 250  
Devices for the prevention of contamination by backflow.

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(A) **TYPE AC AIR GAP WITH SINGLE SUBMERGED FEED (INCORPORATING AIR INLET AND OVERFLOW)**  
(Derived from prEN 164105)  
up to and including DN 250

TEST METHOD

i. **SCOPE**

This procedure specifies the characteristics of type AC air gaps with submerged feed incorporating air inlet and an overflow from a container for inlet or feed pipes of nominal size up to and including DN 250. Air gaps that comply with the requirements of this procedure are devices for protection of potable water installations from pollution fluid risk 3. In addition to factory assembled products this procedure includes requirements for site constructed air gaps.

The products specified are for single feed only and suitable for water temperatures up to and including 65°C and occasional temperatures up to and including 95°C. However in some instances the maximum operating temperature may be limited to 40°C and should be marked accordingly.

ii. **DEFINITIONS**

For the purpose of this procedure the following definitions apply.

ii.i **Air Gap family 'A' type AC - Air gap with single submerged feed (incorporating air inlet and overflow)**

An air gap suitable for fluids only, no solids or sludges, placed permanently and vertically between the lowest point of the air inlet orifice in the feed pipe and critical water level at which the container overflows.

ii.ii **Spill-over Level**

The point at which the water first starts to overflow into the overflow pipe (invert).

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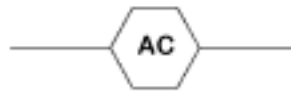
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**ii.iii Critical Water Level**

The level (h) above the spill-over level two seconds after the inlet water has ceased to flow.

**ii.iv Graphic symbol**



**FIG 1**

**iii. DESIGNATION**

The air gap family 'A' type AC is designated by the following:

- the reference to this standard.
- its Family, its Type.
- the DN of the feed pipe.
- example of the designation:
- air gap Family A Type AC DN15 TSN AC-01.

**iv. MATERIALS**

**iv.i Materials choice**

The manufacturer shall state the type of materials chosen in his technical and commercial documents.

The surface condition of materials in contact with water shall be chosen to be the least inclined to scale.

The materials used upstream, and including the atmospheric outlet opening, must comply with the relevant Standards, quality requirements and criteria for drinking water installations. BS6920 (i.e. may not release substances in concentration which can be harmful to the users of the drinking water installation).

The choice of other material is discretionary but shall be suitable for the intended use of the appliance (temperature, corrosion, scale, etc).

There are no special requirements concerning the materials used downstream of the atmospheric outlet opening provided they do not have any harmful effect on the upstream part.

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**v. DESIGN**

**v.i General**

The protection assembly comprises three parts integral with one another:

- a water inlet device.
- a receiving vessel (container) with overflow.
- an air port inlet.

The air port inlet shall be above the invert of the overflow.

**v.ii Water Inlet Device**

- v.ii.i Every float-operated valve or other device which controls the inflow of water to a storage cistern shall be securely and rigidly fixed to that cistern.
- v.ii.ii Every feed pipe supplying water to such a valve or other device shall be fixed in its position to prevent it from moving or buckling.

**5. ACCEPTANCE CRITERIA**

**5.1 Distance of air gap (see Figure 2)**

The clearance 'A' measured between the lowest external point of the air port inlet and the critical water level shall be at least equal to twice the internal diameter of the inlet pipe and never less than 20 mm.

$$A \geq 2D \text{ but not less than } 20 \text{ mm.}$$

**5.2 Overflow**

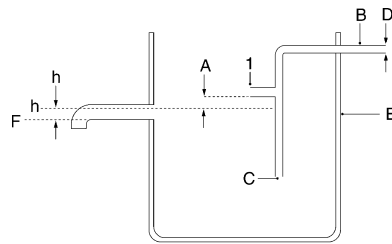
**5.2.1 General**

The overflow shall be so designed as to be capable of providing an appropriate air gap between the lowest point of the air port inlet and the critical water level, from a maximum water level caused by an inflow.

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**FIG 2**

- A = Air Gap
- B = Feed Pipe
- C = Feed Orifice
- D = Internal Diameter of Feed Pipe
- E = Receiving Vessel
- F = Spill-over Level
- h = Critical Water Level (h)
- 1 = Air Inlet