

## **19004: Type AG air gap – air break to drain**

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### *Introduction*

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The WRAS Approvals guidance and conditions set out below have been developed to be used when assessing products submitted for WRAS approval only.

### *Ambiguity*

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WRAS approvals considers that there is ambiguity in the Regulators' Specification for Backflow Prevention and the test code sheet 2212.3 for a Type AG air gap relating to the overflow arrangements for an air break to drain. In particular, it is not clear:

- a) *if the overflow arrangements must incorporate an air break to drain in all circumstances as EN standard requirements must also be met and EN standards exclude this requirement in the case of WCs;*
- b) *the exact definition and meaning of the phrases 'air break to drain'; 'an air break prior to a connection to drain'; and 'all air gaps to drain arrangements' and what the significance of the different language used is;*
- c) *in the case of a WC which does not have a physical air gap from the overflow before it drains, the pan is open to atmosphere and water coming back from the drain would spill over the toilet pan rather enter the cistern. Although this mechanism is not a formal backflow prevention arrangement, it might be considered as providing an equivalent level of protection compared to an EN 1717/TCS 2212.10 air break to drain arrangement and in the case of WCs only, they may not present a material risk of backflow.*

*and what is permitted under the terms of the specification (the **Ambiguity**). For the purposes of obtaining a WRAS Approval, WRAS will want to see evidence that the assessors' recommendations have been met (the **Suggested Approach**)*

The Suggested Approach has not been endorsed by the water companies or the courts, and they could adopt a different approach to the Ambiguity. For this reason, WRAS cannot guarantee that enforcement action will not be taken by water companies under the water fittings regulations, or that the courts will hold that your product is compliant in this regard. No reliance should be placed on the Suggested Approach for the purposes of designing or producing any product, and you should rely on your own legal advice. WRAS, accordingly, accepts no liability for loss of goodwill, business, revenue or profits, anticipated savings or wasted expenditure (whether reasonably foreseeable or not) or indirect or consequential loss arising from or in connection with the Ambiguity or the Suggested Approach.

## **The Regulations**

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Schedule 2 Paragraph 15 states “...every water system shall contain an adequate device or devices for preventing backflow of fluid from any appliance, fitting or process from occurring.”

## **Regulators Specification for Backflow Prevention**

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S15.2 states “Type AG – Airgap arrangement with minimum size circular overflow means a non-mechanical backflow prevention arrangement of water fittings with an air gap, together with an overflow, the size of which is determined by measure or a vacuum test”

## **The Test Code Sheet Requirements**

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Test code sheet 2212.3 for a Type AG states:

### **“v.i General**

*The protection assembly comprises four parts integral with one another:*

- a water inlet device.
- a receiving vessel.
- an overflow.
- air break to drain.

### **v.iii Overflow Arrangements**

*v.iii.i The overflow shall be capable of draining off the maximum inlet flow.*

*v.iii.ii Shall not be less than 19mm internal diameter.*

*v.iii.iii Overflow arrangements must include an air break prior to a connection to drain. An air break to drain must conform to EN requirements.*

*NOTE The length of the overflow before the air break to drain must not be of such a length that it will cause air gap ‘AG’ to be violated. All air gaps to drain arrangements shall be visible.”*

Test code sheet 2212.3 requires assessment of the air break for conformity to EN requirements. The two EN standards that are applicable for consideration when assessing overflow arrangements for type AG airgaps and their air breaks to drain are;

BS EN 1717:2000 Protection against pollution of potable water installations and general requirements of devices to prevent pollution by backflow, which states:

#### *“5.5 Air break to drain*

*All apparatus connected to a potable water network and including a water draining device has to be provided with an air break before its discharge to the drainage system.*

*This air gap shall satisfy the prescriptions described in clause 9. Otherwise the fluid in the apparatus has to be considered as fluid Category 5”.*

#### *“9 Air break to drain*

*The air breaks to drain shall be realised by a full disconnection or by air inlets”.*

## Type AG air gap – air break to drain

BS EN 14623:2005 Devices to prevent pollution by backflow of potable water – Air gaps with minimum circular overflow (verified by test or measurement) – Family A, type G which states:

### 7.1 General

*The protection assembly comprises four parts:*

- water inlet device;
- receiving vessel (container);
- overflow;
- air break to drain.

### 7.3 Overflow arrangements

*The overflow arrangements shall not be less than 19 mm internal diameter.*

*The overflow arrangements shall include an air break prior to any connection to a drain.*

*An air break to drain shall comply with the requirements of EN 1717, excluding W.C's.*

## Intention

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WRAS approvals have assumed that the intention of the air break to drain is to prevent contamination of the supply network from the drain occurring.

WRAS approvals have assumed that the test code sheet did not reference a specific standard, as it was intended that all relevant current EN standard requirements should be considered when assessing conformity. A relevant EN standard includes a specific exclusion for an air break to drain requirement when the type AG airgap arrangement is used in WCs.

## Suggested Approach

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**Scope:** WRAS approvals shall apply this WRAS Approvals guidance and conditions to the assessment of all applications for approvals that claim to be capable of forming part of a type AG airgap arrangement.

- 1) Assessors shall consider if the application for assessment of a type AG air gap is part of a WC approval application.
  - a. If part of a WC application no evidence of an air break to drain shall be required
  - b. If the application for approval is for any device other than a WC, then evidence of an air break to drain will be required.
  - c. If evidence of an air break to drain is required and not provided then the assessment will be made that not all aspects of a type AG airgap have been provided and an IRN will be applied to the product.

The IRN will state;

*“To comply with the regulations the overflow arrangements must include an air break prior to a connection to drain. The air break to drain must conform to EN requirements. This applies to all AG air gap arrangements with the exception of where the installation forms part of a WC”.*