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WRAS TEST & ACCEPTANCE CRITERIA

Issue No: 7
Date of issue: November 2000

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TEST CODE SHEET

1. TYPE OF TEST(S)

WC flush volume and water seal depth.

2. WATER REGULATIONS REQUIREMENTS FOR FITTINGS

Schedule 2

25 (1) Subject to the following provisions of this paragraph

(a) every water closet pan shall be supplied with water from a flushing cistern, pressure flushing cistern or pressure flushing valve, and shall be so made and installed that after normal use its contents can be cleared effectively by a single flush, or, where the installation is designed to receive flushes of different volumes, by the largest those flushes;

(b) no pressure flushing valve shall be installed
 (i) in a house, or
 (ii) in any building not being a house where a minimum flow rate of 1.2 litres per second cannot be achieved at the appliance.

(c) where a pressure flushing valve is connected to a supply pipe or distributing pipe, the flushing arrangement shall incorporate a backflow prevention device consisting of a permanently vented pipe interrupter located not less than 300mm above the spillover level of the WC pan or urinal;

(d) no flushing device installed for use with a WC pan shall give a single flush exceeding 6 litres;

(e) no flushing device designed to give flushes of different volumes shall have a lesser flush exceeding two-thirds of the largest flush volume;

(f) every flushing cistern, other than a pressure flushing cistern, shall be clearly marked internally with an indelible line to show the intended volume of flush, together with an indication of that volume.

(g) a flushing cistern designed to give flushes of different volumes
 (i) shall have a readily discernible method of actuating the flush of different volumes; and
 (ii) shall have instructions, clearly and permanently marked on the cistern or displayed nearby, for operating it to obtain the different volumes of flush

(h) every flushing cistern, not being a pressure flushing cistern or a urinal cistern, shall be fitted with a warning pipe or with a no less effective device;

(i) every urinal that is cleared by water after use shall be supplied with water from a flushing device which
 (ii) in the case of a flushing cistern, is filled at a rate suitable for the installation;
 (iii) in all cases, is designed or adapted to supply no more water than is necessary for effective flow over the internal surface of the urinal and for replacement of the fluid in the trap; and

(j) except in the case of a urinal which is flushed manually, or which is flushed automatically by electronic means after use, every pipe which supplies water to a flushing cistern or trough used for flushing a urinal shall be fitted with an isolating valve controlled by a time switch and a lockable isolating valve, or with some other equally effective automatic device for regulating the periods during which the cistern may fill.

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(2) Every water closet, and every flushing device designed for use with a water closet, shall comply with a specification approved by the regulator for the purposes of this schedule.

(3) The requirements of the sub-paragraphs (1) and (2) do not apply where faeces or urine are disposed of through an appliance that does not solely use fluid to remove the contents.

(4) The requirement in sub-paragraph (1)(I) shall be deemed to satisfied

(a) in the case of an automatically operated flushing cistern servicing urinals which is filled with water at a rate not exceeding

(i) 10 litres per hour for a cistern serving a single urinal;

(ii) 7.5 litres per hour per urinal bowl or stall, or as the case may be, for each 700mm width of urinal slab, for a cistern serving two or more urinals;

(b) in the case of a manually or automatically operated pressure flushing valve used for a flushing urinals which delivers not more than 1.5 litres per bowl or position each time the device is operated.

(5) Until 1 January 2001 paragraphs (1) (a) and (d) shall have effect as if they provided as follows

(a) every water closet pan shall be supplied with water from a flushing cistern or trough of the valveless type which incorporates siphonic apparatus;

(b) no flushing device installed for use with a WC pan shall give a single flush exceeding 7.5 litres.

(6) Notwithstanding sub-paragraph 1(d), a flushing cistern installed before 1st July 1999 may be replaced by a cistern which delivers a similar volume and which may be either single flush or dual flush; but a single flush cistern may not be so replaced by a double flush cistern.

(7) In this paragraph

‘PRESSURE FLUSHING CISTERN’ means a WC Flushing device that utilises the pressure of water within the cistern supply pipe to compress air and increase the pressure of water available for flushing a WC pan.

‘PRESSURE FLUSHING VALVE’ means a self closing valve supplied with water directly from a supply pipe or a distributing pipe which when activated will discharge a pre determined flush volume.

‘TRAP’ means a pipe fitting or part of a sanitary appliance, that retains liquid to prevent the passage of foul air; and

‘WARNING PIPE’ means an overflow pipe whose outlet is located in a position where the discharge of water can be readily seen.

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

3.1 None.

4. TEST PROCEDURE

4.1 Tests are applicable to the following fittings:

ALL WC CISTERNS AND PANS SUPPLIED AS SUITES, which require to be tested to the regulators specification.

(A) ALL WC CISTERNS AND PANS SUPPLIED AS SUITES, which require to be tested to the regulators specification.

4.2 Apparatus

- a) cistern, complete with fitments including flushpipe and cover, installed in accordance with the manufacturers instructions, on a firm, flat, vertical surface.
- b) measuring vessel capable of collecting the flush volume.
- c) water supply controlled by a stop valve.
- d) water seal depth measuring device.

4.3 Procedure

1. Set the dual flush control or setting if provided, to full flush volume in accordance with the manufacturers instructions. Connect the water supply to the flushing cistern and fill to the marked water line. Operate the flushing mechanism three times, completing three flush cycles. Fill the cistern to the water line. Shut off the water supply, unless essential for normal operation of the flushing device.

Note. Where a water supply is essential for the normal operation of the device maintain the supply at a hydraulic pressure of (1.5 ± 0.1) bar or the minimum required to operate the device, whichever is the greater.

2. Operate the flushing device and collect the water in the measuring vessel or on a calibrated weigh scales or platform. Record the volume of water collected. Repeat the procedure a further four times.
3. Record the water trap seal depth on 2 occasions at random by measuring the height from the invert of the trappage back plate to the surface of the water.
4. Reset the dual flush control or setting, if provided, to the reduced flush volume and repeat the procedure in (4.3.2) 5 times and repeat the procedure in (4.3.3)

4.4 Expression of results

Measure the volume of water collected in the measuring vessel or calibrated weigh scales or platform after each flush cycle, and record the compliance or any failure to comply with the requirements. Record also any failure of the trap seal depth to conform with the requirements.

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5. **ACCEPTANCE CRITERIA**

Flush Volume.

FULL FLUSH.

When tested as described in the test procedure with any adjustable flushing device set to deliver the maximum flush volume, the measured discharge shall on no occasion exceed 6 litres.

REDUCED FLUSH.

When tested as described in the test procedure with any adjustable flushing device set to deliver a reduced flush volume, the measured discharge shall on no occasion exceed two thirds of the full flush volume.

Water Seal Depth.

When tested twice at random as described in 4.3.2 the water seal depth shall be no less than 50 mm on either occasion. If any alternative trap seal device is utilised, a no less effective comparable seal shall be in operation.

Note: Should the sample fail to comply with the acceptance criteria then a further two identical WC cisterns or suites shall be requested and both shall be tested to the completed Regulator's test criteria for WC's and both shall comply with all acceptance criteria's.