

SCHEDULE 2

REQUIREMENTS FOR WATER FITTINGS

Interpretation

1. In this Schedule—

“backflow” means flow upstream, that is in a direction contrary to the intended normal direction of flow, within or from a water fitting;

“cistern” means a fixed container for holding water at atmospheric pressure;

“combined feed and expansion cistern” means a cistern for supplying cold water to a hot water system without a separate expansion cistern;

“combined temperature and pressure relief valve” means a valve capable of performing the function of both a temperature relief valve and a pressure relief valve;

“contamination” includes any reduction in chemical or biological quality of water due to a change in temperature or the introduction of polluting substances;

“distributing pipe” means any pipe (other than a warning, overflow or flushing pipe) conveying water from a storage cistern, or from hot water apparatus supplied from a cistern and under pressure from that cistern;

“expansion cistern” or “expansion vessel” means a cistern or vessel connected to a water heating system which accommodates the increase in volume of water in the system when the water is heated from cold;

“expansion valve” means a pressure-activated valve designed to release expansion water from an unvented water heating system;

“flushing cistern” means a cistern provided with valve or device for controlling the discharge of the stored water into a water closet pan or urinal;

“overflow pipe” means a pipe from a cistern in which water flows only when the water level in the cistern exceeds a predetermined level;

“pressure relief valve” means a pressure-activated valve which opens automatically at a specified pressure to discharge fluid;

“primary circuit” means an assembly of water fittings in which water circulates between a boiler or other source of heat and a primary heat exchange inside a hot water storage vessel, and includes any space heating system;

“secondary circuit” means an assembly of water fittings in which water circulates in supply pipes or distributing pipes of a hot water storage system;

“secondary system” means an assembly of water fittings comprising the cold feed pipe, any hot water storage vessel, water heater and pipework from which hot water is conveyed to all points of draw-off;

“servicing valve” means a valve for shutting off for the purpose of maintenance or service the flow of water in a pipe connected to a water fitting;

“stopvalve” means a valve, other than a servicing valve, used for shutting off the flow of water in a pipe;

“storage cistern” means a cistern for storing water for subsequent use, not being a flushing cistern;

“temperature relief valve” means a valve which opens automatically at a specified temperature to discharge fluid;

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“terminal fitting” means a water outlet device; and

“vent pipe” means a pipe open to the atmosphere which exposes the system to atmospheric pressure at its boundary.

Materials and substances in contact with water

2.—(1) Subject to sub-paragraph (2) below, no material or substance, either alone or in combination with any other material or substance or with the contents of any water fitting of which it forms a part, which causes or is likely to cause contamination of water shall be used in the construction, installation, renewal, repair or replacement of any water fitting which conveys or receives, or may convey or receive, water supplied for domestic or food production purposes.

(2) This requirement does not apply to a water fitting downstream of a terminal fitting supplying wholesome water where—

- (a) the use to which the water downstream is put does not require wholesome water; and
- (b) a suitable arrangement or device to prevent backflow is installed.

Requirements for water fittings

3. Every water fitting shall—

- (a) be immune to or protected from corrosion by galvanic action or by any other process which is likely to result in contamination or waste of water; and
- (b) be constructed of materials of such strength and thickness as to resist damage from any external load, vibration, stress or settlement, pressure surges, or temperature fluctuation to which it is likely to be subjected.

4. Every water fitting shall—

- (a) be watertight;
- (b) be so constructed and installed as to—
 - (i) prevent ingress by contaminants, and
 - (ii) inhibit damage by freezing or any other cause;
- (c) be so installed as to minimise the risk of permeation by, or deterioration from contact with, any substance which may cause contamination; and
- (d) be adequately supported.

5. Every water fitting shall be capable of withstanding an internal water pressure not less than 1½ times the maximum pressure to which that fitting is designed to be subjected in operation.

6. No water fitting shall be installed, connected or used which is likely to have a detrimental effect on the quality or pressure of water in a water main or other pipe of a water undertaker [^{F1}or [^{F2}water supply licensee]].

Textual Amendments

F1 Words in Sch. 2 para. 6 inserted (1.12.2005) by [The Water Act 2003 \(Consequential and Supplementary Provisions\) Regulations 2005 \(S.I. 2005/2035\)](#), regs. 1(4), **8(7)(a)**

F2 Words in Sch. 2 substituted (31.3.2017) by [The Water Act 2014 \(Consequential Amendments etc.\) Order 2017 \(S.I. 2017/506\)](#), arts. 1(1), **17**

7.—(1) No water fitting shall be embedded in any wall or solid floor.

(2) No fitting which is designed to be operated or maintained, whether manually or electronically, or which consists of a joint, shall be a concealed water fitting.

(3) Any concealed water fitting or mechanical backflow prevention device, not being a terminal fitting, shall be made of gunmetal, or another material resistant to dezincification.

(4) Any water fitting laid below ground level shall have a depth of cover sufficient to prevent water freezing in the fitting.

(5) In this paragraph "concealed water fitting" means a water fitting which—

- (a) is installed below ground;
- (b) passes through or under any wall, footing or foundation;
- (c) is enclosed in any chase or duct; or
- (d) is in any other position which is inaccessible or renders access difficult.

Water system design and installation

8. No water fitting shall be installed in such a position, or pass through such surroundings, that it is likely to cause contamination or damage to the material of the fitting or the contamination of water supplied by the water undertaker [^{F3}or [^{F2}water supply licensee]].

Textual Amendments

F2 Words in Sch. 2 substituted (31.3.2017) by [The Water Act 2014 \(Consequential Amendments etc.\) Order 2017 \(S.I. 2017/506\)](#), arts. 1(1), **17**

F3 Words in Sch. 2 para. 8 inserted (1.12.2005) by [The Water Act 2003 \(Consequential and Supplementary Provisions\) Regulations 2005 \(S.I. 2005/2035\)](#), regs. 1(4), **8(7)(b)**

9. Any pipe supplying cold water for domestic purposes to any tap shall be so installed that, so far as is reasonably practicable, the water is not warmed above 25°C.

10.—(1) Every supply pipe or distributing pipe providing water to separate premises shall be fitted with a stopvalve conveniently located to enable the supply to those premises to be shut off without shutting off the supply to any other premises.

(2) Where a supply pipe or distributing pipe provides water in common to two or more premises, it shall be fitted with a stopvalve to which each occupier of those premises has access.

11. [^{F4}Water systems] shall be capable of being drained down and be fitted with an adequate number of servicing valves and drain taps so as to minimize the discharge of water when water fittings are maintained or replaced. A sufficient number of stopvalves shall be installed for isolating parts of the pipework.

Textual Amendments

F4 Words in Sch. 2 para. 11 substituted (1.12.2005) by [The Water Act 2003 \(Consequential and Supplementary Provisions\) Regulations 2005 \(S.I. 2005/2035\)](#), regs. 1(4), **8(7)(c)**

12.—(1) The water system shall be capable of withstanding an internal water pressure not less than 1½ times the maximum pressure to which the installation or relevant part is designed to be subjected in operation ("the test pressure").

(2) This requirement shall be deemed to be satisfied—

- (a) in the case of a water system that does not include a pipe made of plastics, where—

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- (i) the whole system is subjected to the test pressure by pumping, after which the test continues for one hour without further pumping;
 - (ii) the pressure in the system is maintained for one hour; and
 - (iii) there is no visible leakage throughout the test;
- (b) in any other case, where either of the following tests is satisfied—

TEST A	TEST B
(i) the whole system is subjected to the test pressure by pumping for 30 minutes, after which the test continues for 90 minutes without further pumping;	(i) the whole system is subjected to the test pressure by pumping for 30 minutes, after which the pressure is noted and the test continues for 150 minutes without further pumping;
(ii) the pressure is reduced to one third of the test pressure after 30 minutes;	(ii) the drop in pressure is less than 0.6 bar (60kPa) after the following 30 minutes, or 0.8 bar (80kPa) after the following 150 minutes; and
(iii) the pressure does not drop below one third of the test pressure over the following 90 minutes; and	(iii) there is no visible leakage throughout the test.
(iv) there is no visible leakage throughout the test.	

13. Every water system shall be tested, flushed and where necessary disinfected before it is first used.

Prevention of cross connection to unwholesome water

14.—(1) Any water fitting conveying—

- (a) rain water, recycled water or any fluid other than water supplied by a water undertaker [F5 or F2 water supply licensee]; or
- (b) any fluid that is not wholesome water;

shall be clearly identified so as to be easily distinguished from any supply pipe or distributing pipe.

(2) No supply pipe, distributing pipe or pump delivery pipe drawing water from a supply pipe or distributing pipe shall convey, or be connected so that it can convey, any fluid falling within subparagraph (1) [F6 unless a device for preventing backflow is installed in accordance with paragraph 15.]

Textual Amendments

- F2** Words in Sch. 2 substituted (31.3.2017) by [The Water Act 2014 \(Consequential Amendments etc.\) Order 2017 \(S.I. 2017/506\)](#), arts. 1(1), 17
- F5** Words in Sch. 2 para. 14(1)(a) inserted (1.12.2005) by [The Water Act 2003 \(Consequential and Supplementary Provisions\) Regulations 2005 \(S.I. 2005/2035\)](#), regs. 1(4), 8(7)(d)
- F6** Words in Sch. 2 para. 14(2) inserted (1.7.1999) by [The Water Supply \(Water Fittings\) \(Amendment\) Regulations 1999 \(S.I. 1999/1506\)](#), regs. 1, 2(5)(a)

Backflow prevention

15.—(1) Subject to the following provisions of this paragraph, every water system shall contain an adequate device or devices for preventing backflow of fluid from any appliance, fitting or process from occurring.

(2) Paragraph (1) does not apply to—

- (a) a water heater where the expanded water is permitted to flow back into a supply pipe, or
- (b) a vented water storage vessel supplied from a storage cistern,

where the temperature of the water in the supply pipe or the cistern does not exceed 25°C.

(3) The device used to prevent backflow shall be appropriate to the highest applicable fluid category to which the fitting is subject downstream before the next such device.

(4) Backflow prevention shall be provided on any supply pipe or distributing pipe—

- (a) where it is necessary to prevent backflow between separately occupied premises, or
- (b) where the water undertaker has given notice for the purposes of this Schedule that such prevention is needed for the whole or part of any premises.

(5) A backflow prevention device is adequate for the purposes of paragraph (1) if it is in accordance with a specification approved by the regulator for the purposes of this Schedule.

Cold water services

16.—(1) Every pipe supplying water connected to a storage cistern shall be fitted with an effective adjustable valve capable of shutting off the inflow of water at a suitable level below the overflowing level of the cistern.

(2) Every inlet to a storage cistern, combined feed and expansion cistern, WC flushing cistern or urinal flushing cistern shall be fitted with a servicing valve on the inlet pipe adjacent to the cistern.

(3) Every storage cistern, except one supplying water to the primary circuit of a heating system, shall be fitted with a servicing valve on the outlet pipe.

(4) Every storage cistern shall be fitted with—

- (a) an overflow pipe, with a suitable means of warning of an impending overflow, which excludes insects;
- (b) a cover positioned so as to exclude light and insects; and
- (c) thermal insulation to minimize freezing or undue warming.

(5) Every storage cistern shall be so installed as to minimize the risk of contamination of stored water. The cistern shall be of an appropriate size, and the pipe connections to the cistern shall be so positioned, as to allow free circulation and to prevent areas of stagnant water from developing.

Hot water services

17.—(1) Every unvented water heater, not being an instantaneous water heater with a capacity not greater than 15 litres, and every secondary coil contained in a primary system shall—

- (a) be fitted with [F7 a temperature control device and either a temperature relief valve or a combined temperature and pressure relief valve]; or
- (b) be capable of accommodating expansion within the secondary hot water system.

(2) An expansion valve shall be fitted with provision to ensure that water is discharged in a correct manner in the event of a malfunction of the expansion vessel or system.

Textual Amendments

- F7** Words in Sch. 2 para. 17(1)(a) substituted (1.7.1999) by [The Water Supply \(Water Fittings\) \(Amendment\) Regulations 1999 \(S.I. 1999/1506\)](#), regs. 1, **2(5)(b)**

18. Appropriate vent pipes, temperature control devices and combined temperature pressure and relief valves shall be provided to prevent the temperature of the water within a secondary hot water system from exceeding 100°C.

19. Discharges from temperature relief valves, combined temperature pressure and relief valves and expansion valves shall be made in a safe and conspicuous manner.

20.—(1) No vent pipe from a primary circuit shall determine over a storage cistern containing wholesome water for domestic supply or for supplying water to a secondary system.

(2) No vent pipe from a secondary circuit shall terminate over any combined feed and expansion cistern connection to a primary circuit.

21. Every expansion cistern or expansion vessel, and every cold water combined feed and expansion cistern connected to a primary circuit, shall be such as to accommodate any expansion water from that circuit during normal operation.

22.—(1) Every expansion valve, temperature relief valve or combined temperature and pressure relief valve connected to any fitting or appliance shall close automatically after a discharge of water.

(2) Every expansion valve shall—

- (a) be fitted on the supply pipe close to the hot water vessel and without any intervening valves; and
- (b) only discharge water when subjected to a water pressure of not less than 0.5 bar (50 kPa) above the pressure to which the hot water vessel is, or is likely to be, subjected in normal operation.

23.—(1) A temperature relief valve or combined temperature and pressure relief valve shall be provided on every unvented hot water storage vessel with a capacity greater than 15 litres.

(2) the valve shall—

- (a) be located directly on the vessel in an appropriate location, and have a sufficient discharge capacity, to ensure that the temperature of the stored water does not exceed 100°C; and
- (b) only discharge water at below its operating temperature when subjected to a pressure of not less than 0.5 bar (50 kPa) in excess of the greater of the following—
 - (i) the maximum working pressure in the vessel in which it is fitted, or
 - (ii) the operating pressure of the expansion valve.

(3) In this paragraph “unvented hot water storage vessel” means a hot water storage vessel that does not have a vent pipe to the atmosphere.

24. No supply pipe or secondary circuit shall be permanently connected to a closed circuit for filling a heating system unless it incorporates a backflow prevention device in accordance with a specification approved by the regulator for the purposes of this schedule.

WC's, flushing devices and urinals

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 of water, or, where the installation is designed to receive flushes of different volumes, by the largest of 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 device designed to give flushes of different volumes—
 - (i) shall have a readily discernible method of actuating the flush at 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—
 - (i) in the case of a flushing cistern, is filled at a rate suitable for the installation;
 - (ii) 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.
- (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 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 be 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;

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- (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 flushing urinals which delivers not more than 1.5 litres per bowl or position each time the device is operated.
- (5) Until 1st January 2001 paragraphs (1)(a) and (d) shall have effect as if they provided as follows—
- (“ every water closet pan shall be supplied with water from a flushing cistern or trough of the valveless type which incorporates siphonic apparatus;”
 - (“ 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 dual 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 readily be seen.

Baths, sinks, showers and taps

- 26.** All premises supplied with water for domestic purposes shall have at least one tap conveniently situated for the drawing of drinking water.
- 27.** A drinking water tap shall be supplied with water from—
- (a) a supply pipe;
 - (b) a pump delivery pipe drawing water from a supply pipe; or
 - (c) a distributing pipe drawing water exclusively from a storage cistern supplying wholesome water.
- 28.—(1)** Subject to paragraph (2), every bath, wash basin, sink or similar appliance shall be provided with a watertight and readily accessible plug or other device capable of closing the waste outlet.
- (2) This requirement does not apply to—
- (a) an appliance where the only taps provided are spray taps;
 - (b) a washing trough or wash basin whose waste outlet is incapable of accepting a plug and to which water is delivered at a rate not exceeding 0.06 litres per second exclusively from a fitting designed or adapted for that purpose;
 - (c) a wash basin or washing trough fitted with self-closing taps;
 - (d) a shower bath or shower tray;
 - (e) a drinking water fountain or similar facility; or

- (f) an appliance which is used in medical, dental or veterinary premises and is designed or adapted for use with an unplugged outlet.

Washing machines, dishwashers and other appliances

29.—(1) Subject to paragraph (2), clothes washing machines, clothes washer-driers and dishwashers shall be economical in the use of water.

(2) The requirements of this paragraph shall be deemed to be satisfied in the case of machines having a water consumption per cycle of not greater than the following—

- (a) for domestic horizontal axis washing machines, 27 litres per kilogram of washload for a standard 60°C cotton cycle;
- (b) for domestic washer-driers, 48 litres per kilogram of washload for a standard 60°C cotton cycle;
- (c) for domestic dishwashers, 4.5 litres per place setting.

Water for outside use

30. Every pipe which conveys water to a drinking vessel for animals or poultry shall be fitted with—

- (a) a float-operated valve, or some other no less effective device to control the inflow of water, which is—
 - (i) protected from damage and contamination; and
 - (ii) prevents contamination of the water supply; and
- (b) a stopvalve or servicing valve as appropriate.

31. Every pond, fountain or pool shall have an impervious lining or membrane to prevent the leakage or seepage of water.

Changes to legislation:

There are currently no known outstanding effects for the The Water Supply (Water Fittings) Regulations 1999.