Installation Requirements List

AMENDMENT No. 42 April 2017

As the incorrect installation of water fittings may result in contravention of Water Byelaws or Regulations the following INSTALLATION REQUIREMENTS & NOTES (IRNs) are intended as guides to Water Suppliers, Installers and their customers. The IRN numbers appear at the top of each entry in the Fittings section of the Directory

Installation Requirements and Notes under the Water Supply (Water Fittings) Regulations 1999 in England and Wales, the Water Supply (Water Fittings) (Scotland) Byelaws 2014 and the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009.

The IRNs listed in this section all begin with the letter R to denote Regulations compliance.

- ## IRN R000

  No Installation Requirements or Notes.

- ## IRN R001

  See text of entry for Installation Requirements or Notes.

- ## IRN R005

  This tap or combination tap assembly has a Type AUK2 air gap and is therefore only suitable for installation in domestic premises or in other premises to protect against a backflow risk up to a Fluid Category 3, unless additional backflow protection for the higher risk is included in the installation.

- ## IRN R006

  If this tap or combination tap is installed so that its base is no lower than the spillover level of the receiving vessel (for example, a sink or washbasin), a Type AUK3 air gap is

achieved which permits installation of the tap in any premises where backflow protection up to Fluid Category 5 is required at the tap.

- ## IRN R007

  Connecting hoses to be installed where light is excluded.

- ## IRN R008

  This fitting is to be installed where light is excluded.

- ## IRN R009

  Inlet supply hoses to be installed where light is excluded

- ## IRN R010

  Water supplies shall be at reasonably balanced pressures from a common source (e.g. hot and cold supplies both from the same storage or both from a supply pipe). Where the fitting is supplied from unbalanced supplies (e.g. hot and cold supplies from separate sources) an **'Approved' single check valve** or some other no less effective backflow prevention device shall be fitted immediately upstream of both hot and cold water inlets.

- ## IRN R011

  This combination tap assembly is not considered a bi-flow tap as the hot & cold water mixes as it discharges to atmosphere from the spout, therefore IRN R010 applies.

- ## IRN R012

  This product is to be installed in the vertical orientation.

- ## IRN R020

  Multiple inlet fittings installed in domestic premises and supplied from unbalanced supplies (e/g hot and cold supplies from separate sources) shall be installed in accordance with IRN R010 and with a double check valve or some other no less effective backflow prevention device fitted at the connection to the shower hose pipe.

  A single check valve or vacuum breaker may be fitted in place of the double check valve if single check valves are fitted at each inlet to the fitting.

  Alternatively the fitting shall be supplied in accordance with IRN R040 unless the shower head is constrained above the spill-over level of the bath, wash basin or shower tray.

- ## IRN R030

  Multiple inlet fittings installed to protect against a backflow risk up to a Fluid Category 3, incorporating a self-cancelling diverter acceptable as a backflow prevention device (HC) and having an AUK2 or AUK3 air gap, shall be installed in accordance with IRN R010.

  Multiple inlet fittings installed to protect against a backflow risk up to a Fluid Category 5, shall be installed in accordance with IRN R010 and the shower hose shall be constrained as indicated in IRN R040. An AUK3 air gap must also be achieved at the spout outlet.

- ## IRN R040

  Schedule 2-15 (1)

  The fitting, or outlet supplied by the fitting, shall be installed so that its outlet discharges above the spill-over level of any fixed appliance as indicated below: -

For backflow protection in domestic premises or installations up to, and including, Fluid Category 3.

1. Size of tap or combination fitting.	2. Vertical distance of outlet above spill-over level.
1. not exceeding ½in	20mm
2. exceeding ½in but not exceeding ¾in	25mm
3. exceeding ¾in	70mm

If the fitting cannot be installed as indicated in the table it shall be installed: -

a) with an approved double check valve assembly or some other no less effective backflow prevention device immediately upstream of the inlet; or

b) so that it draws water by gravity only from a cistern, or cylinder having a permanently open vent pipe, and the distributing pipe supplies no other fittings (other than a draining tap) at a lower level.

For backflow protection in premises or installations up to, and including Fluid Category 5.

The vertical distance of the outlet above the spill-over level shall be not less than 20 mm or twice the diameter of the inlet pipe to the fitting, whichever is the greater.

If the fitting cannot be installed as indicated it shall be installed with a backflow prevention arrangement suitable for the Fluid Category.

Taps incorporating a hose union outlet

If the outlet of the tap assembly is designed to accommodate the attachment of a flexible hose and therefore potentially compromise the required AUK3 air gap, alternative Fluid Category 5 backflow protection is required, as the AUK3 air gap provided by the tap would not apply.

- IRN R050

Taps and combination fittings discharging in a non-domestic location and any appliances in premises where a higher level of protection is required, such as appliances in hospitals or other health care premises require a Type AUK3 tap gap.

- ## IRN R060

Where in existing house installations a hose pipe is to be used from an existing hose union tap located outside a house and which is not provided with backflow protection, either:

a. the existing hose union tap should be provided with a double check valve (Type EC or ED) located inside the building; or

b. the tap should be replaced with a hose union tap that incorporates a double check valve (type (HUK1); or

c. a hose union backflow prevention (Type HA) or a double check valve (Type EC or ED) should be continuously fitted to the outlet of the tap; or

d. is legally installed in any premises.

- ## IRN R070

The Water Supply (Water Fittings) Regulations 1999, the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009, and the Water Supply (Water Fittings) (scotland) Byelaws 2014, preclude the connection of rim feed or ascending spray type bidets or bidets with hand - held spray attachments directly to any supply pipe.

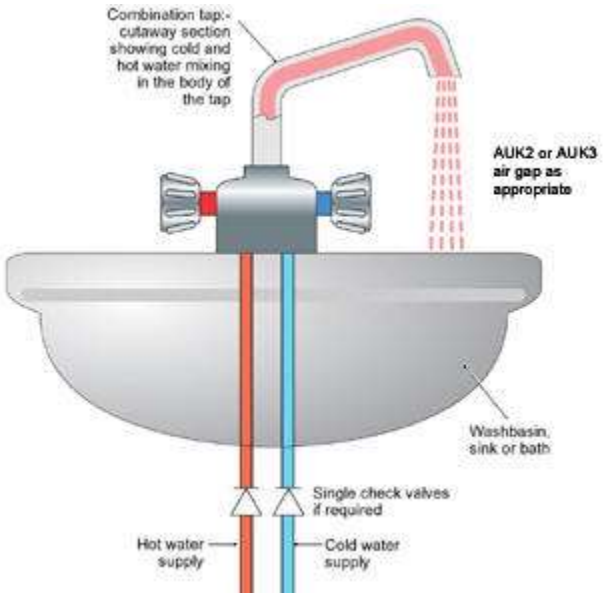
BIDETS WITH OVER-RIM SUPPLY ARRANGEMENTS

(a) Bidets installed in domestic locations of the over-rim type, that have no ascending spray and/or flexible hose may be supplied with cold and hot water through single or combination tap assemblies from either a supply pipe or a distributing pipe providing that a Type AUK2 air gap is provided between the outlet of the water fitting and the spillover level of the bidet and shall also comply with (c) below.

(b) Bidets installed in premises other than domestic locations of the over-rim type, that have no ascending spray and/or flexible hose where a higher fluid category of risk may be

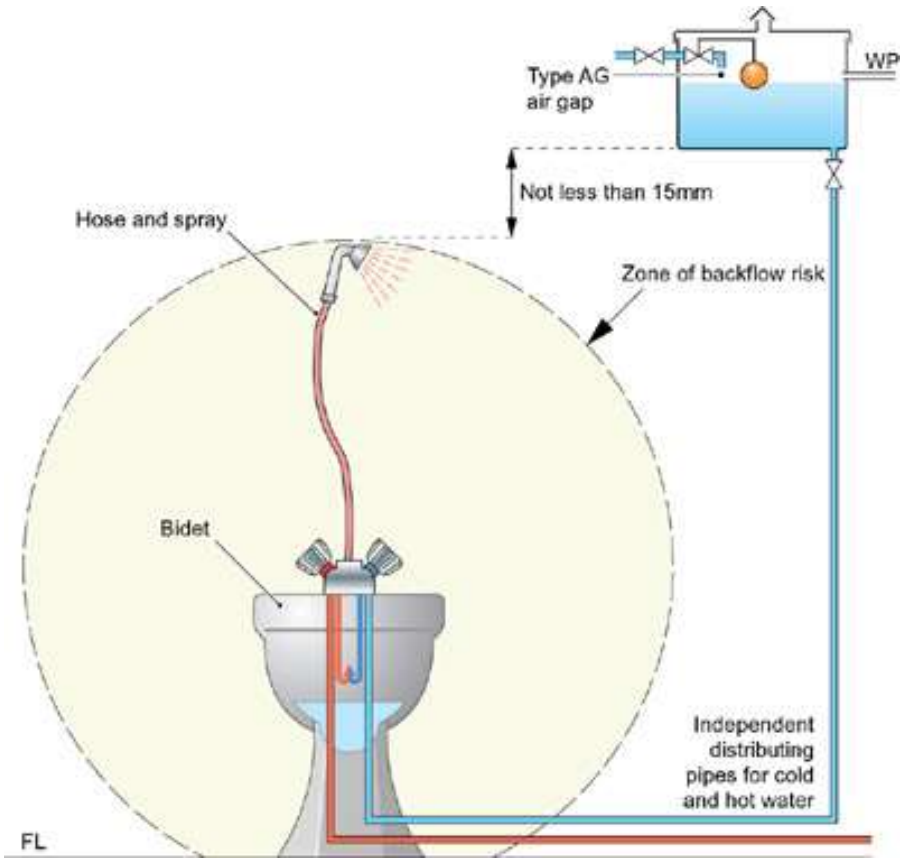
present, may be supplied with cold and hot water through single or combination tap assemblies from either a supply pipe or a distributing pipe providing that a Type AUK3 air gap is provided between the outlet of the water fitting and the spillover level of the bidet as (a) above and shall also comply with (c) below.

(c) In the case of a bidet equipped with a single outlet (single flow) mixing tap, shall also be installed in accordance with IRN R010. See Diagram 1 below.



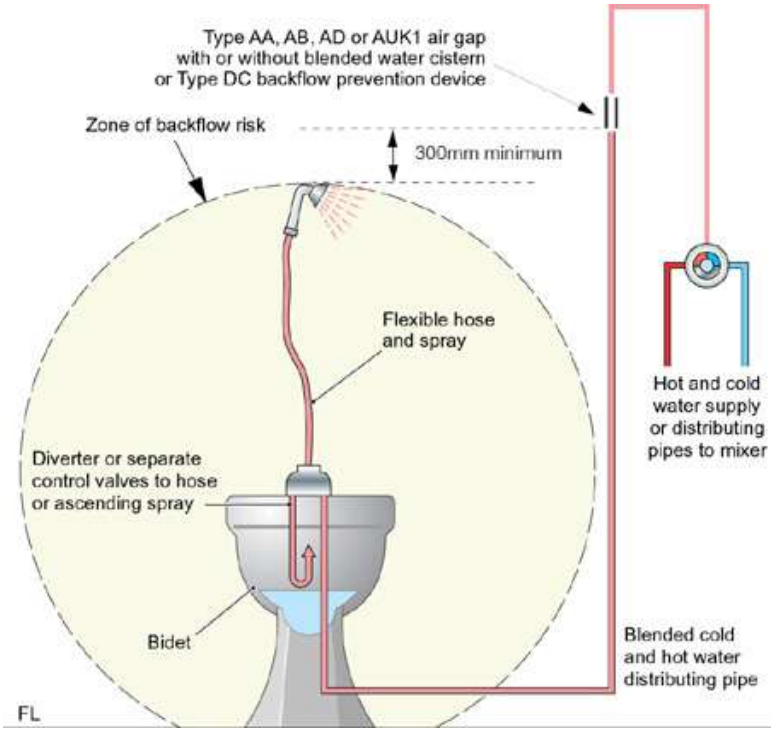
BIDETS (INCLUDING WCs ADAPTED AS BIDETS) WITH SUBMERGED WATER INLETS AND/OR FLEXIBLE HOSE WITH SPRAY OR JET HANDSET FITTINGS

Bidets, including WCs adapted as bidets, incorporating an ascending spray inlet or utilising a flexible hose or an arrangement with a spray or jet, are a fluid category 5 risk in that the ascending spray inlet could be contaminated with urine or other matter and the spray or jet handset could be deposited in the bidet or WC. Bidets of this type must not be supplied with water from a cold or hot water supply pipe or a common distributing pipe. The zone of backflow risk is shown and the highest part of this zone must be not less than 15mm below any cistern serving the bidet. See Diagram 2 below.



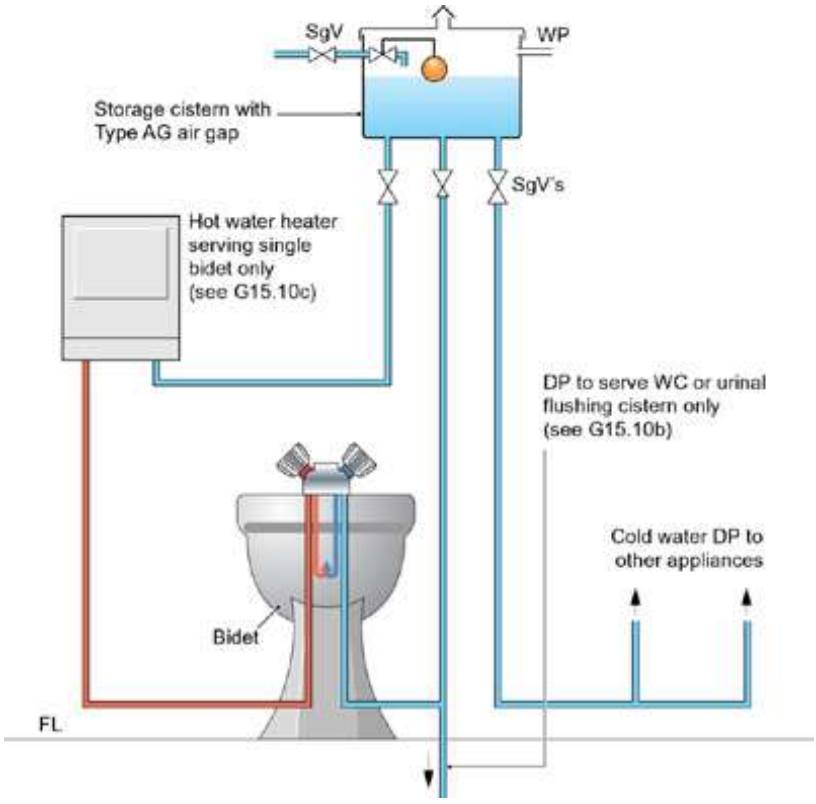
Bidets of this type may:

a. be supplied with cold and/or hot water through Type AA, AB, AD or AUK1 backflow prevention arrangement or type DC device serving the bidet only. See Diagram 3: or Type AA, AB, AD or AUK1 air gap with or without blended water cistern or type DC backflow prevention device.



b. be supplied with cold water from an independent distributing pipe serving the bidet only, or a common distributing pipe serving the bidet and which may also serve a WC or urinal flushing cistern at a lower level. See Diagram 4; or

c. be supplied with hot water from a water heater, which is supplied from an independent distributing pipe, that serves the bidet only. See Diagram 4: or

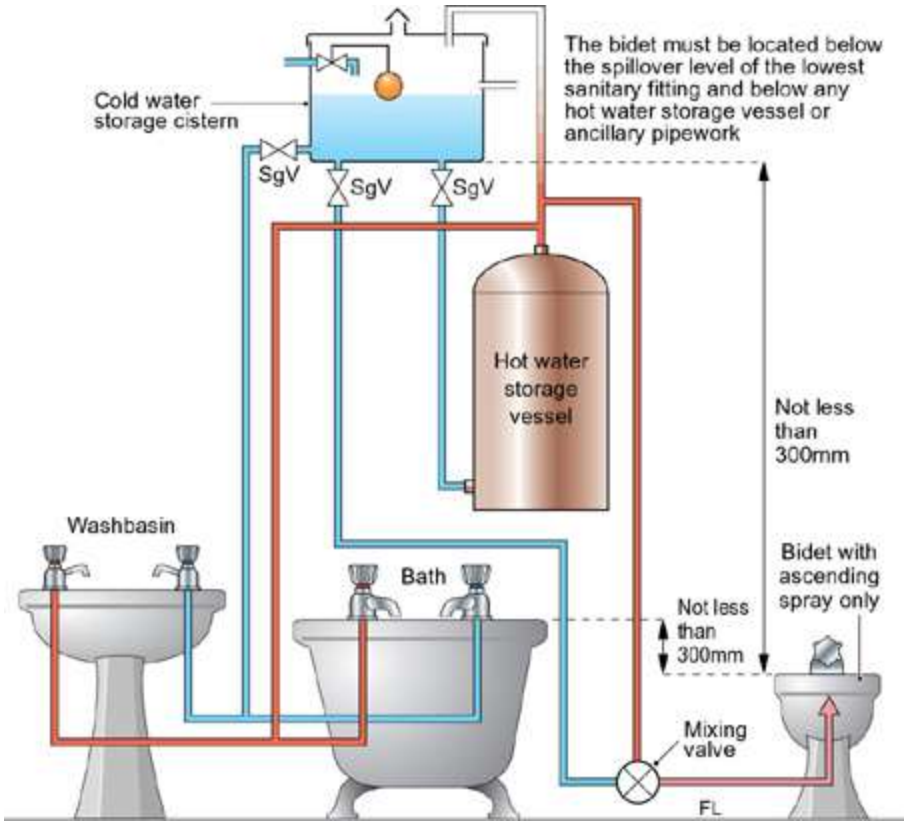


d. where the bidet is at a lower elevation than any other outlets or appliances, be supplied with water from a common cold and/or hot water vented distribution pipe providing that;

(i) the elevation of the spillover level of the bidet, if there is no flexible hose; or

(ii) the elevation of the spray outlet, with the hose extended vertically above the spillover level of the bidet,

whichever is the highest, is not less than 300mm below the point of connection with the distributing pipe which serves other appliances or outlets. See Diagram 5.



The method of supplying water to an ascending spray and/or hose and spray bidet as illustrated in Diagram 3 and which is described in the formal guidance, is difficult to achieve in practice. The air gap should be located above the fully extended hose and spray, or zone of backflow risk, and this height may need to be increased to provide sufficient water pressure, to overcome friction loss in the pipes and fittings, in order to operate the ascending spray and hose spray effectively. This method of supplying blended water to a bidet involves complicated control methods as the control of water to the bidet itself has to be linked with the control of water flow, and temperature, upstream of the air gap, blended water cistern or DC device.

- ## IRN R075

Schedule 2.25(4)

(4) The requirement in sub-paragraph (1)(i) of Schedule 2.25(4) shall be deemed to be satisfied if, (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 flushing urinals which delivers not more than 1.5 litres per bowl or position each time the device is operated.

- ## IRN R080

Fittings incorporating fluid category 3 backflow protection shall be supplied by gravity from a cistern having family ‘A’ backflow protection by means of a distributing pipe which does not supply any other fittings at a lower level.

- ## IRN R090

Supply(ies) shall be via fluid category 5 backflow protection or by gravity from a cistern incorporating family ‘A’ backflow protection by distributing pipe(s) to which no fittings for other purposes are connected.

- ## IRN R100

Supply(ies) shall be from storage.

- ## IRN R110

For above ground use, cold water services only, unless indicated otherwise in the description of entry.

- ## IRN R111

  Must be installed and maintained in accordance with BS 8551:2015.

- ## IRN R120

  The fitting is to be so installed as to be readily accessible for examination, test, maintenance, replacement or operation.

- ## IRN R130

  All outlet connections to cisterns, which are arranged to receive thermal expansion water, shall be fitted both internally and externally with suitably protected support washers.

- ## IRN R140

  Sealed primary circuits and /or secondary hot water systems shall incorporate a means for accommodating the thermal expansion of water to prevent any discharge from the circuit and/or system except in an emergency situation.

- ## IRN R150

  An ‘Approved’ single check valve or some other no less effective backflow prevention device providing backflow prevention protection to at least fluid category two shall be fitted at the point of connection(s) between the water supply and the fitting or appliance.

- ## IRN R155

  An ‘Approved’ single check valve must be fitted as close as possible to the T-off supplying the device.

- ## IRN R160

  A compliant double check valve or some other no less effective device providing backflow prevention protection to at least fluid category three shall be fitted at the point of connection(s) between the water supply and the fitting or appliance.

  Where the double check valve is for use with products that incorporate water injected with CO_2 gas all metal parts in contact with the water passing through it must be constructed from chrome nickel stainless steel.

- ## IRN R165

  Where the DC pipe interrupter is used, it must be installed so that the lowest point of the air aperture is not less than 150mm above the spillover level of the receiving receptacle, and have no valve, flow restrictor or tap on its outlet.

- ## IRN R170

  Water Undertakers cannot be responsible for the quality of water passed from these fittings.

- ## IRN R171

  Schedule 2-15 (1)

  Water Undertakers cannot be responsible for the quality of ice passed from these fittings.

- ## IRN R190

  The supply to the storage cistern shall be discharged via a Type AA air gap.

- ## IRN R200

  For closed circuit use only.

- ## IRN R210

  The supply to this fitting/appliance shall be by means of a metered supply only.

- ## IRN R220

  Solder alloys containing lead shall not be used in connection with systems which convey or receive water supplied for domestic purposes.

- ## IRN R230

  Where installed for domestic purposes in commercial premises, or elsewhere with the written consent of the undertakers, the fitting shall be installed with a backflow prevention device adequate for the class of risk.

- ## IRN R240

  This cistern is not suitable for storing water for domestic purposes.

- ## IRN R250

  No vent, warning or overflow pipe from a primary feed cistern shall convey water to any cistern supplying water to a secondary system from which water may be drawn for domestic purposes.

- ## IRN R260

  The fitting is not suitable for conveying hot water.

- ## IRN R270

  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 (s).

- ## IRN R280

  A servicing valve shall be installed on the supply to the fitting in a readily accessible location.

- ## IRN R290

  Schedule 2: 26 & 27

  In accordance with schedule 2 paragraph 27 of the Water Supply (Water Fittings) Regulations 1999 in England and Wales, the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009, and the Water Supply (Water Fittings) (Scotland) Byelaws 2014, a drinking water tap shall be installed upstream of this fitting. However, if it can be demonstrated that the water once it has passed through this water fitting remains wholesome and meets national standards, water suppliers may not require the installation of a drinking water tap upstream of this water fitting.

- ## IRN R300

  In some water supply areas it is advisable that copper cylinders and tanks be fitted with aluminium protector rods to promote resistance to corrosion. For further guidance consult your local water undertaker.

- ## IRN R310

  In some water supply areas require aluminium covers to be protected by a ‘Approved’ paint or lacquer. For further guidance consult your local water undertaker

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- ## IRN R320

  In some areas of water supply only galvanised Grade A mild steel cisterns will be accepted. For further guidance consult your local water undertaker

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- ## IRN R330

  In some water supply areas galvanising is required to be coated with a ‘Approved’ protective paint. For further guidance consult your local water undertaker

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- ## IRN R340

  In some water supply areas galvanising is not accepted as a suitable means of internal protection for fittings. For further guidance consult your local water undertaker

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- ## IRN R350

  Float-controlled valves or equivalent inlet devices should be securely and rigidly attached to the cistern and installed so that the valve closes when the level of the water is not less than 25 mm below the overflowing level of the cistern. Where the cistern is fitted with an approved alternative to a warning pipe, such as an indicator instrument or visual or audible alarm, the inlet valve is to close when the water level is not less that 50 mm below the overflowing level of the cistern

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- ## IRN R360

  Domestic unvented primary circuits may be filled or replenished by means of a temporary connection between the primary circuit and the supply pipe. An ‘Approved’ double check valve shall be installed at the point of connection to the supply pipe. A permanent connection between the primary circuit and the supply pipe may be made via a CA backflow prevention device or some other no less effective backflow prevention device.

- ## IRN R365

  This has been withdrawn as of November 2015.

- ## IRN R370

  All fittings manufactured from duplex (alpha-beta) brass are unacceptable for underground use, for backflow prevention devices and for certain products specified by the water undertaker

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- ## IRN R380

  Transient pressures may be evident from noise generated within the system as ‘water hammer’ - emanating from pipes as a result of rapid closure of a draw off tap or from rapid oscillation of a float operated valve.

- ## IRN R390

  An inlet strainer or line strainer shall be provided at the inlet.

- ## IRN R400

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.

- ## IRN R410

1. 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.

2. 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.

3. No flushing device installed for use with a WC pan shall give a single flush exceeding 6 litres.

- ## IRN R415

Notification should be given in writing of the proposed installation of this fitting to the local Water Supplier prior to its installation. The fitting shall not be installed until consent is given by the Water Supplier in line with Regulation 5 of the Water Supply (Water Fittings) Regulations 1999 or the Water Supply (Water Fittings) Regulations (Northern Ireland) 2009, or Byelaw 5 of the Water Supply (Water Fittings) (Scotland) Byelaws 2014.

- ## IRN R425

  Having obtained consent from the water supplier for the installation of a BA device (RPZ valve) as required by Regulation 5 of the Water Supply (Water Fittings) Regulations 1999; the installation of the BA device (RPZ valve) and any associated fittings must be installed in accordance with the water suppliers “Approved Installation Method” AIM-08-01. A copy of the AIM can be found on the WRAS website at the following link: AIM-08-01.

- ## IRN R430

  All water fittings located outside the thermal envelope, or those outside the building should be located and installed in such a manner that will ensure protection from freezing, undue warming or damage by other means.

- ## IRN R435

  When this appliance is fitted externally, the outlet of the tap should be protected against damage and contamination from environmental factors (pathogens).

- ## IRN R440

  Supply(ies) shall be from storage, unless with the undertaker’s consent.

- ## IRN R450

  This machine has not been tested to the consumption requirements of the regulations and therefore it may not be suitable for installation for domestic use.

- ## IRN R460

  This machine has no in built backflow protection and should therefore be installed in accordance with IGN 9-04-01 following an assessment of the risk involved.

- ## IRN R470

  This machine has in built backflow protection to fluid category 3 but where installation may have a higher degree of risk an assessment may be undertaken and IGN 9-04-01 applied.

- ## IRN R480

  This machine has in built backflow protection to fluid category 4 but where installation may have a higher degree of risk an assessment may be undertaken and IGN 9-04-01 applied.

- ## IRN R490

  Because this WC cistern incorporates an internal warning pipe discharging into the WC pan and a float operated inlet valve of a compact type, an inlet or in-line strainer must be fitted up-stream of the valve.

- ## IRN R500

  Cold water feed tank not be used to supply other fittings

- ## IRN R510

  This unit must discharge via a backflow protection device which gives fluid category 5 protection, for example a type AA or AB air gap or an air break to drain that complies with BS EN 1717

- ## IRN R511

  The discharge from the drain valve must be via a backflow protection device which gives fluid category 5 protection, for example a type AA or AB air gap or an air break to drain that complies with BS EN 1717.

- ## IRN R515

  Where a flexible hose assembly installed upstream of a terminal fitting, (tap, valve, pipework etc.) is intended to accommodate repeated movement of the terminal fitting, it shall be installed so as to minimise any stress that may cause premature wear or failure of the hose due to either the initial installation or any foreseeable movement of the hose and fitting in use.

- ## IRN R520

  To ensure that the backflow prevention device in this appliance can operate correctly by allowing water to discharge freely from the weir, overflow or spillover positioned flush with the casing of the appliance, a permanent spacer must be provided to ensure the appliance cannot be installed tightly against any surface (e.g. wall or other appliance) in a way which interferes with the free discharge of water.

- ## IRN R525

  An ‘Approved’ device providing backflow prevention protection to at least fluid category four shall be fitted at every point of connection between the water supply and the fitting or appliance.

- ## IRN R530

  Expansion vessels should be installed in the vertical orientation and located so that the length of the connecting pipework is kept to a minimum

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- IRN R535

  The length of connecting pipework to this fitting should be kept to a minimum in order to prevent stagnation.

Source : https://www.wras.co.uk/approvals/resources_for_applicants/fittings/installation_requirements/