
PS – 277

ISOLATION VALVES FOR AIR VALVES AND HYDRANTS – WATER SUPPLY

277.1 SCOPE

This specification applies to isolation valves for use with air valves or spring hydrants.

NSW Fire Brigade flanged hose adaptors, rated PN 16 or less and drilled to AS 2129, Class C (but not Class F) may be connected to isolation valves conforming to this specification.

277.2 REQUIREMENTS

See Annexure.

277.3 QUALITY ASSURANCE

- (a) Products shall be designed and manufactured under cover of an ISO 9001 management system, certified by a JASANZ accredited certification body as conforming to the Annexure.
- (b) The manufacturer shall provide a declaration of conformance to the Annexure (see Appendix A).

ANNEXURE TO PS – 277 REQUIREMENTS

1. GENERAL

Pending development of a WSAA or product standard, this Sydney Water specification applies to isolation valves for use with air valves or spring hydrants.

NSW Fire Brigade flanged hose adaptors, rated PN 16 or less and drilled to AS 2129, Class C (but not Class F) may be connected to isolation valves conforming to this specification.

1.1 Inlet Flange

The inlet flange of the isolator shall:

- (a) Conform to AS 4087, PN 16;
- (b) Enable the isolator to connect to either DN 80 or DN 100 flanged off-takes from the host water main, which such off-take flanges conform to AS 4087, PN 16.

NOTE:

Conformance to this clause deems compatibility with AS 2280 PN 16 and AS 2129 Classes C and D flanges.

1.2 Outlet Flange

The outlet flange of the isolator shall be DN 80, conforming to AS 4087, PN 16.

NOTE:

Conformance to this clause deems compatibility with hydrants conforming to AS 3952.

2. MATERIALS

2.1 Components

Materials shall comply with the requirements of AS/NZS 3952 for “functionally equivalent” components.

2.2 Contamination of Water

Component materials in contact with drinking water shall comply with AS 4020.

2.3 Protective Coating

Internal and external surfaces of the isolator shall be coated with a polymeric coating in accordance with AS/NZS 4158.

3. DESIGN

3.1 Direction of Closure

Isolators shall have clockwise closure.

3.2 Flow

The body design shall provide a minimum flow of 20 L/s when tested in accordance with Clauses 4.1 and 4.2.

3.3 Stem Sealing

A means shall be provided for sealing the stem under working conditions and under the hydrostatic test pressure. All seals shall be capable of being replaced with the main under pressure and the valve fully closed.

3.4 Stem Caps

Isolators shall be fitted with a stem cap as detailed in AS/NZS 2638.

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4. TYPE TESTING

4.1 Preliminary Torque Application

Prior to performing type tests specified in Clauses 4.2 and 4.3, with the isolator in the closed position, a torque of 300 Nm shall be gradually applied in the closing direction and held for not less than 10 seconds. Following this, with the isolator in the fully open position a torque of 300 Nm shall be gradually applied to the isolator stem in the opening direction and held for not less than 10 seconds.

4.2 Flow Test

Following the preliminary torque application, the flow test shall be performed on the isolation valve with a spring hydrant conforming to AS 3952 attached to the outlet. With a hydrant fitted to the outlet flange and its dome depressed to a maximum of 25 mm, under a constant pressure of 200 kPa \pm 10 kPa at the isolator inlet, the flow shall be not less than 20 L/s.

4.3 Body Design Pressure Test

With the isolation valve set up for free end testing, the isolator valve open and the outlet flange blanked, the isolation valve shall withstand a pressure of 4000 kPa for not less than 1 minute without evidence of plastic deformation or distortion of the body.

5. PRODUCTION TESTS

NOTE:

The preliminary torque application (Clause 4.1) shall not be applied prior to conducting production tests.

5.1 Body Hydrostatic Test

Each valve shall be tested according to the method specified by Clause 4.3, except that:

- (a) The test pressure shall be 2400 kPa.
- (b) No leakage shall be evident (including from pressure containing joints).

5.2 Valve Seat Test

One valve from each production batch shall be tested as follows:

With the outlet flange free to the atmosphere and the valve seat in the closed position, under a pressure of 1600 kPa applied to the inlet side for not less than 1 minute, no leakage shall be visible.

6. MARKING

6.1 Body Markings

Each valve shall have the following information and bosses cast on the valve body:

- (a) Manufacturer's name or mark.
- (b) Year of manufacture.
- (c) Pressure class.
- (d) Body material designation.
- (e) Identification number (a reference used by the manufacturer allowing identification for the supply of spares).

The lettering shall be legible block type letters not less than 12.5 mm high and projecting not less than 3 mm.

6.2 Stem Cap Marking

Each step cap shall be marked 'CLOSE' with an arrow to indicate the direction of closure, i.e. clockwise.

**APPENDIX A
SUPPLIER'S DECLARATION OF CONFORMITY OF
ISOLATION VALVES TO PS – 277**

I hereby declare that as an authorised representative of

.....
(Company name)

.....
(Address, of the manufacturer)

that:

(a) Isolation valves supplied against orders for product conforming to specification PS-277, will conform in all respects with the requirements of the specification.

And

(b) Supporting documentation, including design documents and drawings, records of type tests, batch release tests and inspections are available for inspection by Sydney Water or its nominated agents and by third party certification bodies.

And

(c) Such documents will be available for not less than three years from the date of supply of product to the market.

Signed at:

.....(Place and date of issue)

By:

.....(Name)

.....(Position)