

## TROUBLESHOOTING DOCUMENT

### DISPOSITION OF PROBLEM

Shower Mixer (Valve) leaking after being hydrostatically tested

### CAUSES OF PROBLEM

The pressure testing of new pipework is a mandatory test that is done under pressure with all points capped off with either a temporary cap or with the finished fitting itself e.g., a basin mixer or shower mixer. *As per AS/NZS 3500.1:2015 Clause 18.3.1 "Water services shall not show any leakage when subjected to a hydrostatic pressure of 1500 kPa for a period of not less than 30 min."*

The shower mixer feeds an outlet that is setup for either an overhead shower or a slide shower and the pipework from the shower mixer to this outlet must be also tested, to test this short piece of pipework the shower mixer must be isolated. If the shower is not isolated but opened to allow water to go through to the outlet point, there will be a severe amount of back pressure (up to 3 times the pressure in the pipework) due to the water having nowhere else to go but back through the shower mixer (Valve). This back pressure can damage the ceramic cartridge within the shower mixer and if damaged will leak from that point and void the warranty.

Charged lines with only as little as 300Kpa of pressure will still cause back pressure damage to the shower valve if the valve is opened with the outlet point capped

### REMEDIES

When hydrostatically testing pipework with the shower valves Installed the valve must be isolated when testing the pipework from the valve to the shower outlet point. **The shower valve must remain in the closed position to eliminate damage from any back pressure.** All Robertson shower Valves have a warning label attached to the valve stating that the valve must not be hydrostatically tested. Also, as part of *G12 figure 18 Paragraph 8.0.1 and AS/ZNS3500.1:2015 clause 18.3.1: Hydrostatic Test* it states that any appliance or other equipment that could be damaged due to pressure testing should be **isolated** before testing.

1. Keep shower valve Cartridge in the closed position
2. If testing the overhead shower pipework, the shower valve must be isolated and bypassed to test this line

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AS/NZS3500.1:2015 Clause 18.3.1: Hydrostatic Test

## 18.3 TESTING

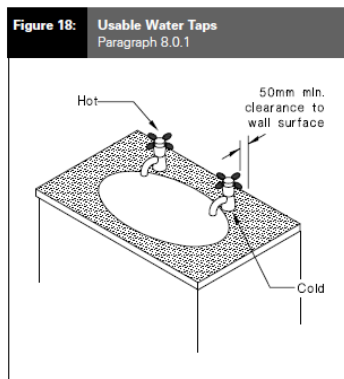
### 18.3.1 Hydrostatic test

Water services shall not show any leakage when subjected to a hydrostatic pressure of 1500 kPa for a period of not less than 30 min.

The test shall be performed on installed piping prior to burial or concealment. In the case of pipe systems with elastomeric seals, the piping shall be backfilled leaving the joints exposed until completion of the test.

#### NOTES:

- 1 When a pressure test is carried out, it may be necessary to disconnect and cap the water service to isolate it from the water main, fixtures and appliances, which may be damaged by the test pressure applied.
- 2 Fire services are subject to individual testing by some network utility operators at a higher pressure and for varied periods of time.



G12 figure 18 paragraph 8.0.1

#### 7.5 Watertightness

7.5.1 The water supply system shall be tested to ensure watertightness. An acceptable testing method is to:

- a) Subject the hot and cold system to a pressure of 1500 kPa for a period of not less than 15 minutes, and
- b) Inspect the system to ensure that there are no leaks.

#### COMMENT:

1. Testing should be carried out before concealing pipework behind interior linings, flooring or within concrete, or before backfilling trenches.
2. All fixtures, appliances, water tanks, storage water heaters and other equipment, which may be damaged during pressure testing, should be isolated before testing.

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7.5.2 Another acceptable solution for testing uPVC water piping systems is given in Section 9 of NZS 7643.

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