

Pr9087 - Pressure Testing of Water Mains Work Instruction

Document Owner	Manager Field Services
References	WSAA Water Supply Code of Australia, WSA 03 – 2011 V 3.1 Unitywater Dewatering – Construction/Commissioning/Reservoir Work Instruction

1. Purpose

This work instruction details the process of pressure testing water mains. Pressure testing of mains must be carried out to:

- Reveal the occurrence of faults in the laying and assembly procedures and test the installed structural integrity of the pipeline, and
- Determine that the pipeline will sustain a pressure greater than its design pressure without leakage.

2. Scope

This instruction applies to newly constructed water mains forming part of the Unitywater water supply network. It applies to all pipe materials, diameters, pipe classes and lengths. The process detailed in this instruction must be followed by all persons undertaking pressure testing of Unitywater water mains.

3. Definitions

The definitions used in this work instruction are:

Term	Meaning
NATA	National Association of Testing Authorities, Australia
Hydrostatic testing	Pressure testing with water as the test medium
WSAA	Water Services Association of Australia

4. Instruction

Once the Constructor has completed construction of the main or the section of main to be pressure tested, the following steps must be undertaken:

1. Ensure all permanent and temporary thrust blocks are adequately cured;
2. Assemble pressure testing plant on site (ensure appropriate pump sizing);
3. Confirm test gauge certification is current and gauge is undamaged;
4. Connect test equipment to pipeline via air valve tee, hydrant or purpose - designed tapping (preferably at lowest point);
5. Slowly fill the pipeline with potable water ensuring all air is bled from the pipeline at high points (fill from lowest point where possible);

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6. Test the pipeline or pipeline segment in accordance with WSA 03, Section 19.4 and record:
 - o Test section pipe information (length, diameter, material, class),
 - o test pressure,
 - o maximum allowable leakage rate, and
 - o test log information (time, pressure, required make up water);

The test pressure shall be 1200KPa unless specified otherwise.

7. Slowly depressurise pipeline upon successful completion of pressure test;
8. Drain pipeline to remove testing equipment and to prepare for final connections if necessary (discharge shall be in accordance with Unitywater Dewatering – Construction/Commissioning/Reservoir Work Instruction); and
9. Disconnect testing equipment and reinstate any equipment removed for testing purposes.

Pressure testing against valves should be avoided where possible. Where pressure testing against a valve cannot be avoided, suitability of the valve for pressure testing purposes is to be investigated and must be approved by the Unitywater Project Manager prior to testing.

A Hydrostatic Test Certificate must be produced on completion of the pressure test and submitted to the Unitywater Project Manager for approval. Unless otherwise permitted by the superintendent, testing must be arranged to be undertaken by a NATA accredited organisation that holds current listing for the relevant test.

5. Procedure Flowchart

Not applicable.