



Hydrostatic Testing of Fire Hydrant Systems

This document summarises the standards, methodology and acceptance criteria for conducting commissioning and maintenance hydrostatic tests for on-site fire hydrant systems.

Commissioning Testing to AS2419.1:2005

Intent	To document that the pipework has been installed without leaks
Test Pressure	1,700kPa (or 1.5 × the working pressure if it is greater) measured from the highest hydrant (AS2419.1-2005, Clause 10.2)
Duration	Minimum of 2 hours (AS2419.1-2005, Clause 10.2) 2 hours for steel and PVC (Blue Brute) (AS2566.2-2002, Appendix M4 or M8) 5 hours for PE and PP (Red Line) (AS2566.2-2002, Appendix M5, M7 or M8)
Methodology	AS2566.2 – Buried flexible pipelines
When	During commissioning. After installation, modifications, and repairs in accordance with AS2419.1-2005, Clause 10.1
Acceptance Criteria	<p>Steel and PVC (Blue Brute) Pipes</p> <p>The allowable make-up water rate to compensate for air being forced into solution, is given in AS2566.2:2002, Cl 6.3.4.1, Equation 6(1) as</p> $Q \leq 0.14LDH$ <p>L is the test length in km, D in the nominal diameter in meters, H is the average test head in meters, Q is in L/hr.</p> <p>PE and PP (Red Line) Pipes</p> <p>PE and PP pipes are elastic and creep under pressure. The allowable make-up rate is given by AS2566.2:2002, Appendix M5, Equation M(2) as</p> $V_2 \leq 0.55V_1 + Q$ <p>V_2 is the allowable makeup water at hour 5 and V_1 is the allowable makeup water at hour 3.</p> <p>Acceptance criteria for pipelines less than 200m in length where all joints have been left exposed during the testing can be replaced with a visual inspection after 2 hours if there is no “significant” pressure loss.</p> <p>Alternative allowable leakage to NFPA 3, 2015, Chapter 3 = (1.89L/hr/100 joints) + (0.03L/25mm ValveØ/hr/metal seated valve) + (9L/hr/standpipe installed)</p>
Note	Air should be vented as thoroughly as possible for safety and to prevent excessing leakage



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Testing the Water'

Maintenance testing to AS1851:2012

Intent	To ensure the system will not fail under fire brigade operational strains
Test Pressure	1.5 × system working pressure (AS1851-2012, Table 4.4.4, 4.3)
Duration	Not specified in AS1851. NFPA 25, Cl 6.3.2.1 specifies a test pressure of 1,380kPa for 2 hours
When	Every 5 years where a booster is fitted (AS1851-2012, Table 4.4.4, 4.3)
Leakage Rate	Not specified. "The intent [of the hydrostatic test] is to ascertain whether the system retains its integrity under fire conditions. Minimum leakage existing only under test pressure is not cause for repair." (NFPA 25, Annex A A.6.3.2.2)
Note	Air should be vented as thoroughly as possible for safety and to prevent excessing leakage

For further details visit <http://www.HydrantTesting.com.au>.

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