PVC-U PRESSURE PIPE

TESTING

FIELD TESTING

The test procedures of clause 6.3.3 of AS/NZS 2566.2 "Buried flexible pipelines, Part 2: Installation" are recommended for PVC-U. The recommended test pressure should not be less than the maximum design pressure and at the same time not exceed 1.25 times the pressure rating at any point along the pipeline.

Before carrying out the test, ensure the pipe installation, including, backfilling and curing of concrete thrust and anchor blocks is completed. Pipes should also be substantially backfilled to ensure they cannot move. Where joints are exposed some movement of the witness mark away from the socket will be apparent due to "Poissons effect" that is the shortening of the pipes under circumferential working stress.

It is recommended that mechanical joints and flanged connections remain exposed so that they can be visually checked for leaks. When testing against closed valves, arrangements should also be made for checking these for leaks. Appendix M4 of AS/NZS 2566.2 describes the test procedure and Figure 2.0 illustrates the usual test equipment arrangement.

Figure 1.0 gives an example of how variations in the elevation of the pipeline and the maximum design pressure envelope, can be accommodated

When setting the location of the test section and magnitude of the hydrostatic test pressure. If thrust restraints part of the installation they should be designed for the full test pressure to be applied.

If no make-up water is required to maintain pressure after one hour at test pressure, or after the time needed to inspect the whole pipeline, it can be considered that the test has passed. The need for make up water may not indicate a leak if it is within certain limits. Clause 6.3.4.1 of AS/NZS 2566.2 gives the following equation for calculating the allowable make - up necessary to maintain the test pressure.

Q < 0.14.L.D.H

Where,

Q = allowable make-up water, (litres per hour)
D = nominal diameter, in (metres)
L = test length, in (kilometeres)
H = average test head over length of pipeline under test, in (metres)

This allowance is intended to compensate in particular for the apparent loss due to entrapped air being forced into solution.

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Figure 1.0 - Using longitudinal section of pipeline for determining appropriate hydrostatic test pressures

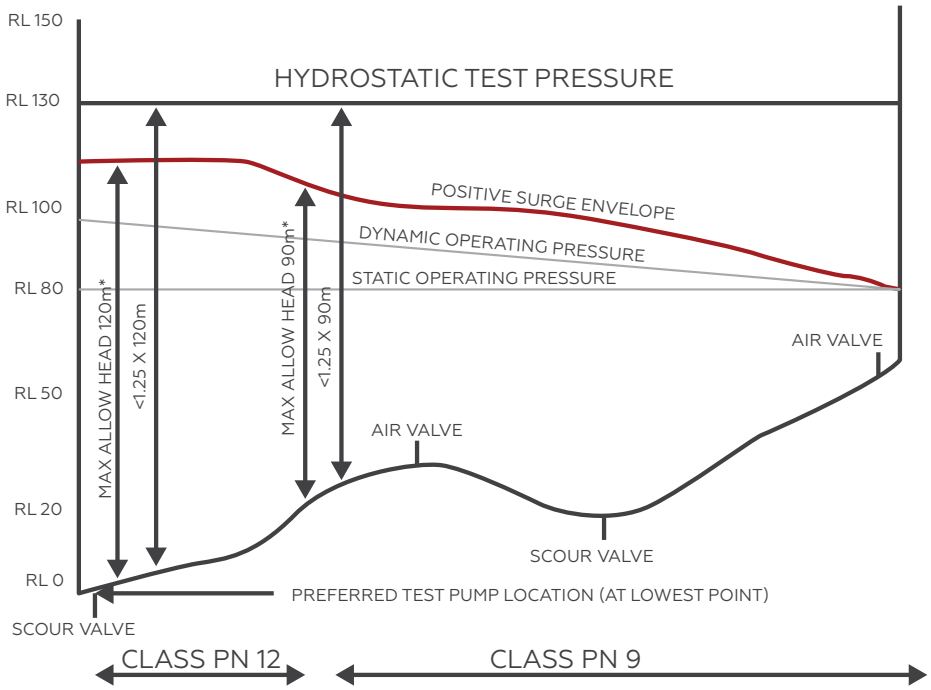
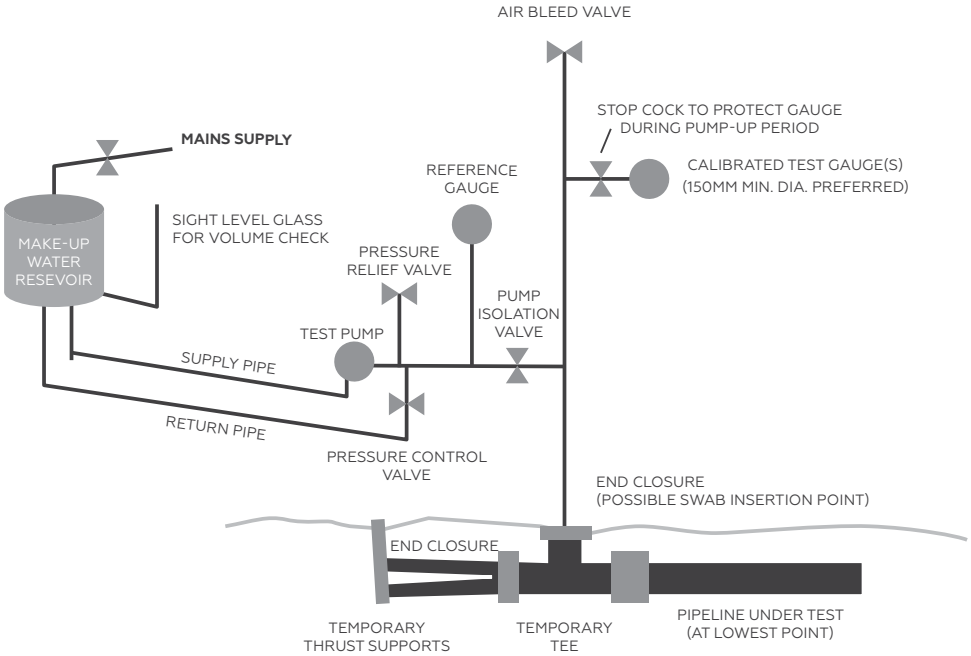


Figure 2.0 - Typical arrangement of testing equipment



WARNING:

High pressure (i.e. >30kPa) air testing is not recommended for safety reasons as the energy stored by compressed air or other gas in a pipeline can be extremely destructive and life threatening if released accidentally.

The information contained in this document should serve as a guide only and is subject to change without notice. For more information please contact Iplex Pipelines Australia Pty Ltd.