

IRONTITE® DUCTILE IRON PIPE

TESTING

FIELD PRESSURE TESTING - IRONTITE® SEAL COATED DICL PIPES

BACKGROUND - CEMENT MORTAR LINING WITH SEAL COAT

Many Australian water authorities specify ductile iron pipes, with a seal coating. This seal coating is factory applied to the cement mortar lining to ensure the water quality is not adversely affected when the pipe is in service. This is particularly the case during periods where the water flow through the pipe is low; such as would be experienced in newly developed sub-divisions.

The Australian ductile iron pipe standard AS/NZS 2280, stipulates that seal coats must comply with strict standards of hygiene and must also meet an effectiveness standard contained within the international standard, ISO 16132. For a seal coat to be effective, it must restrict the passage of alkaline water from the cement mortar, into the pipeline. The more effective a seal coating is at preventing the transfer of water, the better it is at maintaining good water quality.

LEAKAGE TESTING

Because the function of a seal coat is to restrict the free flow of water to and from the cement mortar lining, it stands to reason that better quality seal coats will restrict the rate at which pipe linings absorb and release water. This fact needs to be considered when new pipelines are subject to acceptance pressure testing.

The Australian Standard for the installation of buried flexible pipelines (which includes DICL) AS/NZS 2566.2 deals with Field Testing in Section 6. However this section does not recognise the need for soaking cement lined pipelines at test pressure. This can lead to difficulties in achieving a satisfactory pressure test result, due to the additional volume of water absorption by the cement mortar lining, while under test.

However, the test procedures detailed in the International Standard 'ISO 10802 Ductile iron pipelines - Hydrostatic Testing After Installation' and the USA's AWWA Manual of Water Supply Practices M41 both recognise that cement mortar linings, especially those protected by effective seal coats, require a period of soaking at full test pressure, to ensure full saturation of the cement mortar lining is achieved.

The Water Supply Code of Australia WSA 03 - 2002 V2.3 also provides test procedures in section 19.4.4 which recommends lines should be pressurised to 75% of the test pressure for a minimum of 12 hours, prior to conducting a pressure test.

To avoid misleading results when pressure testing Irontite® seal coated ductile iron pipes, Crevel/Iplex Pipelines support the above recommendations, i.e. The pipeline is pressurised and maintained at 75% of test pressure for at least 12 hours, or for a longer period to ensure the cement mortar lining is saturated and pipeline pressure stabilises. This may require several cycles of pressurisation prior to commencing the test.

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.



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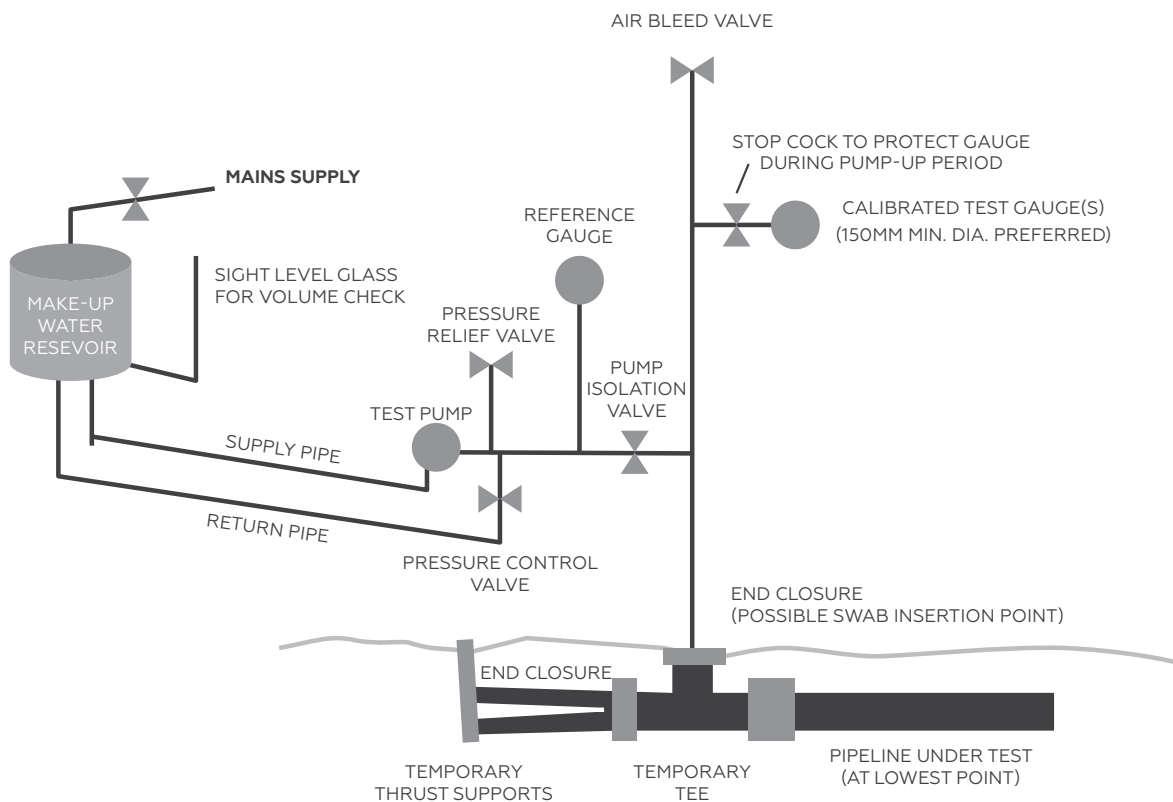
TEST PROCEDURE

The test procedures of the international standard 'ISO 10802 Ductile iron pipelines - Hydrostatic testing after installation' and 'Water Supply Code WSA 03-2002 V2.3' are recommended for Irontite® pipe.

Both standards specify site hydrostatic acceptance tests for installed pressure ductile iron pipelines used for conveying water and other liquids.

The recommended test pressure should not be less than the maximum design pressure and at the same time not exceed 1.25 times the pipe rating at any point along the pipeline, or exceed the maximum test pressure specified in the standards applicable to pipes, fittings, flanges, accessories and the design pressure of the restraining or anchoring devices.

Prior to carrying out a hydrostatic test it is normal to complete the pipe installation including the backfilling and allow sufficient time to elapse to allow for curing of concrete thrust and anchor blocks. It is recommended that mechanical joints and flanged connections remain exposed so that they can be visually checked for leaks. Where testing against closed valves, arrangements should be made for checking these for leaks.



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