

Australian/New Zealand Standard™

Methods of test for plastics pipes and fittings

Method 10: Method for hydrostatic pressure testing of fittings and elastomeric seal joints for non-pressure applications

1 SCOPE AND GENERAL

1.1 Scope This Standard sets out methods for hydrostatic pressure testing of fittings with inspection and test openings and assembled elastomeric seal joints for non-pressure applications.

1.2 Relevance of test The hydrostatic test ensures that a fitting or an assembly is able to withstand a positive hydrostatic head.

1.3 Preparation of test assemblies

1.3.1 Elastomeric seal joint assembly Each joint assembly shall consist of an elastomeric seal socketed fitting or an elastomeric seal socketed pipe assembled with one or more pieces of pipe.

Before assembly, each piece of pipe shall have its ends squared and cleaned. It shall not have burrs, notches or other defects which may cause premature failure.

If a lubricant is required to enable the joint to be assembled only water soluble lubricant shall be used.

1.3.2 Inspection and test opening assembly The fittings, assembled with all inspection and test opening components shall be used as the test assembly.

2 TEST FOR FITTINGS WITH INSPECTION AND TEST OPENINGS

2.1 Principle A fitting with an inspection or test opening is subjected to an internal hydrostatic pressure.

2.2 Apparatus The following apparatus is required:

- (a) *Pressurizing system*—a system capable of producing the specified test pressure. Where low test pressures are specified, a simple static head may be used.
- (b) *End connections*—watertight connections shall be made to the fitting or assembly.
The test specimen may be supported and held in a jig. Pressure shall be applied through one of the end connections. Care shall be taken that apparatus used for testing fittings with screw threads does not cause notching of the thread.

2.3 Conditioning The test specimen shall be filled with water or other inert liquid and conditioned at ambient temperature for 2 h immediately prior to testing.

2.4 Procedure Each test specimen shall be tested at ambient temperature, as follows:

- (a) Secure the test assembly in the water tank, fill the tank with cold water and condition the test assembly at ambient temperature for 2 h. After the conditioning period has elapsed, wipe any signs of condensation from the inside of the joint assembly. After a further 10 ± 5 , -0 min, inspect the inside of the joint assembly to ensure that it is completely dry.
- (b) Secure the test assembly in the tank maintained at ambient temperature.

- (c) Apply the test pressure gradually and maintain for the required test period.
- (d) At the completion of the test period examine the test assembly and record any leakage or other failure.

2.5 Report The following information shall be reported:

- (a) The complete identification of the fitting tested.
- (b) The test pressure applied to the test specimen.
- (c) The duration of test.
- (d) Any leakage or failure of the test specimen.
- (e) Reference to this test method, i.e. AS/NZS 1462.10, Section 2.

3 TEST FOR ELASTOMERIC SEAL JOINTS

3.1 Principle An assembled elastomeric seal joint is subjected to an internal hydrostatic pressure while a distorting load is applied to the spigot to achieve a specified diametral deflection.

3.2 Apparatus The apparatus shall comprise end connections, a reference pressure device, and a pressurizing system in accordance with Section 2.

Additional apparatus shall include a loading device capable of producing the force necessary to achieve the specified diametral distortion. The force shall be applied via a rocker onto a load-bearing beam which is free to move in the plane normal to the axis of the pipe. The effective beam length shall be equal to the nominal outside diameter of the specimen under test. Load-distribution plates and rubber load-distribution pads (hardness 40–50 IRHD) shall be placed between the beam and the pipe surface and on the opposing side of the pipe.

NOTE: A typical apparatus is shown in Figure 1.

3.3 Procedure Each test assembly shall be tested at ambient temperature out of direct sunlight. The procedure shall be as follows:

- (a) Assemble the components of the test assembly and condition at ambient temperature out of direct sunlight for a period of 2 h.
- (b) Place the test assembly in the load device such that the face of the socket under test is not more than 10 mm from the end of the load-bearing beam. For profiled pipes, the load-bearing beam shall be placed so that the profile closest to the socket is fully supported on the beam.
- (c) Apply the force required to cause the specified diametral distortion, measured at the end of the beam away from the face of the socket under test.
- (d) Apply the specified test pressure gradually.
- (e) At the completion of the test period and prior to the release of the pressure, examine the test specimen and record any leakage or other failure.

3.4 Report The following information shall be reported:

- (a) The complete identification of the joint tested.
- (b) The diametral distortion applied to the test assembly.
- (c) The hydrostatic pressure applied to the test assembly and the duration of the test.
- (d) Any evidence of leakage or failure.
- (e) Reference to this method, i.e., Section 3, AS/NZS 1462.10.