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Under Revision see DR 99424 AS/NZS 1462.6:1998

Australian Standard®

Methods of test for unplasticized PVC (UPVC) pipes and fittings

Method 6: Methods for hydrostatic pressure testing of UPVC pressure pipes

PREFACE

This Standard was prepared by the Standards Australia Committee on Unplasticized PVC Pipe to supersede AS 1462.6—1984.

This Standard now includes a 1000 h test at 60°C in addition to a short-term test and a long-term test hydrostatic test for UPVC pipe.

The long term test now requires at least eighteen failure results distributed in specified periods of time up to 1000 h. Results of this test are plotted on log-log paper and extrapolated to determine 50 year stress values.

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SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This Standard sets out three methods for hydrostatic pressure testing of unplasticized PVC (UPVC) pipes for pressure applications, viz a short-term test and a long-term test, and a 1000 h test.

1.2 REFERENCED DOCUMENTS. The documents below are referred to in this Standard:

AS
1462 Methods of test for unplasticized PVC (UPVC) pipes and fittings
1462.1 Part 1: Method for determining the dimensions of UPVC pipes and fittings

BS
3505 Unplasticized polyvinyl chloride (PVC-U) pressure pipes for cold potable water

1.3 RELEVANCE OF TEST. Hydrostatic pressure tests measure how well the pipe wall can withstand the hoop stress caused by internal hydrostatic pressure. These tests are used to determine the time to rupture characteristics of pipe.

1.4 APPARATUS. The following apparatus is required:

(a) *Pressurizing system.* An hydraulic system capable of producing pressure of 11.5 MPa without shock or pulsation and capable of maintaining an accuracy of +5, −2 percent of the set value. An hydraulic accumulator or pump may be used for this purpose.

Provision may be made for one or more connections on the hydraulic system at the one time, for connecting to test specimens. In the event of more than one connection being provided, means shall also be provided to ensure that if a test specimen bursts, the pressure will not exceed the +5, −2 percent tolerances. Provision shall also be made to isolate each connection.

Provision may be made for automatic accumulator recharge during a test with the pressure to the test specimen being permitted to vary outside of the above limits during recharge, provided that the time is automatically paused for the full recharge period.

(b) *End connections.* Fittings that will make a water-tight connection at each end of the test specimen with one fitting connected to the hydraulic system. Fittings of the type illustrated in Figure 1 are considered suitable.

(c) *Timing devices.* A timing device on each test station to register the duration of the test on each test specimen until the moment of burst, or until the specified time of test has elapsed. This timing device shall stop when the test pressure or test temperature exceeds the specified tolerances.

NOTE: An electric contact pressure gauge is considered a satisfactory apparatus for switching the timing device when used in conjunction with a pressure gauge.

(d) *Pressure gauge.* Used for setting the cut-out tolerances. The gauge shall be accurate to ±1 percent of the true value.

NOTE: Digital or analogue pressure gauges which can be shown to provide indicating capabilities and accuracy characteristics of the same or a higher degree, may be used for setting cut-out tolerances.

(e) *Testing environment.* A water bath which can be maintained at a temperature of 20 ±2°C or 60 ±2°C as appropriate. Alternatively, if specimens are tested in air, suitable guards shall be provided and the air shall be maintained at 20 ±2°C or 60 ±2°C as appropriate.