STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TEST FOR UNPLASTICIZED PVC (UPVC) PIPES AND FITTINGS

AS 1462.6
METHOD FOR HYDROSTATIC PRESSURE TESTING OF UPVC PRESSURE PIPES

SECTION 1. SCOPE AND GENERAL

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

1.2 RELEVANCE OF TEST. Hydrostatic pressure tests measure the ability of the pipe wall to withstand the hoop stress caused by internal hydrostatic pressure.

The short-term test is intended to ensure that the tensile strength of the pipe is adequate and the long-term test is intended to ensure that the creep characteristics of the formulation for the specified design criteria, over different sizes and classes of pipe, are satisfactory.

1.3 APPARATUS. The following apparatus is required:

(a) *Pressurizing system.* An hydraulic system capable of producing a pressure between 1.4 MPa and 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, there will be no change of pressure which will result in the +5, −2 percent tolerance allowable in the system or on other specimens under test, being exceeded. 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 shall be provided that will make a water-tight connection at each end of the test specimen. One fitting shall be connected to the hydraulic system, permitting the test specimen to be suspended vertically. Fittings of the type illustrated in Fig. 1.1 are considered suitable.

(c) *Timing devices.* Each test station shall be provided with a timing device 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 test gauge.

(d) *Test gauge.* Used for setting the cut-out tolerances. The test 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 capable of being maintained at a temperature of 20 ± 2°C. Alternatively, if specimens are tested in air, suitable guards shall be provided and the air shall be maintained at 20 ± 2°C.