

Australian Standard™

Plastics—Glass filament reinforced plastics (GRP)—Methods of test

Method 6: Determination of hoop tensile modulus of elasticity of wound glass filament reinforced plastics pipes

1 SCOPE

This Standard sets out a method for determining the hoop tensile modulus of elasticity of filament wound glass filament reinforced pipes.

NOTE: This test may be carried out on pipe wound at any angle.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1349	Bourdon tube pressure and vacuum gauges
3572	Plastics—Glass filament reinforced plastics (GRP)—Methods of test
3572.1	Method 1: Preparation of glass filament reinforced plastics test specimens
3572.4	Method 4: Determination of the dimensions of glass filament reinforced plastics pipes

3 APPARATUS

The following apparatus is required:

- (a) *Pressurizing system* An hydraulic system capable of producing a pressure up to twice nominal pressure rating of the pipe under test. An hydraulic accumulator or pump may be used for this purpose.
- (b) *End connections* Fittings that will make a watertight connection to the test specimen and to the pressurizing system. Three types of fittings are permitted, as follows:
 - (i) Caps, provided with ring joints sealing onto the external surface of the test specimen and connected to one another by a metal rod allowing some longitudinal movement at the ends of the test specimen. Pressure is applied through one cap end, or through the connecting rod (see Figure 1(a)).
 - (ii) Metal plugs provided with ring joints sealing onto the inner surface of the test specimen and connected to one another by a metal rod with a central bore, allowing some longitudinal movement at the ends of the test specimen (see Figure 1(b)).
 - (iii) End caps, or end plugs, incorporating standard joint couplings (see Figure 1(c)).
- (c) *Pressure measurement device* A pressure gauge or pressure gauges meeting the requirements of AS 1349 for the range of pressure to be measured within the specimen under test.