Australian Standard™

AS 3572.15

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

Method 15: Determination of resistance to long-term strain corrosion of glass filament reinforced plastics pipes

1 SCOPE

This Standard sets out a method for determining the resistance to strain corrosion by subjecting specimens of GRP pipe to long-term ring deflection in an aggressive environment.

2 PRINCIPLE

Not less than 18 test specimens are subjected to a range of constant vertical deflections, with sections of the pipe exposed to a corrosive test solution. The long-term resistance of pipe to the test solution is obtained by an extrapolation to 50 years of a linear regression line of logarithm deflection versus logarithm time to failure.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard.

AS	
3572	Plastics—Glass filament reinforced plastics (GRP)—Methods of test
3572.1	Method 1: Preparation of glass filament reinforced plastics test specimens
3572.3	Method 3: Determination of loss on ignition of glass filament reinforced plastics
3572.4	Method 4: Determination of dimensions of glass filament reinforced plastics pipes
3572.9	Method 9: Determination of pressure regression characteristics as a function of time for glass filament reinforced plastics pipes

4 DEFINITIONS

For the purpose of this Standard the definitions below apply.

4.1 Strain corrosion

The mechanism of failure of the pipe wall caused by the exposure of the inside surface, while in a deflected condition, to a nominated corrosive environment for a period of time.

4.2 Failure point

The passage of a fluid through the pipe wall or the rupture of the wall, whichever occurs first.

NOTE: The failure mode may be catastrophic, characterized by a sudden fracture parallel to the axis of the pipe, with the filament reinforcement cleanly broken at the edge of the fracture. Visual evidence of surface etching or pitting may or may not be present.