Australian Standard™

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

Method 14: Determination of long-term ring deflection of glass filament reinforced plastics (GRP) pipe subject to constant load and environmental exposure

1 SCOPE

This Standard sets out a method for determining the long-term ring deflection of glass filament reinforced plastics pipe subject to constant load and environmental exposure.

2 PRINCIPLE

Cut lengths of pipe are subjected to a range of constant load in a specified test solution. For each specific load, the deflection of the specimen is monitored until failure occurs. Failure may be by cracking or a rapid increase in the rate of deflection. The failure time/deflection data for each load is used to calculate the long-term (50-year) failure deflection.

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 the dimensions of glass reinforced plastics pipes
3572.9	Method 9: Determination of pressure regression characteristics as a function of time for glass filament reinforced plastics pipes
3572.10	Method 10: Determination of the initial ring stiffness of glass reinforced plastics pipes

4 DEFINITIONS

For the purposes of this Standard the definitions below apply.

4.1 Failure time

The elapsed time when either visible cracking has occurred or the deflection has increased at such a rate that the slope of a plot of log deflection versus log time data is 0.25.

4.2 Failure deflection

The ratio of diameter decrease of the test ring, to the mean diameter of the ring, given as a percentage at the time of failure.