

Australian Standard™

AS 2888.11

Methods of testing plastics waste fittings

Method 11: Method for cyclic testing of plastics telescopic waste connectors (rubber-ring joint type)

1 SCOPE

This Standard sets out a method for cyclic testing of telescopic waste connectors to determine the durability of the rubber-ring joint.

2 REFERENCED DOCUMENT

The following document is referred to in this Standard:

AS

1349 Bourdon tube pressure and vacuum gauges

3 PRINCIPLE

A rubber-ring jointed test specimen is assembled, in accordance with the manufacturer's instructions and the expansion joint is then pressure tested. It is then subjected to a reciprocating movement for a fixed number of cycles to simulate the extent and nature of joint displacement that is allowed by the design to accommodate thermally induced expansion and contraction in-service. The ability of the test specimen to withstand the test pressure before and after cyclic testing is used as a means of assessment in conjunction with any signs of distortions or other damage.

4 APPARATUS

The following apparatus is required:

- (a) *Test rig* A test rig consisting of a clamp to hold the socket part of the fitting stationary and a reciprocating device to move the spigot through a distance of up to 15 mm. The movement of the reciprocation device shall be such that the spigot moves in parallel with the socket to the extent of the manufacturer's recommended deflection of the joint.
- (b) *Counter device* A counter device capable of recording one unit for each full cycle of forward and reverse motion.
- (c) *Pressurizing system* A pressurizing system capable of producing a hydrostatic pressure of 350 +20, -0 kPa without shock or pulsations.
- (d) *Pressure gauge* A pressure gauge of minimum diameter 150 mm, complying with the requirements of AS 1349 and capable of indicating the required test pressure within 1% of the true value.

NOTE: Digital or analogue pressure gauges that can be shown to provide the required indicating capabilities and have accuracy characteristics at least equal to industrial gauges complying with AS 1349 may be used.

5 TEST SPECIMEN

The test specimen shall be a complete plastics telescopic rubber-ring jointed waste connector.

Specimens supplied pre-lubricated by the manufacturer shall be tested as received. Specimens supplied un-lubricated may be lubricated in accordance with the manufacturer's instructions.

6 CONDITIONING AND TESTING

For referee tests, the test specimen shall be conditioned in air at a temperature of $20 \pm 2^\circ\text{C}$ for a minimum of 24 h prior to being tested in the same controlled environment. For routine tests, the test specimen may be tested at ambient temperature but not exceeding 38°C .

7 PROCEDURE

The procedure shall be as follows :

- (a) Hydrostatically pressure test the specimen after conditioning but before cyclic testing at $350 +20, -0$ kPa for $60 +10, -0$ s. If no leaks are evident then proceed.
- (b) Clamp the socket in position and attach the spigot in the reciprocating arm so that the socket, spigot and rubber ring are assembled in the normal operating position allowing for the movement as claimed by the manufacturer.
- (c) Subject the test specimen to $5000 +200, -0$ cycles. Cycling time shall be 15 ± 10 s.
- (d) At the completion of cyclic testing and without disassembling the test specimen, repeat the hydrostatic test in Step (a) above.
- (e) Disassemble specimen, examine and record any signs of damage, failure or wear.

8 REPORT

The following information shall be reported:

- (a) Manufacturer, type and model of fitting tested.
- (b) Size, special features and materials of specimen.
- (c) Any leakage or failure when hydrostatic testing prior to cycle testing.
- (d) Any leakage or failure when hydrostatic testing after cycle testing.
- (e) Any signs of wear, damage, or failure of the joint assembly during and after cyclic testing, hydrostatic testing and disassembly.
- (f) Reference to this Australian Standard, i.e. AS 2888.11.