

Australian/New Zealand Standard®

Methods of test for plastics pipes and fittings

Method 21: Method for determination of bond strength

1 SCOPE This Method sets out the procedure for determining the bond strength between the inner and outer walls of hollow profile structured wall pipe.

2 PRINCIPLE A probe or knife point is used to determine the extent of separation between the inner and outer walls of the pipe.

3 APPARATUS A metal probe or knife blade.

4 TEST SPECIMENS A 100 mm length of pipe is cut longitudinally into eight sections using a suitable device such as a bandsaw. Each section comprises approximately a 45° segment of the pipe.

5 CONDITIONING OF TEST SPECIMENS Each test specimen shall be conditioned in either air or water immediately prior to testing at $20 \pm 2^\circ\text{C}$ for a period not less than that indicated in Table 1.

TABLE 1
CONDITIONING OF TEST SPECIMENS

Minimum total wall thickness mm	Conditioning time in water or moving air (see Note 1)	Conditioning time in still air (see Note 2)
≤ 5	5 min	15 min
$> 5 \leq 10$	15 min	35 min
$> 10 \leq 20$	30 min	90 min
> 20	2.5 h	5 h

NOTES:

- 1 These conditioning times apply when the test specimens are immersed in water or in a circulating air current produced by means of a fan or other device.
- 2 This is considered to be a normal laboratory atmosphere.

6 PROCEDURE The procedure shall be as follows:

- (a) Using the tip of the metal probe or knife blade, attempt by hand to separate the inner and outer walls of the pipe specimen along its longitudinal face.
- (b) Determine and record the percentage of the contact width, at the junction of the two walls, which has been separated by the probe.
- (c) Repeat the procedure on the other seven test specimens.

7 REPORT Report the following information:

- (a) A complete identification of the pipe tested.
- (b) The size and production date of the pipe tested.
- (c) The number of specimens, if any, which showed delamination at the bond between the two walls and, for each such specimen, the percentage of contact width that exhibited separation.
- (d) Reference to this test method, i.e. AS/NZS 1462.21.