

Australian/New Zealand Standard®

Plastic roof and wall cladding materials— Methods of test

Method 9: Determination of transverse bending stiffness

1 SCOPE This Standard sets out a method for measuring the transverse bending stiffness of plastic roof and wall cladding materials.

2 REFERENCED DOCUMENT The following document is referred to in this Standard:

AS

2193 Methods for calibration and grading of force-measuring systems of testing machines

3 PRINCIPLE The transverse bending stiffness (El) of plastic planks is determined by obtaining the load-deflection curve for the planks. The bending stiffness is used to differentiate between Type A and Type B planks.

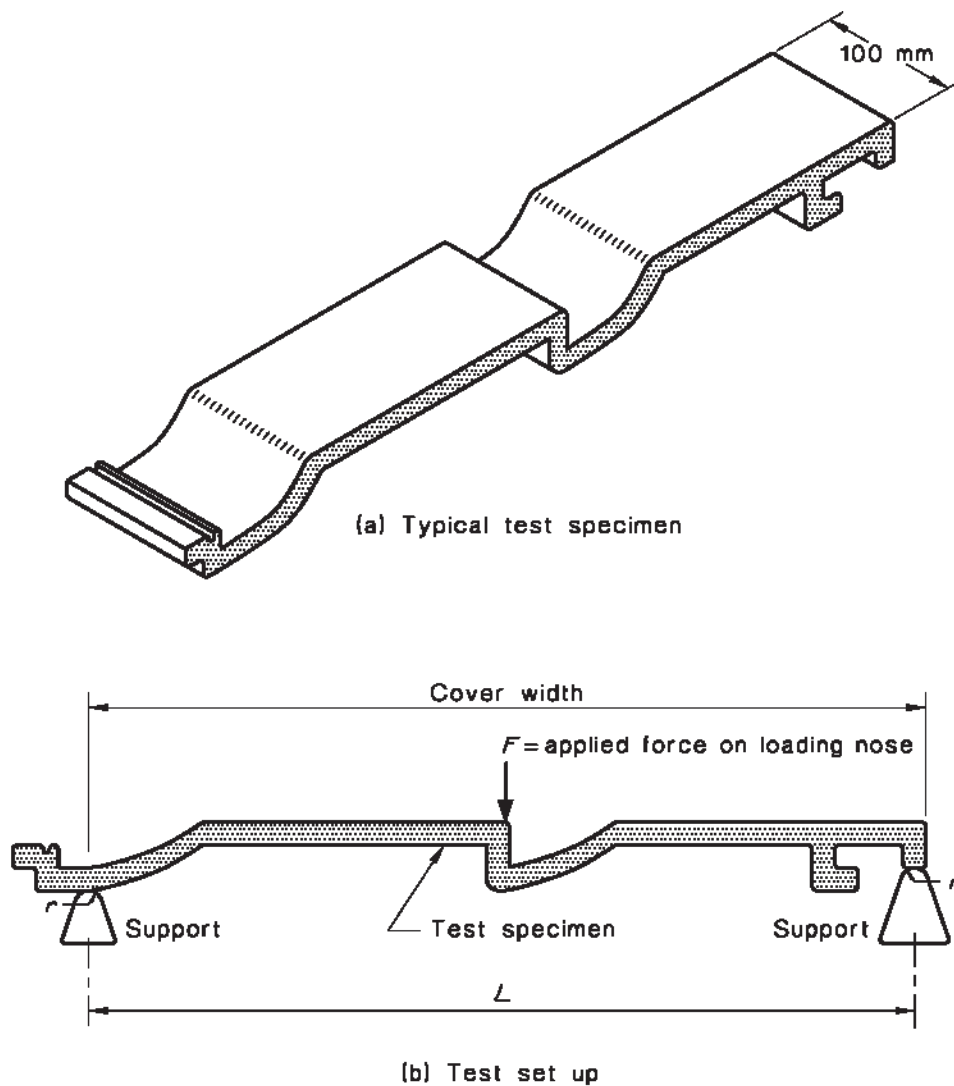
4 APPARATUS The following apparatus is required:

- (a) An autographic tensile testing machine conforming to the requirements of Grade A as specified in AS 2193. The three-point loading system, shall be such that total elastic deformation of the system does not exceed 1% of the total deflection of the test specimen during testing.
- (b) A three-point bending system for attachment to the machine, as shown in Figure 1, which is capable of accepting specimens of the required size and has adjustable support span and supports the full width of the specimen. The loading nose and supports shall have cylindrical surfaces. In order to avoid excessive indentation or failure due to stress, concentration supports and nose shall be aligned parallel.

5 TEST SPECIMENS A minimum of five test specimens shall be prepared with the following requirements:

The specimens shall be obtained by cutting typical planks transversely, producing specimens 100 +0, -2 mm wide. Where cladding has insulation added as an integral part of the sheet, the insulation shall be removed for this test.

6 CONDITIONING Each test specimen shall be conditioned at $23 \pm 2^\circ\text{C}$ in either air or water immediately prior to testing for a period not less than that indicated in Table 1.



LEGEND:

 F = applied force L = support span r = radius of nose and supports $3 \text{ mm} \leq r \leq 10 \text{ mm}$

FIGURE 1 SCHEMATIC ARRANGEMENTS FOR THREE-POINT BENDING