Australian Standard™

Methods of testing roof tiles

Method 3: Determination of transverse strength

1 SCOPE

This Standard sets out the method for determining the transverse strength of roof tiles after immersion in water for 24 h.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
2049	Roof tiles
2193	Methods for calibration and grading of force-measuring systems of testing machines
4046	Method of testing roof tiles
4046.1	Method 1: Determination of distortion

3 PRINCIPLE

The tile is supported at each end and a load is applied at a uniform rate to the midpoint until fracture occurs.

4 APPARATUS

The apparatus shall consist of a compression testing machine which complies with AS 2193, Grade B. The machine shall be fitted with supports and a loading fixture that will permit the loading of test specimens as simple beams with the load applied midway between the supports. The support and loading bars or battens shall be mutually parallel and normal to the longer axis of the specimen. The loading bar shall be self-aligning.

5 TEST SPECIMENS

Six tiles shall be selected for testing from the 12 tiles tested in AS 4046.1.

NOTE: In certain circumstances AS 2049 makes provision for a retest.

6 CONDITIONING PROCEDURE

Prior to being tested for transverse breaking strength, all tiles shall be immersed in water at 20 ± 5°C for not less than 24 h and for not more than 26 h. Immediately before the test, each tile shall be removed individually from the water and the surplus moisture removed.

7 PROCEDURE

The procedure for each of the six tiles is as follows:

(a) Measure, in accordance with AS 2049, the exposed width of each tile to be tested.

(b) Support each tile in a horizontal position on two battens, each 50 mm wide and not less than 25 mm thick, located at positions that would be applicable when in use on the roof (see Figure 1).