

Australian Standard™

AS 4046.5

Methods of testing roof tiles**Method 5: Determination of permeability**

PREFACE

This Standard incorporates Amendment No. 1 (January 2006). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

METHOD

1 SCOPE

This Standard sets out the method to determine the permeability of roof tiles.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
2049	Roof tiles
4046	Method of testing roof tiles
4046.1	Method 1: Determination of distortion

3 PRINCIPLE

A tile is used as the bottom of a container holding water for a given period of time to ascertain if water penetrates to the underside of the tile.

4 APPARATUS

The following apparatus is required:

- (a) A form, as shown in Figure 1(a), with its lower edges shaped approximately to the profile of the face of the tile and so dimensioned that when the form is sealed to the tile it will enclose an area of tile surface, as follows:

- (i) Plain tiles, not less than 25 000 mm².
(ii) Other than plain tiles, not less than 50 000 mm².

Alternatively, a form as shown in Figure 1(b) may be used, in which the whole tile is sealed around its perimeter.

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- (b) A stand or support, capable of being adjusted to maintain the tile in a horizontal position at a height sufficient to allow observation of the underside of the tile, and of such size that the contact points between the stand and the tile are outside the perimeter of the form.

5 TEST SPECIMENS

The test specimens shall consist of three of the remaining six tiles selected for testing in AS 4046.1.

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

6 PROCEDURE

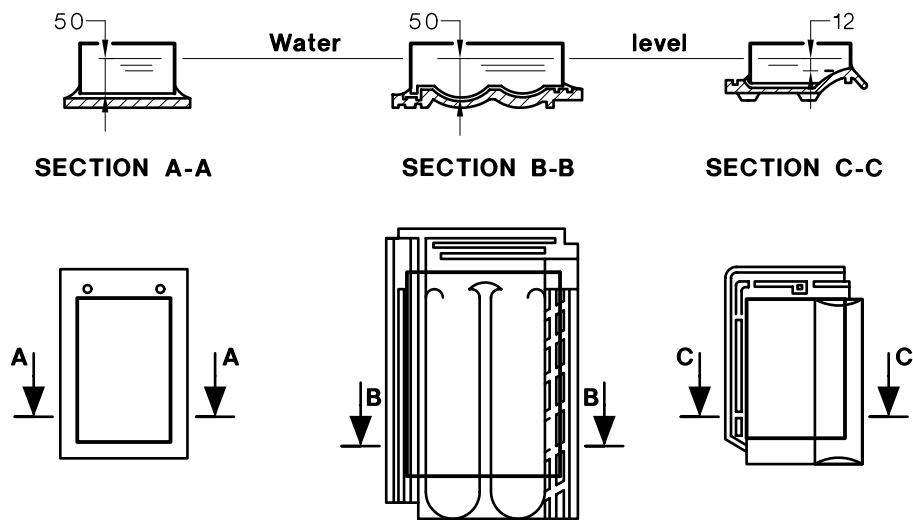
The procedure for each of the three tiles is as follows:

- (a) Seal with suitable sealing compound, either—
 - (i) the external sides of the form to the upper surface of the tile (see Figure 1(a)); or
 - (ii) the perimeter of the whole tile to the internal face of the whole tile form (see Figure 1(b)).
- (b) Place the supporting stand on a non-absorbent surface, rest the sealed tile on the stand and adjust the stand to make the tile horizontal.
- (c) Add water to the form to a depth of 50 mm, measured from the lowest point of the upper surface of the tile, or to a depth of 12 mm measured from the highest point of the upper surface of the tile, whichever gives the greater depth.
- (d) Maintain the level of the water for a period of 2 h and at the end of this period check whether any drops of water have formed on the underside of the tile.

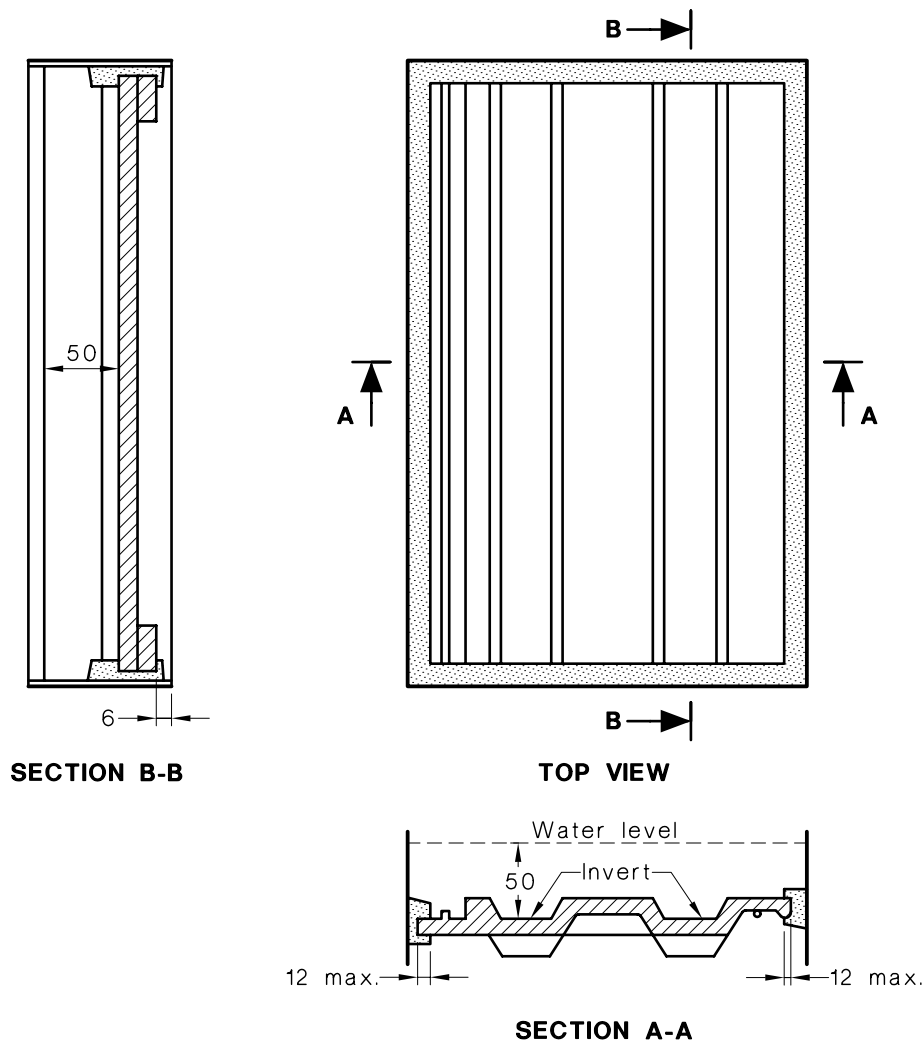
7 REPORT

The report shall include the following:

- (a) The date and location of the test, and retest, if applicable.
- (b) Whether or not any drops of water form on the underside of any one of the three test specimens.
- (c) When a retest is permitted, whether or not any drops of water form on the underside of any one of the six retest specimens.
- (d) Reference to this Australian Standard, i.e., AS 4046.5.



(a) Testing of part tile



(b) Testing of whole tile

DIMENSIONS IN MILLIMETRES

FIGURE 1 FORMS FOR TESTING PERMEABILITY