

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 4046.7—2002

Methods of testing roof tiles

Method 7: Determination of resistance to salt attack

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Technical Committee BD-008 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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Department of Housing and Public Works
Housing Industry Association
National Association of Steel-Framed Housing
Queensland Master Roof Tilers Association
Roofing Industry Association of NSW
Roofing Tile Association of Australia

NOTES

Method of testing roof tiles

Method 7: Determination of resistance to salt attack

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 for determining the resistance of roof tiles to salt attack. It also includes information helpful for judging the resistance to salt attack, particularly when there are inadequate records of the behaviour of the product when exposed to actual weathering conditions.

2 PRINCIPLE

Specimens cut from roof tiles are subjected to cycles of soaking in salt solution, oven-drying and cooling. When particle losses occur, the total mass of the particles lost from each specimen is determined by weighing.

AI | A sample is considered to be salt attack resistant when no test specimen has a total mass loss of particles of more than the allowable mass loss as specified in AS 2049.

The resistance of the sample against the action of sodium chloride is to be determined, with a 14% solution of sodium chloride.

AI | NOTE: Sodium chloride is more representative of the sea air salt and, therefore, is the appropriate solution for testing roof tiles.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

1289 Methods of testing soils for engineering purposes

1289.0 Part 0: General requirements and list of methods

AI | 2049 Roof tiles

4 APPARATUS AND REAGENT

The following apparatus is required:

- (a) A controlled temperature space in which the temperature is controlled to $19 \pm 3^\circ\text{C}$.
NOTE: The structure of the salt crystals is dependent on the temperature at formation. The temperatures specified are critical.
- (b) Individual containers for each specimen complying with the following:
 - (i) Wide enough to allow the insertion and removal of the specimen without damage.
 - (ii) With covers to stop evaporation (optional).
 - (iii) Rigid enough to support the weight of the specimen.NOTE: Plastic beakers or cups of 200 mL capacity are suitable.
- (c) A desiccator of sufficient capacity with dry silica gel as desiccant.
- (d) Two drying ovens that shall meet the following requirements:
 - (i) Fan-forced and adequately vented to permit escape of moisture-laden air.
 - (ii) The working space of the oven shall be capable of maintaining temperatures of $115 \pm 3^\circ\text{C}$ at the eight corners and centre of the oven's working space.
 - (iii) The oven shall be provided with a thermometer whose sensing element is located in the airstream moving towards the vents of the cabinet. The temperature indicator shall be located so that it can be observed from the working space in front of the cabinet and shall be readable to $\pm 1^\circ\text{C}$.
 - (iv) The oven shall be dedicated to this test (no other samples may be placed in this oven whilst salt cycle specimens are being dried).
 - (v) The oven shall be large enough to accept all specimens without undue interference to the flow of air through the heated cabinet.
 - (vi) At any working space in the oven, the minimum rate of evaporation, when determined according to AS 1289.0, shall be not less than 20 g/h.
 - (vii) The performance of the oven shall be calibrated biennially for temperature and evaporation rate.
- (e) Open mesh stainless steel shelves to suit the drying oven. These may consist of wire mesh, punched or slotted sheet, or spaced strips 40 to 60 mm wide with a gap of not less than 10 mm between each strip.
- (f) Draining tray(s) to suit stainless steel shelves.
- (g) Balance accurate to 0.01 g.
- (h) Buchner filter funnel.
- (i) One litre vacuum flask.
- (j) Fast filtration rate paper, e.g., Whatman 541.
- (k) Watch glasses, or other suitable dishes.
- (l) Temperature recording equipment (optional).
- (m) Technical grade sodium chloride.
- (n) A small (25 mm) brush.