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Australian Standard®

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**Concrete roofing tiles**

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**STANDARDS AUSTRALIA**



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The following interests are represented on Committee BD/17:

Australian Concrete Roofing Tile Manufacturers Association  
Australian Institute of Building Surveyors  
Australian Uniform Building Regulations Co-ordinating Council  
CSIRO Division of Building Construction and Engineering  
Department of Local Government, Qld  
Housing Industry Association, Australia  
Master Builders Construction and Housing Association, Australia  
Monash University  
Royal Australian Institute of Architects

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## PREFACE

This Standard was prepared by the Standards Australia Committee on Concrete Roofing Tiles as a revision and amalgamation of AS 1757—1975, *Concrete interlocking roofing tiles (without weathering check)* and AS 1759—1975, *Concrete interlocking roofing tiles (with weathering check)*.

This edition includes tests for squareness of the tiles, and the resistance of the tile to freeze/thaw. The material has been rearranged to facilitate the use of integral and non-integral Appendices for performance testing and illustration of components.

AS 1757 was first issued as an SAA Interim Standard, SAA Int.310, in 1949. AS 1759 was first issued as AS A14 in 1933. SAA Int.310 was revised and issued as AS A158 in 1967, and AS A14 was revised in 1948, amended and redated in 1949, 1950 and 1952. Both documents were subsequently revised and issued as AS 1757 and AS 1759 in 1975.

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## STANDARDS AUSTRALIA

**Australian Standard**  
**Concrete roofing tiles**

**1 SCOPE.** This Standard sets out requirements for concrete roofing tiles and for the associated concrete accessories. It establishes standards for—

- (a) performance, fit and finish;
- (b) quality of materials; and
- (c) the finished product.

NOTE: Appendices A and B illustrate various terms used in this Standard.

**2 REFERENCED DOCUMENTS.** The following documents are referred to in this Standard:

<b>AS</b>	
1129	Fly ash for use in concrete
1130	Code of practice for use of fly ash in concrete
1170	SAA Loading Code
1170.2	Part 2: Wind forces
1315	Portland cement
1317	Blended cement
1478	Chemical admixtures for use in concrete
1479	Code of practice for the use of chemical admixtures in concrete (metric units)
2193	Methods for calibration and grading of force-measuring systems of testing machines
2758	Aggregates and rock for engineering purposes
2758.1	Part 1: Concrete and rock aggregates
2050	Fixing of roofing tiles
<b>BS</b>	
1014	Specification for pigments for portland cement and portland cement products
6920	Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water

**3 DEFINITIONS.** For the purpose of this Standard, the definitions below apply.

**3.1 Accessory**—a concrete product used to finish the roof; includes apex, ridge, and barge tiles.

**3.2 Concrete roof tile**—a concrete product used to form the field of the roof.

**3.3 Identifiable lot**—a batch of concrete tiles or accessories of the same type, profile and colour, produced in a single shift, on a particular date, and at essentially the same time.

**4 MATERIALS.**

**4.1 Cement.** Cement shall comply with AS 1315, and AS 1317.

**4.2 Fly ash.** Fly ash shall comply with AS 1129, and shall be used in accordance with AS 1130.

**4.3 Pigments.** Pigments shall comply with BS 1014.

**4.4 Aggregate.** Aggregate or the components of the aggregate, as appropriate, shall comply with AS 2758.1.

**4.5 Admixtures.** Any chemical admixtures used in the concrete shall comply with AS 1478, and shall be used in accordance with AS 1479.

**4.6 Surface treatment.** Materials used for the surface treatment of tiles shall not impart to rainwater which may be collected from the roof, any objectionable taste, colour or odour of any element or chemical in a concentration known to be hazardous to health.

NOTE: A method of assessing Clause 4.6 is provided by BS 6920.

**5 DESIGN AND DIMENSIONS.**

**5.1 General.** Concrete roofing tiles shall be designed and manufactured to ensure that, when fixed in accordance with AS 2050, the requirements of the Dynamic Weather Resistance Test, detailed in AS 2050, are satisfied.

**5.2 Dimensional tolerances.** The dimensional tolerances for concrete roofing tiles shall be as follows:

- (a) Width . . . . . manufacturer's nominated width  $\pm 2\%$ . (See Figure 1.)
- (b) Length . . . . . manufacturer's nominated length  $\pm 2\%$ .
- (c) Thickness . . . . . manufacturer's nominated thickness  $\pm 10\%$ .

**5.3 Permitted distortion.** The permitted distortion of any tile shall be such that when tested in accordance with Appendix C, the maximum gap shall not exceed 3 mm for plain tiles, or 5 mm for other than plain tiles.

**5.4 Batten lugs and squareness.** Where the design of the tile requires batten lugs, one or more shall be provided on the underside of each tile so that they engage over the upper edge of the tiling battens to provide for the horizontal alignment and vertical restraint of tiles when fixed.

When tiles are tested in accordance with Appendix D, the shape and position of the batten lugs where fitted, shall be such that—

- (a) where required, each of the twelve test specimens is self-supporting; and
- (b) the difference between the distances of the top and bottom corners of the specimen to either adjacent side of the stand is not more than 1.5% of the nominated overall length of the tile.

NOTE: Some single profile tile designs do not permit batten lugs to support the tile without additional restraint, e.g. multiple nailing. This test is then inappropriate for testing the truth of support. To permit the tile to be tested for squareness, the apparatus should then be used horizontally.

**5.5 Ribs.** Any lateral rib or ribs, incorporated in the underside of the tile body designed to restrict water penetration through laps of tiles in the finished roof may be load bearing and therefore contoured to the tile below.