AS 1530.8.1:2018

Methods for fire tests on building materials, components and structures

Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack—Radiant heat and small flaming sources

This Australian Standard® was prepared by Committee FP-018, Fire Safety. It was approved on behalf of the Council of Standards Australia on 11 October 2018.
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The following are represented on Committee FP-018:

- Australasian Fire and Emergency Service Authorities Council
- Australian Building Codes Board
- Australian Industry Group
- Australian Institute of Building
- AWTA Product Testing
- Building Research Association of New Zealand
- Bureau of Steel Manufacturers of Australia
- CSIRO
- Engineers Australia
- Fire Protection Association Australia
- Fire Protection Association New Zealand
- Forest and Wood Products Australia
- Insulated Panel Council Australasia
- Insulation Australasia
- Insurance Council of Australia
- Plastics and Chemicals Industries Association
- Property Council of Australia
- Society of Fire Protection Engineers

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Australian Standard®

Methods for fire tests on building materials, components and structures

Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack—Radiant heat and small flaming sources

Originated as AS 1530.8.1—2007
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PREFACE

General

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee FP-018, Fire Safety, to supersede AS 1530.8.1—2007.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The major changes in this edition are as follows:

(a) Allowance for the use of stainless steel radiant plates that have more uniform radiation distribution.

(b) Improved specification of test and specimen configurations in regard to weep holes in walls, skylights in roof construction and penetrations.

(c) Inclusion of provisions for the determination of the impact of weathering of exposed timber construction treated with chemicals or coatings that improve its fire performance.

(d) Inclusion of roof valley details for roof construction.

(e) Clarification of the applicability of results for base of wall details.

(f) Inclusion of test procedure for windows with screens and shutters.

(g) Inclusion of alternate crib design based on original debris research and industry testing.

(h) Clarification of reporting requirements to require observations relate to failure criteria and be less subjective.

(i) A general review of clarity, intent and specification of all testing requirements and in particular through gap criteria, roof pitch, crib location, heat flux gauge location.

The AS 1530.8 series comprises this Standard and AS 1530.8.2, *Methods for fire tests on building materials, components and structures*, Part 8.2: *Tests on elements of construction for buildings exposed to simulated bushfire attack—Large flaming sources*.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

Figures which are referenced in mandatory terms are deemed to be included in the requirements of this Standard.

This Standard incorporates commentary on some clauses. The commentary directly follows the relevant clause, is designated by 'C' preceding the clause number and is printed in italics in a panel. The commentary is for information only and does not need to be followed for conformance with this Standard.

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Australian Standard

Methods for fire tests on building materials, components and structures

Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack—Radiant heat and small flaming sources

1 SCOPE

This Standard provides methods for determining the performance of external construction elements when exposed to radiant heat, burning embers and burning debris.

NOTES:

1 The methods do not simulate engulfment by flames from the fire front or large burning items such as other burning buildings or adjacent isolated trees and shrubs (see AS 1530.8.2).

2 The peak level of radiant heat exposure is dependent upon the distance of the building from the potential fire front, the fire severity and the extent of shielding. The peak level can be based on an analysis of the specific site from first principles or from the classification of the site in accordance with the simple methods specified in AS 3959.

3 The results of the fire tests may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

4 The fire tests in this Standard provide data relating to the performance of the particular element and building system and do not provide a general assessment of the performance of a specific type of material.

2 OBJECTIVE

The objective of this Standard is to provide building designers, manufacturers, test laboratories and regulatory authorities with a set of uniform requirements for heating conditions, test procedures, and criteria for the determination of the resistance to fire of a single building element or multiple building elements. This will be to a radiant heat profile simulating exposure to radiant heat from the fire front of a bushfire with additional exposure simulating ember attack to external surfaces and exposure to direct flame impingement from small secondary fires simulating burning debris.

3 PRINCIPLE

3.1 General

A representative element of construction, or combination of elements is exposed to conditions simulating exposure to radiant heat, burning debris and burning embers under controlled and repeatable conditions.

Observations are made on the performance of the specimen while it is subjected to simulated exposure. The elapsed times at which various performance criteria are exceeded are recorded. The performance criteria are selected to address typical fire spread scenarios and to facilitate relatively safe movement around a property after the passage of the fire front.