AS 1530.8.1—2007

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

This Australian Standard® was prepared by Committee FP-018, Fire Safety. It was approved on behalf of the Council of Standards Australia on 27 June 2007.
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The following are represented on Committee FP-018:

- AWTA Textile Testing
- Australasian Fire Authorities Council
- Australian Building Codes Board
- Australian Industry Group
- Australian Institute of Building
- Building Research Association New Zealand (BRANZ)
- Bureau of Steel Manufacturers of Australia
- CSIRO Manufacturing and Materials Technology
- Fire Protection Association Australia
- Fire Protection Association New Zealand
- Plastics and Chemicals Industries Association
- Property Council of Australia

Additional Interests:

- Testing Interests (Australia)

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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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PREFACE

General

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee FP-018, Fire Tests on Building Components, Materials and Structures and developed by FP-018-05.

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.

Development

This Standard is based on Independent Fire Test Laboratories Test Procedure FSE 027 Part 1 Version 1.6 dated 24 October 2005. See also 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*.

Referenced documents

This Standard references documents in clauses of both a normative and informative nature. Normative referenced documents are listed in Clause 6. Informative referenced documents are listed in Appendix B.

Normative and informative

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 the Standard, whereas an ‘informative’ appendix is only for information and guidance.

Notes

The use of Notes in this Standard is of an advisory nature only. They provide explanations and guidance on recommended design consideration or technical procedures, as well as an informative cross-reference to other documents or publications.

Commentary

This Standard incorporates a 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 compliance with the Standard.

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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 would not provide a full assessment of fire hazard under all fire conditions.

4 These fire tests 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 thermal and, where applicable, physical loading. 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.

