



MALAYSIAN STANDARD

MS 544-9-1:2024

**Code of practice for structural use of timber:
Part 9: Fire resistance of timber structures:
Section 1: Method of calculating fire resistance
of timber members
(First revision)**

ICS: 91.080.20

Descriptors: fire resistance, timber structures, notional charring rate, residual section, radius of arris, stability criterion

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Committee representation

The National Standards Committee on Timber, Timber Products and Timber Structures (NSC 22) under whose authority this Malaysian Standard was developed comprises representatives from the following organisations:

Construction Industry Development Board Malaysia
Department of Standards Malaysia (Secretariat)
Forest Research Institute Malaysia
Jabatan Kerajaan Tempatan
Jabatan Kerja Raya Malaysia
Malaysian MDF Manufacturers Association
Malaysian Panel-Products Manufacturers' Association
Malaysian Timber Council
Malaysian Timber Industry Board
Malaysian Wood Industries Association
Malaysian Wood Moulding & Joinery Council
Malaysian Wood Preserving Association
Sabah Timber Industries Association
Sarawak Timber Association
Sarawak Timber Industry Development Corporation
Timber Exporters' Association of Malaysia
Universiti Putra Malaysia
Universiti Teknologi MARA

The Technical Committee on Timber Structures (NSC 22/TC 2) which supervised the development of this Malaysian Standard consists of representatives from the following organisations:

Besgrade Products Sdn Bhd
Construction Industry Development Board Malaysia
Department of Standards Malaysia (Secretariat)
Dongwha Malaysia Sdn Bhd
Forest Research Institute Malaysia
HeveaBoard Berhad
Jabatan Kerja Raya Malaysia
Jowat Manufacturing (SEA) Sdn Bhd
Malaysian MDF Manufacturers Association
Malaysian Panel-Products Manufacturer's Association
Malaysian Timber Council
Malaysian Timber Industry Board
Perceptive Profile Sdn Bhd
Profina Plywood Sdn Bhd
Robin Resources (Malaysia) Sdn Bhd
Sarawak Timber Industry Development Corporation
Universiti Putra Malaysia
Universiti Sains Malaysia
Universiti Teknologi MARA

The Working Group on Fire Resistance (NSC 22/TC 2/WG 3) which developed this Malaysian Standard consists of representatives from the following organisations:

Department of Standards Malaysia (Secretariat)
Fire and Rescue Department of Malaysia
Forest Research Institute Malaysia
Jabatan Kerja Raya
Malaysian Timber Industry Board
Infrastructure University Kuala Lumpur
Universiti Putra Malaysia
Universiti Sains Malaysia
Universiti Teknologi MARA

Foreword

This Malaysian Standard was developed by the Working Group on Fire Resistance (NSC 22/TC 2/WG 3) under the authority of the National Standards Committee on Timber, Timber Products and Timber Structures (NSC 22).

This first revision of MS 544-9-1 cancels and replaces MS 544: Part 9: Section 1: 2001, *Code of practice for structural use of timber: Part 9: Fire resistance of timber structure: Section 1: Method of calculating fire resistance of timber members*.

Major modifications in this revision are as follow:

- a) the clause on “Scope” has been updated;
- b) the clause on “Normative references” has been updated;
- c) the previous Clause 4 on “Materials” has been removed; and
- d) the figures in the standard have been redrawn.

In the development of this standard, reference was made to *BS 5268: Part 4: 1990 – Structural use of timber Part 4: Fire resistance of timber structures. Section 4.1: Methods of calculating fire resistance of timber members*.

MS 544 consists of the following parts and sections, under the general title *Code of practice for structural use of timber*:

Part 1: General

Part 2: Permissible stress design of solid timber

Part 3: Permissible stress design of glued laminated timber

Part 4: Timber panel products

Section 1: Structural plywood

Section 2: Marine plywood

Section 3: Cement bonded particleboard

Section 4: Oriented strand board (OSB)

Part 5: Timber joints

Part 6: Workmanship, inspection and maintenance

Part 7: Testing

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Foreword *(continued)*

Part 8: Design, fabrication and installation of prefabricated timber for roof trusses

Part 9: Fire resistance of timber structures

Section 1: Method of calculating fire resistance of timber structures

Part 10: Preservative treatment of structural timbers

Part 11: Method of calculation basis for span tables

Section 2: Ceiling joists

Section 3: Ceiling binders

Section 4: Domestic rafters

Part 12: Structural laminated veneer lumber for structural application.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.