



# 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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## **MS 544-9-1:2024**

### **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*

## **MS 544-9-1:2024**

### **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.