



# MALAYSIAN STANDARD

MS 1787-7:2024

**Wood-based panels – Part 7: Determination of  
dimensional changes associated with changes  
in relative humidity  
(First revision)  
(ISO 16985:2003, MOD)**

**ICS: 79.060**

Descriptors: wood-based panels, determination, dimensional changes, humidity

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**DEPARTMENT OF STANDARDS MALAYSIA**

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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 adopted, 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 Wood-based Panels (NSC 22/TC 3) which supervised the adoption of this ISO Standard as 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 Manufacturers' Association  
Malaysian Timber Council  
Malaysian Timber Industry Board  
Perceptive Profile Sdn Bhd  
Sarawak Timber Industry Development Corporation  
Universiti Putra Malaysia  
Universiti Sains Malaysia  
Universiti Teknologi MARA

The Working Group on Revision of MS 1787 Series (NSC 22/TC 3/WG 8) which recommended the adoption of the ISO Standard as Malaysian Standard consists of representatives from the following organisations:

Besgrade Plywood Sdn Bhd  
Department of Standards Malaysia (Secretariat)  
Dongwha Malaysia Sdn Bhd  
HeveaBoard Berhad  
Forest Research Institute Malaysia  
Malaysian Timber Industry Board  
Universiti Putra Malaysia

## National foreword

The adoption of the ISO Standard as a Malaysian Standard was recommended by the Working Group on Revision of MS 1787 Series, (NSC 22/TC 3/WG 8) under the authority of the National Standards Committee on Timber, Timber Products and Timber Structures (NSC 22).

This first revision of MS 1787-7 cancels and replaces MS 1787 Part 7: 2005, *Wood-based panels – Part 7: Determination of dimensional changes associated with changes in relative humidity*.

This standard is a modified adoption of ISO 16985:2003, *Wood-based panels — Determination of dimensional changes associated with changes in relative humidity*, published by the International Organization for Standardization (ISO) with the following modifications:

a) in the source text, “this International Standard” has been replaced with “this Malaysian Standard”;

b) the comma which is used as a decimal sign after has been replaced by a point (if any);

c) **Clause/Subclause**

**Modifications**

1 Scope

The scope of the standard has been revised.

**Explanation:** To narrow down the types of applicable wood-based panels to fibreboard, particleboard and oriented strand board only, excluding plywood, which is a veneer-based product.

3 Terms and definitions

Addition of new clause

**Explanation:** Clause 3 has been added to this standard following the guidelines on presentation of Malaysian Standards (GSD 1).

5.2 Instrument for length and thickness measurement

Replace “equipment” with “instrument” such that it reads,

“An example of length-measuring instrument is shown in Figure 1.”

**Explanation:** To be standardised with the title of the subclause.

5.6 Hygrometer

Incorporation of the phrase “in the climate chamber”,

“...relative humidity to measure and record the relative air humidity in the climate chamber.”

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### National foreword (continued)

**Explanation:** The phase of “in the climate chamber” is added in order to give a clearer instruction that the relative air humidity refers to the relative air humidity in the climate chamber, not the ambient relative air humidity.

7.1.2 Figure 2

Figure 2 has been redrawn

**Explanation:** Figure 2 has been redrawn to provide a better indication of glass plate (stripe pattern) at both ends of the test piece.

7.1.3 Length-measuring points

Add a new subclause,

“A suitable reference system comprises glass plates with a thickness of at least 1 mm glued to the ends of the test piece.

An alternative reference system consists of metal knobs, placed at a distance of 250 mm apart, approximately 25 mm from each end of test piece. The knobs can be mechanically fastened or glued onto the surface of the test piece. The adhesive shall not be water-based. Other types of markings may be used if proven to give correct results.”

**Explanation:** The length-measuring points procedure is missing in the previous version.

7.4 Drying

Adding of phase “to the nearest 0.01 g”,

“After the test, pieces shall be dried according to MS 1787- 4 and weighed to the nearest 0.01 g.”

**Explanation:** To set a clear precision level.

8.3 Change in thickness

Replace 1000 with 100 in equation (3) and (4)

**Explanation:** The percent value is computed by multiplying the numeric value of the ratio by 100 instead of 1000.

**National foreword** *(continued)*

d) reference to International Standards should be replaced by corresponding Malaysian Standards as follows:

<u>Referenced International Standards</u>	<u>Corresponding Malaysian Standards</u>
ISO 16999, <i>Wood-based panels – Sampling and cutting of test pieces</i>	MS 1787-2, <i>Wood-based panels – Part 2: Sampling and cutting of test pieces</i>
ISO 16979, <i>Wood-based panels – Determination of moisture content</i>	MS 1787-4, <i>Wood-based panels – Part 4: Determination of moisture content</i>

MS 1787 consists of the following parts, under the general title, *Wood-based panels*:

*Part 1: Determination of dimensions of panels*

*Part 2: Sampling and cutting of test pieces*

*Part 3: Determination of dimensions of test pieces*

*Part 4: Determination of moisture content*

*Part 5: Determination of density*

*Part 6: Determination of swelling in thickness after immersion in water*

*Part 7: Determination of dimensional changes associated with changes in relative humidity*

*Part 8: Determination of moisture resistance under cyclic test conditions*

*Part 9: Determination of surface soundness*

*Part 10: Determination of modulus of elasticity in bending and of bending strength*

*Part 11: Determination of tensile strength perpendicular to the plane of the panel*

*Part 12: Determination of wet bending strength*

*Part 13: Determination of screw holding ability*

*Part 14: Determination of formaldehyde content by perforator method*

*Part 15: Determination of formaldehyde emission by desiccator method*

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### **National foreword** *(continued)*

This Malaysian Standard will be used in reference to fibreboard, particleboard and oriented strand board, but does not include plywood.

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

NOTE. MOD on the front cover indicates a modified standard i.e. a standard adapted from an International Standard with permitted technical deviations, which are clearly identified and explained. The changes in structure are permitted provided that the altered structure permits easy comparison of the content of the two standards. Modified standards also include the changes permitted under identical correspondence.