



MALAYSIAN STANDARD

MS 1787: PART 10:2004

WOOD-BASED PANELS – PART 10: DETERMINATION OF MODULUS ELASTICITY IN BENDING AND OF BENDING STRENGTH (ISO 16978:2003, MOD)

ICS: 79.060

Descriptors: wood-based panels, determination, modulus of elasticity, bending strength

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Committee representation

The Building and Civil Engineering Industry Standards Committee (ISC D) under whose authority this Malaysian Standard was developed, comprises representatives from the following organisations:

Association of Consulting Engineers, Malaysia
Chartered Institute of Building Malaysia
Construction Industry Development Board, Malaysia
Department of Standards Malaysia
Jabatan Bomba dan Penyelamat Malaysia
Jabatan Kerja Raya Malaysia
Jabatan Pengairan dan Saliran Malaysia
Jabatan Perumahan Negara
Malaysian Timber Industry Board
Master Builders Association Malaysia
Ministry of International Trade and Industry
Pertubuhan Akitek Malaysia
Suruhanjaya Tenaga
The Institution of Engineers, Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Timber and Timber Products which supervised the development of this Malaysian Standard was managed by the Malaysian Timber Industry Board in its capacity as an authorised Standards-Writing Organisation and consists of representatives from the following organisations:

Construction Industry Development Board, Malaysia
Forestry Department of Peninsular Malaysia
Forestry Department of Sabah
Forest Research Institute Malaysia
Jabatan Kerja Raya Malaysia
Malaysian Furniture Industry Council
Malaysian Panel-products Manufacturers' Association
Malaysian Timber Industry Board (Secretariat)
Malaysian Wood Industries Association
Malaysian Wood Moulding and Joinery Council
Malaysian Wood Preserving Association
Persatuan Pengusaha Kayu Kayan dan Perabot Bumiputera Malaysia
Pertubuhan Akitek Malaysia
Sarawak Timber Industry Development Corporation
SIRIM Berhad
Timber Exporters' Association of Malaysia
Universiti Putra Malaysia

Committee representation *(continued)*

The Subcommittee on Wood-based Panels which developed this Malaysian Standard consists of representatives from the following organisations:

Borden Chemical (M) Sdn Bhd

Dayakuasa Holdings Sdn Bhd

Fine Zone Furniture Sdn Bhd

Forest Research Institute Malaysia

Golden Hope Fibreboard Sdn Bhd

HeveaBoard Bhd

Malayan Adhesives and Chemicals Sdn Bhd

Malaysian Panel-products Manufacturers' Association

Malaysian Timber Industry Board (Secretariat)

Merbok MDF Sdn Bhd

Mieco Chipboard Bhd

Robin Resources (M) Sdn Bhd

Universiti Putra Malaysia

Universiti Sains Malaysia

FOREWORD

This Malaysian Standard was developed by the Subcommittee on Wood-based Panels supervised by the Technical Committee on Timber and Timber Products under the authority of the Building and Civil Engineering Industry Standards Committee. Development of this standard was carried out by the Malaysian Timber Industry Board (MTIB) which is the Standards-Writing Organisation (SWO) appointed by SIRIM Berhad to develop standards for the timber industry.

This standard corresponds to ISO 16978:2003, *Wood-based panels – Determination of modulus of elasticity in bending and of bending strength*, published by the International Organization for Standardization (ISO) with the following modifications:

- a) sub-clause 5.2, paragraph 6, line 1 - the word 'such' has been changed to 'large';
- b) sub-clause 5.2 - the sentence 'Plywood test pieces shall be free of visible strength-reducing characteristics' has been deleted; and
- c) sub-clause 7.1 - the modulus of elasticity ' E_b ', has been replaced with, ' E_m ' .

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*

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 structured permits easy comparison of the content of the two standards. Modified standards also include the changes permitted under identical correspondence.