INTERNATIONAL STANDARD

ISO 27769-1

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Wood-based panels — Wet-process fibreboard —

Part 1: Classifications

Panneaux à base de bois — Panneau de fibres obtenu par procédé humide —

Partie 1: Classifications

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 27769-1 was prepared by Technical Committee ISO/TC 89, *Wood-based panels*, Subcommittee SC 1, *Fibre boards*.

ISO 27769 consists of the following parts, under the general title *Wood-based panels — Wet-process fibreboard*:

— *Part 1: Classifications*

— *Part 2: Requirements*

Wood-based panels — Wet-process fibreboard —

Part 1: Classifications

1 Scope

This part of ISO 27769 provides a classification matrix and related mandatory tests for two types of wet-process fibreboard: softboards and hardboards.

NOTE 1 Wet-process fibreboards are divided into three types: softboards, medium boards and hardboards.

NOTE 2 This part of ISO 27769 is not applicable to medium boards.

NOTE 3 Fibreboards are broadly divided into two groups based on the manufacturing process, namely the dry-process group and the wet-process group. This part of ISO 27769 is not applicable to dry-process fibreboards (see ISO 16895-1 and ISO 16895-2).

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3340, *Fibre building boards — Determination of sand content*

ISO 9426, *Wood-based panels — Determination of dimensions of panels*

ISO 9427, *Wood-based panels — Determination of density*

ISO 16978, *Wood-based panels — Determination of modulus of elasticity in bending and of bending strength*

ISO 16979, *Wood-based panels — Determination of moisture content*

ISO 16981, *Wood-based panels — Determination of surface soundness*

ISO 16983, *Wood-based panels — Determination of swelling in thickness after immersion in water*

ISO 16984, *Wood-based panels — Determination of tensile strength perpendicular to the plane of the panel*

ISO 16985, *Wood-based panels — Determination of dimensional changes associated with changes in relative humidity*

ISO 16998, *Wood-based panels — Determination of moisture resistance — Boil test*

ISO 17064, *Wood-based panels — Fibreboard, particleboard and oriented strand board (OSB) — Vocabulary*

ISO 20585, *Wood-based panels — Determination of wet bending strength after immersion in water at 70 °C or 100 °C (boiling temperature)*

3 Terms, definitions, symbols and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO 17064 and the following terms, definitions, symbols and abbreviated terms apply.

3.1 Terms and definitions

3.1.1
wet-process fibreboard
fibreboard with a forming line moisture content of greater than 20 %, and whose primary bonding results from the felting of the fibres and their inherent adhesive properties

NOTE 1 According to the density, the types of fibreboard are:

a) softboards, of density < 400 kg/m^3;

b) medium boards, of density $\geqslant 400$ kg/m^3 to < 900 kg/m^3;

c) hardboards, of density $\geqslant 900$ kg/m^3.

NOTE 2 Tables for the classification of medium boards are not included in this part of ISO 27769. They can be included as they become available on the international market.

NOTE 3 Density ranges given in product descriptions in 5.2 and 5.3 are a guide. Manufacturers can classify a product as a particular type if the product is within 20 % of the nominated density range and if it has all of the properties of the nominated type.

3.2 Symbols and abbreviated terms

The following abbreviated terms are used in the preparation of the classification matrices in Clause 4:

REG	regular	for use in dry conditions only
MR	moisture resistant	for use in humid conditions
HMR	high moisture resistant	for use in high-humidity conditions
EXT	exterior	for exterior use above ground
LB	load-bearing	for structural or load-bearing use
GP	general purpose	for use in general applications and furniture, not requiring the specific properties of load-bearing grades
DIY	do-it-yourself	for use in home projects, rather than by professional tradespersons
δ	thickness	

NOTE For definitions of the terms dry, humid, high humid, load-bearing and structural, see ISO 17064.

4 Classifications, designation and coding

4.1 General

4.1.1 Classification matrices

Overall classification matrices, which include all major classes available at the time of publication, are given in Table 1 for softboards and in Table 2 for hardboards.

Not all products in the matrix shown in Tables 1 and 2 are currently available or under development. Therefore, realistic property tables can only be developed for existing products. The remainder are potential future products and property tables would be developed when necessary.

4.1.2 Structural grades

When a product is used in a complex load-bearing or structural application, additional information shall be available in the form of characteristic values derived from structural testing (see ISO 16572), experimental test results or history of use to validate its performance under the proposed conditions.

4.2 Softboards

An overall classification matrix, which includes all major classes available at the time of publication, is shown in Table 1. Table 1 allows for future grades to be included as they become available on the international markets.

Table 1 — Classification matrix for softboards

Softboard type	Conditions of use			
	Dry, regular	**Humid**	**High humid**	**Exterior**
SB-GP	REG General purpose softboard	MR General purpose softboard	HMR General purpose softboard	EXT General purpose softboard
Application examples	Partitions, acoustic	Partitions, acoustic, rigid underlays	Advertising	Joints
SB-LB	REG load-bearing softboard	MR load-bearing softboard	No existing product	No existing product
Application examples		Rigid underlays		
Additional attributes such as fire retardant (FR), insect retardant (I) and fungi retardant (F), may be added to the softboard classification of Table 1.				

4.3 Hardboards

An overall classification matrix, which includes all major classes available at the time of publication, is shown in Table 2. This table allows for future grades to be included as they become available on the international markets.

Table 2 — Classification matrix for hardboards

Hardboard type	Conditions of use			
	Dry, regular	Humid	High humid	Exterior
HB-GP	REG General purpose hardboard	MR General purpose hardboard	HMR General purpose hardboard	EXT General purpose hardboard
Application examples	Furniture, doors, packaging, DIY uses	Furniture, doors, packaging, DIY uses, overlay floors	Backer-boards	Siding
HB-LB	REG load-bearing hardboard	MR load-bearing hardboard	No existing product	No existing product
Application examples	Shelving, general construction	General construction		
Additional attributes such as fire retardant (FR), insect retardant (I) and fungi retardant (F), may be added to the hardboard classification of Table 2.				

5 Mandatory tests relating to each grade

5.1 General

The following mandatory tests shown in Tables 3 and 4 shall be applied to the various fibreboard grades identified in Tables 1 and 2, respectively.

All property requirements shall be met at dispatch from the factory.

5.2 Softboards

Table 3 — Tests relating to softboard grades

Property	Method	SB-GP	SB-LB
Dimensions tolerance	ISO 9426	DHME	DH
Density variation	ISO 9427	DHME	DH
Moisture content	ISO 16979	DHME	DH
Bending strength (modulus of rupture)	ISO 16978	DHME	DH
Modulus of elasticity in bending (modulus of elasticity)	ISO 16978	—	DH
Thickness swelling after 2 h	ISO 16983	DHME	DH
D dry conditions. H humid conditions. M high humid conditions. E exterior conditions.			

5.3 Hardboards

Table 4 — Tests relating to hardboard grades

Property	Method	HB-GP	HB-LB
Dimensions tolerance	ISO 9426	DHME	DH
Density variation	ISO 9427	DHME	DH
Moisture content	ISO 16979	DHME	DH
Internal bond strength (IB)	ISO 16984	DHME	DH
Bending strength (modulus of rupture)	ISO 16978	DHME	DH
Modulus of elasticity in bending (modulus of elasticity)	ISO 16978	ME	DH
Thickness swelling after 24 h	ISO 16983	DHME	DH
Moisture resistance Option 1: Internal bond strength after boil test	ISO 16998	HME	H
Option 2: Bending strength after immersion in water at 70 °C	ISO 20585	HME	H
D dry conditions. H humid conditions. M high humid conditions. E exterior conditions.			

5.4 Supplementary properties

If information on supplementary properties is agreed between the user and the manufacturer, it shall be determined using the test methods given in Table 5.

Table 5 — Supplementary properties and test methods

Property	Test method
Surface soundness	ISO 16981
Dimensional changes associated with changes in relative humidity	ISO 16985
Sand content	ISO 3340