INTERNATIONAL STANDARD

ISO 12466-2

First edition
1999-10-15

Plywood — Bonding quality —

Part 2: Requirements

Contreplaqué — Qualité de collage —

Partie 2: Exigences

Reference number
ISO 12466-2:1999(E)

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 part of ISO 12466 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 12466-2 was prepared by Technical Committee ISO/TC 89, *Wood-based panels*, Subcommittee SC 3, *Plywood*.

ISO 12466 consists of the following parts, under the general title *Plywood — Bonding quality*:

— *Part 1: Test methods*

— *Part 2: Requirements*

Plywood — Bonding quality —

Part 2:
Requirements

1 Scope

This part of ISO 12466 specifies requirements for determination of bonding classes of veneer plywood according to their intended end uses.

The appropriate test methods are specified in ISO 12466-1.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 12466. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 12466 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 12466-1, *Plywood — Bonding quality — Part 1: Test methods.*

3 Bonding classes

Bonding quality is categorized into three classes, in accordance with ISO 12465-1, ISO 12465-2 and ISO 12465-3, based upon moisture resistance as follows.

a) Class 1: dry conditions

This bonding class is appropriate for veneer plywood intended for use in normal interior climates.

b) Class 2: humid conditions

This bonding class is appropriate for veneer plywood intended for protected external applications (e.g behind cladding or under roof coverings), but capable of resisting weather exposure for short periods (e.g. when exposed during construction). It is also suitable for interior situations where the service moisture condition is higher than the class 1 level.

c) Class 3: exterior conditions

This bonding class is designed for veneer plywood intended for exposure to weather over sustained periods.

NOTE The durability of plywood depends not only upon the level of bonding performance, but also upon other factors.

4 Requirements

For each pretreatment, both the mean shear strength and the average apparent cohesive wood failure, determined in accordance with ISO 12466-1 for a minimum of ten test pieces per glueline, shall satisfy the criteria given in Table 2 for all three bonding classes.

The pretreatments chosen are related to the bonding class of the plywood veneer, as given in Table 1.

Each pretreatment shall be carried out on a separate set of ten pieces for each glueline.

Table 1 — Pretreatments for the three plywood bonding classes

Bonding class	Pretreatments (in accordance with ISO 12466-1, subclause)			
	5.1 a)	5.1 b)	5.1 c) *	5.1 d)
Class 1: dry conditions	x			
Class 2: humid conditions	x	x		
Class 3: exterior conditions	x		x	x

* When full phenolic glues are used, pretreatment 5.1 c) can be used provided pretreatment 5.1 d) is occasionally used as a test of confirmation.

For all three bonding classes, each glueline shall satisfy two criteria: the mean shear strength and the average apparent cohesive wood failure, as combined in Table 2.

Table 2 — Glueline requirements

Mean shear strength f_v N/mm^2	Average apparent cohesive wood failure %
$0,2 \leqslant f_v < 0,4$	$\geqslant 80$
$0,4 \leqslant f_v < 0,6$	$\geqslant 60$
$0,6 \leqslant f_v < 1,0$	$\geqslant 40$
$1,0 \leqslant f_v$	no requirement

The relationship between the average percentage of apparent cohesive wood failure and the mean shear strength given in Table 2 is illustrated in Figure 1.

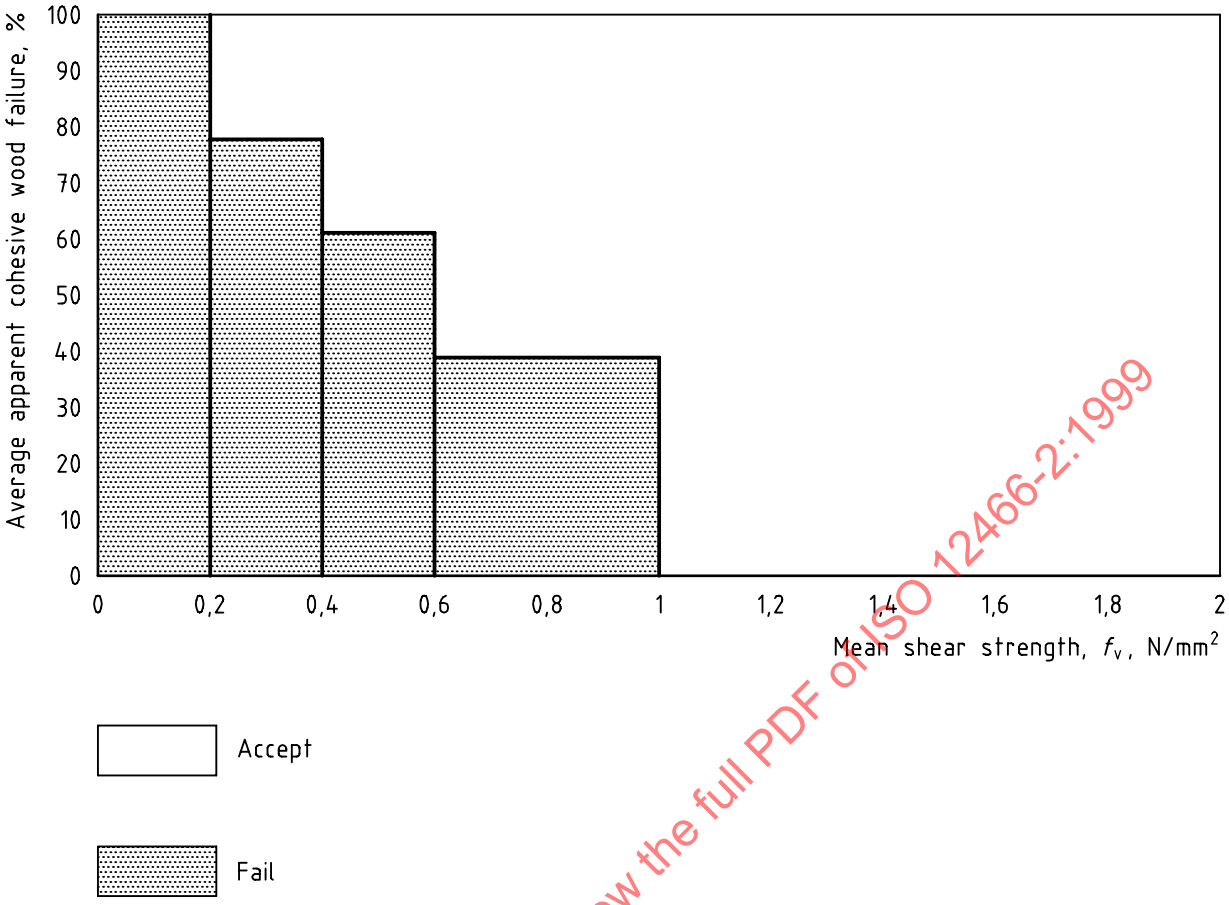

Figure 1 — Relation between average percentage of apparent cohesive wood failure and mean shear strength

5 Determination of bonding class

The comparison of results obtained in accordance with ISO 12466-1 with the requirements defined in this part of ISO 12466 allows determination of the bonding class to which the tested panel belongs.

Bibliography

[1] ISO 1096, *Plywood — Classification.*

[2] ISO 2074, *Plywood — Vocabulary.*

[3] ISO 12465-1, *Plywood — Specifications — Part 1: Requirements for plywood for use in dry conditions.*

[4] ISO 12465-2, *Plywood — Specifications — Part 2: Requirements for plywood for use in humid conditions.*

[5] ISO 12465-3, *Plywood — Specifications — Part 3: Requirements for plywood for use in exterior conditions.*