

Particleboard

Part 5. Code of practice for the selection and application of particleboards for specific purposes

ICS 79.060.20

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

BSI
Documents



Document Sharing Hub

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Technical Sector Board for Building and Civil Engineering (B/-) to Technical Committee B/541, upon which the following bodies were represented:

- APA The Engineered Wood Association
- Association of British Plywood and Veneer Manufacturers
- British Woodworking Federation
- Chartered Institute of Building
- Coordinator for Timber and Timber Products
- Council of the Forest Industries of British Columbia
- Department of the Environment (Building Research Establishment)
- Finnish Plywood International
- Flat Roofing Contractors Advisory Board
- Forestry Commission
- Furniture Industry Research Association
- Institution of Structural Engineers
- Local Authority Organizations
- Mineral Bonded Board Products Federation
- National Federation of Roofing Contractors
- National House-building Council
- National Panel Products Association
- Royal Institute of British Architects
- Structural Board Association
- Timber Research and Development Association
- Timber Trade Federation
- Wood Panel Industries Federation
- Zurich Municipal Building Guarantee

This British Standard, having been prepared under the direction of the Technical Sector Board for Building and Civil Engineering (B/-), was published under the authority of the Standards Board and comes into effect on 15 November 1993

© BSI 1997

First published February 1979
Second edition, in Parts, August 1989
Third edition November 1993

The following BSI references relate to the work on this standard:
Committee reference B/541
Draft for comment 92/19841 DC

ISBN 0 580 22574 7

Amendments issued since publication

Amd. No.	Date	Text affected
8983	April 1996	Indicated by a sideline in the margin
9435	May 1997	Indicated by a sideline in the margin

Contents

	Page
Committees responsible	Inside front cover
Foreword	2
Code of practice	
1 Scope	3
2 References	3
3 Definitions	3
4 Handling, stacking, storage and conditioning	3
5 Application of particleboard in domestic flooring	5
6 Application of particleboard in non-domestic flooring	8
7 Application of particleboard in sheathing	10
8 Application of particleboard in flat roofing	10
9 Application of particleboard in pitched roofing	12
10 Application of particleboards in furniture and built-in fitments	12
Tables	
1 Approximate equilibrium moisture content for different types of particleboard	5
2 Selection of particleboard according to category for domestic flooring	5
3 Joist or batten centres	6
4 Selection of particleboard type for non-domestic flooring according to category of use	8
5 Selection of particleboard for use in flat roofing according to category of use	11
6 Maximum recommended centres of support for particleboard in flat roofs	11
7 Centres of support for particleboard used for lining a pitched roof or tiles or slates	12
8 Selection of particleboards for use in furniture or fitments	13
Figures	
1 Stacking of particleboard	4
2 Positioning of boards over joists	7
List of references	Inside back cover

Foreword

This Part of BS 5669 has been prepared under the direction of the Technical Sector Board for Building and Civil Engineering. It supersedes BS 5669 : Part 5 : 1989 which is withdrawn.

This edition has been prepared to include recommendations for the selection and application of oriented strand board (OSB), as specified in BS 5669 : Part 3. This edition introduces technical changes but it does not reflect a full review or revision of the standard, which will be undertaken in due course.

Since BS 5669 : 1979 was published, the range of particleboards available has continued to grow. The format of the 1979 edition, which covered only four board types, did not permit the expansion necessary to include additional types of particleboard and this revision therefore comprises a series of Parts of BS 5669, as follows:

Part 1 *Methods of sampling, conditioning and test*

Part 2 *Specification for wood chipboard*

Part 3 *Specification for oriented strand board (OSB)*

Part 4 *Specification for cement bonded particleboard*

Part 5 *Code of practice for the selection and application of particleboards for specific purposes*

This is the first time that information on the utilization of such a wide range of wood-based particleboards has been brought together in a single British Standard. Wherever possible reference is made to existing specifications and codes of practice but for a number of end uses not covered elsewhere design considerations are given in this Part of BS 5669.

Omission of any particular end use from this Part of BS 5669 does not signify that particleboard is not suitable for such use. The strength values expressed as quality levels in BS 5669 : Parts 2, 3 and 4 are not suitable for structural design purposes without applying appropriate reduction factors.

NOTE. Grade stresses and modification factors for type C5 wood chipboard, specified in BS 5669 : Part 2, are given in BS 5268 : Part 2.

The definition for particleboard given in **3.1** has been replaced by the definition given in clause **2** of BS EN 309 : 1992.

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

Code of practice

1 Scope

This Part of BS 5669 gives recommendations for the selection and application of particleboard for flooring, sheathing, roofing (both flat and pitched) and furniture manufacture. Recommendations for the handling and storage of these boards are also given.

Methods of test for particleboards are not included in this Part of BS 5669 but are given in BS 5669 : Part 1.

Specifications for each type of particleboard are given in BS 5669 : Parts 2, 3 and 4.

2 References

2.1 Normative references

This Part of BS 5669 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 5669 only when incorporated in it by updating or revision.

2.2 Informative references

This Part of BS 5669 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

For the purposes of this Part of BS 5669, the definitions given in BS 6100 : Section 4.3 : 1984 apply (with the exception of the definition for particleboard in 3.1, which is given in BS EN 309 : 1992, see foreword), together with the following.

3.1 particleboard

Panel material manufactured under pressure and heat from particles of wood (wood flakes, chips, shavings, sawdust, wafers, strands and similar) and/or other lignocellulosic material in particle form (flax shives, hemp shives, bagasse fragments and similar) with the addition of an adhesive.

3.2 cement bonded particleboard¹⁾

Particleboard made from a mixture of wood particles and a hydraulic cement.

3.3 wood chipboard¹⁾

Particleboard made exclusively of small particles of wood and a binder.

3.4 flakeboard¹⁾

Particleboard made from thin, flat, wide and long particles of wood, together with a binder, with the plane of the particles essentially parallel to the face of the board.

3.5 oriented strand board (OSB)¹⁾

Three layered flakeboard in which the grain of the flakes in each of the layers is aligned, the orientation in the centre layer being across the board while the grain of the flakes in the surface layers lies parallel to the long axis of the board.

4 Handling, stacking, storage and conditioning

4.1 General

The recommendations given in 4.2 to 4.5 are fundamental to the maintenance, in first class condition for use, of particleboards under transit or storage and it is essential that they are followed.

4.2 Transport and delivery

Particleboard should be adequately protected by a waterproof covering during all transportation. It is particularly important that the edges are not neglected and are well covered. Boards should be fully protected at the edges from damage by lashings or other banding and should be loaded so as to avoid distortion. Details of board type and quantity should accompany each delivery.

4.3 Handling

The most vulnerable parts of the boards are their edges and corners. Even if the boards are to be further trimmed before use, they should be carefully handled and, if necessary, edges and corners should be additionally protected on site. This particularly applies to profiled boards such as tongued and grooved flooring. Pallets or bundles of board are easily handled by fork-lift trucks either into their place of storage or place of use. When handling boards it is essential to avoid any contamination of the surface likely to cause permanent damage or have an adverse effect on subsequent finishing or finishes.

4.4 Stacking

Boards should be stacked flat on a level surface with all four edges flush. Stacking on edge should be avoided wherever possible. The ideal base is a close-boarded or slatted pallet. If this is not possible the board should be carefully stacked level on battens of equal thickness at centres not exceeding 600 mm (see figure 1a)).

¹⁾ Repeated from BS 6100 : Section 4.3.

The top of the pile should be covered with some kind of protective board to prevent warping of the topmost board. Intermediate bearers are recommended every 10 to 15 boards and it is essential that the bearers are placed directly above those below. The ends of the battens should be equidistant from the long edges of the stack and parallel to the ends. Overhang of the boards at the edges and ends of the stack should not exceed 150 mm at any point.

Where space only permits edge stacking, the edges should not be permitted to come into direct contact with the floor (see figure 1b)). The haphazard leaning of boards against walls should always be discouraged. Where boards with a thickness of 6 mm or less are being stacked it is recommended that support be provided for the entire area of the board by placing a thicker board (18 mm) at the base of the pile (see figure 1c)).

4.5 Storage and conditioning

Particleboards expand on taking up moisture from the surrounding air and shrink on losing it. The boards specified in BS 5669 : Parts 2, 3 and 4 are manufactured to dimensional tolerances allowing close fits to be achieved on jointing and placing the boards into position. Careful storage is therefore very important if the boards are to be maintained in the correct condition for their subsequent use.

All particleboards should be protected from rain and accidental soaking but this is essential for types C1, C1A and C2 wood chipboard and type T1 cement bonded particleboard.

