

**BRITISH STANDARD 1142 : Part 2 : 1971**

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SPECIFICATION FOR  
**FIBRE  
BUILDING BOARDS**



Part 2. Medium board, medium density fibreboard  
(MDF) and hardboard

**BRITISH STANDARDS INSTITUTION**



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# SPECIFICATION FOR FIBRE BUILDING BOARDS

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Part 2. Medium board, medium density fibreboard (MDF) and hardboard

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## BS 1142 : Part 2 : 1971

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The Institution desires to call attention to the fact that this British Standard does not purport to include all the necessary provisions of a contract.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, which may be purchased from BSI Sales Department. It may also be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards:

- BS 476. Fire tests on building materials and structures, Part 7, Surface spread of flame test for materials.
- BS 1142. Fibre building boards. -  
Part 1, Methods of test.
- BS 4330. Recommendations for the co-ordination of dimensions in building. Controlling dimensions.
- BS 4606. Recommendations for the co-ordination of dimensions in building. Co-ordinating sizes for rigid flat sheet materials used in building.
- BS 5669. Specification for wood chipboard and methods of test for particle board.

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*British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.*

The following BSI references relate to the work on this standard:  
Committee reference TIB/10                      Draft for comment 70/9568



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**CO-OPERATING ORGANIZATIONS**

The Timber Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- British Door Association
- British Plastics Federation
- British Woodwork Manufacturers' Association
- \*Department of the Environment—Forest Products Research Laboratory
- \*Department of the Environment—Housing and Construction
- \*Fibre Building Board Development Organization Limited
- Forestry Commission
- Hardwood Flooring Manufacturers' Association
- Institute of Wood Science
- Institution of Civil Engineers
- \*Institution of Municipal Engineers
- Institution of Structural Engineers
- \*National Federation of Building Trades Employers
- National Sawmilling Association
- \*Royal Institute of British Architects
- \*Royal Institute of Chartered Surveyors
- Softwood Agents Brokers' Association
- Timber Container Confederation
- Timber Research and Development Association
- Timber Trade Federation of the UK

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this standard:

- Building Board Manufacturers' Association of Great Britain Ltd.
- Department of the Environment and Fire Offices' Committee—Joint Fire Research Organization
- Fibre Building Board Federation
- Incorporated Association of Architects and Surveyors
- Insulation Building and Hardboard Association Limited
- Modular Society
- Society of Motor Manufacturers and Traders Limited

## BRITISH STANDARD SPECIFICATION FOR

## FIBRE BUILDING BOARDS

Part 2. Medium board, medium density fibreboard  
(MDF) and hardboard

## FOREWORD

This British Standard has been revised under the authority of the Timber Industry Standards Committee and incorporates five principal changes.

(1) The Standard is being issued in three Parts.

Part 1, Methods of test.

Part 2, Medium board, medium density fibreboard (MDF) and hardboard.

Part 3, Insulating board (softboard).



(2) Density is no longer employed as a mandatory defining property for each type of hardboard, although a reference to density is still retained. This recognizes improvements and refinements in manufacturing techniques, inasmuch as required physical properties may now be achieved by the use of additives and/or additional manufacturing processes on boards of reduced density.

(3) The inclusion of medium density fibreboard (MDF). One of its prime properties is its ability to be intricately cut, routed, moulded or embossed and finished to a high standard. Table 1A should be considered as setting base levels for MDF intended for internal use. However, types are available with improved performance characteristics suited to particular applications.



In the case of medium board (including panelboard), Type HME and LME are the most suitable for use in conditions of high relative humidity such as external applications, etc. Both types of tempered hardboard are also suitable for such applications.

The definition of standard hardboard retains only one mandatory test level. However it is recognized that hardboards are available, and perform valid functions adequately, which have properties ranging above and below the test levels for standard hardboard. The expected range of test levels of such hardboards is indicated in Appendix A.

(4) A method of quality control has been adopted.

(5) Metrication: This standard is in metric terms.

(6) Modular co-ordination.

Fibre building boards are manufactured and used in a wide range of sizes, many of these uses being outside the construction industry. For this reason, standard sizes were not specified in BS 1142 : 1961.

It has therefore been considered advisable that for the time being, dimensionally co-ordinated panel sizes will not be given in this standard. However, where a range of boards is manufactured for use in dimensionally co-ordinated buildings

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designed to the controlling reference system given in BS 4330 as a first preference their co-ordinating sizes for length and width should be selected from the sizes given in Clause 3 of BS 4606 : 1970, and in the following British Standards:

BS 4330. Recommendations for the co-ordination of dimensions in building.  
Controlling dimensions.

BS 4606. Recommendations for the co-ordination of dimensions in building.  
Co-ordinating sizes for rigid flat sheet materials used in building.

Methods of test for additional properties have been included where boards may be required for specific purposes. In these circumstances, the supplier should agree on the required level of performance with the customer.

Compliance with test requirements may be verified, either

- (1) by reference to the manufacturers, or
- (2) by consignment testing.

Routine tests made by the manufacturer during the course of production are generally to be preferred to tests made on samples drawn from consignments, because a manufacturer can test a sufficient number of samples of a particular type of board to provide accurate estimates of the true average values of the properties concerned and the variations that occur in these properties. If consignment testing is required information is given on how to do this in Part 1.



Many materials used in the construction and finishes of buildings are known to be capable of emitting small amounts of formaldehyde gas, MDF being an example. Very low concentrations of this gas, less than 2 parts per million for an average adult, can produce discomfort and irritation in the eyes. Rare cases of discomfort levels have been reported, and in some of these the source was MDF.

The highest emissions of formaldehyde occur soon after the board is manufactured. The application of paint, lacquer, varnish, or other overlays can reduce the risk of formaldehyde emission; conversely, the risk of discomfort levels arising is increased by poor ventilation, excessive humidity and/or heat. All these factors should, therefore, be noted by designers and specifiers where the application of MDF is being considered. Discomfort caused by the emission of formaldehyde is most unlikely to occur unless large quantities of MDF are used in unventilated areas.

The method of determining the extractable formaldehyde content is based on work by FESYP (Fédération Européenne des Syndicats des Fabricants de Panneaux de Particules) and is included in Part 1 of this standard. Its technical content is identical to that given in BS 5669.

Guidance on the use of medium board and hardboard in flat roofs is given in Appendix B.

## SPECIFICATION

### 1. GENERAL

#### 1.1 SCOPE

Part 2 of this British Standard specifies requirements for medium board and hardboards as defined in 1.3.

NOTE. The titles of the British Standards referred to in this standard are listed on page 2.

#### 1.2 CLASSIFICATION

Fibre building boards are conveniently classified into the following main types: medium board, medium density fibreboard (MDF) and hardboards as defined below and softboards as defined in Part 3 of this standard.

In addition, a number of special purpose boards are produced by treating or other processing during or after manufacture to modify certain properties, including resistance to flame spread and resistance to fungal and insect attack. Boards may also be produced with improved surface characteristics or with surfaces specially prepared. Decorative effects may be achieved by processing during or after manufacture.



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