

*Draft Indian Standard***PULP BOARD— SPECIFICATION***(Second Revision)*

भारतीय मानक मसौदा

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ICS 85.060, 85.080

Paper Based Packaging Materials Sectional
Committee, CHD 16**Last date of comments: 28 12 2022****FOREWORD***(Formal clause shall be added later)*

This standard is formulated to define the quality of pulp boards and to ensure the supply of proper quality of such boards to the consumer. These boards are made from 100 percent chemical pulp and are used as postcards, publicity cards, chart papers, etc. Pulp board as covered in this standard shall be of two grades, namely, Grade G for general purposes and Grade S for special purposes.

This standard was originally published in 1968 and was based on data made available by various organizations especially the Forest Research Institute and Colleges, Dehra Dun. In first revision, the requirement of burst factor was replaced by burst index. Further, the requirement of pH and moisture content were introduced for Grade G.

A scheme for labelling environment friendly products to be known as ECO Mark was introduced in the standard at the instance of the Ministry of Environment, Forests & Climate Change (MoEF&CC). The ECO Mark is administered by the Bureau of Indian Standards (BIS).

In this second revision, requirement of Cobb test has been included. It also incorporates amendments issued to the last version of the standard. The test methods have been updated too.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2:2022 'Rules for rounding off numerical values'. The number

of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1 SCOPE

1.1 This standard prescribes the requirement, methods of sampling and test for pulp board.

2 REFERENCES

2.1 The standards listed in Annex A contain provisions which through reference in this text, constitute provisions of and necessary adjuncts to this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated in Annex A.

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions given in IS 4661 (part 1 to 5) and the following shall apply.

3.1.1 *Pulp Board*

Board manufactured in one layer or by bringing two or more than two plies of the same furnish into a single structure in the wet state without the use of an adhesive.

4 GRADES

4.1 The pulp board shall be of the following two grades:

- a) Grade G — for general purposes, and
- b) Grade S — for special purposes.

5 REQUIREMENTS

5.1 General

The board shall be uniform in thickness; free from holes, hard spots and lumps; shall be flat and, dimensionally stable. The printing surface shall be smooth, of even finish, formation, absorbency and colour. Both sides of the board shall be clean and free from loosely bound fibres. The boards may be white or coloured.

5.2 Thickness

The thickness of the pulp board shall be as agreed to between the buyer and the supplier. When tested in accordance with IS 1060 (part 5/sec 3), the following tolerances shall be allowed on the nominal thickness:

Nominal Thickness

Tolerance

500 micrometres and below
501 micrometres and above

± 20 micrometres
± 25 micrometres

5.3 Grammage (Substance)

The nominal grammage of the pulp board shall be as agreed to between the buyer and the supplier. However, when tested as per IS 1060 (part 5/sec 5), no single test result shall vary by more than ± 6 percent from nominal grammage. Further, the mean of 10 test results shall not vary from nominal grammage by more than ± 4 percent.

5.4 Size

The sizes of the pulp board shall be one of the sizes as in **5** of IS 1064 or as agreed to between the buyer and the supplier. The tolerance on the size shall be as in **6** of IS 1064.

5.5 The brightness for whiter paper board shall be 75 minimum when tested as per IS 1060 (part 4/sec 13).

5.6 The board shall also comply with the requirements given in Table 1 when tested in accordance with the method referred in col **5** of Table 1.

TABLE 1 REQUIREMENTS FOR PULP BOARD

(Clause 5.6)

Sl No.	Characteristic	Requirements		Method of Test
		Grade G	Grade S	
(1)	(2)	(3)	(4)	(5)
i)	Burst index, kPa m ² /g <i>Min</i>	1.00	1.00	IS 1060 (Part 6/Sec 2)
ii)	Ash, percent, <i>Max</i>	15	15	IS 1060 (Part 4/ Sec 2)
iii)	pH	5.5 to 7.5	5.5 to 7.5	IS 1060 (Part 4/Sec 7)
iv)	Moisture content, percent by mass, <i>Max</i>	6	6	IS 1060 (Part 5/Sec 2)
v)	Lead (as Pb), percent by mass, <i>Max</i>	—	0.2	16 of IS 1060 (Part 2)
vi)	Chlorides (as NaCl), percent by mass, <i>Max</i>	—	0.1	17 of IS 1060 (Part 2)
vii)	Sulphates (as Na ₂ SO ₄), percent by mass, <i>Max</i>	—	0.25	18 of IS 1060 (Part 2)
viii)	Fatty and or similar acids, percent by mass, <i>Max</i>	—	0.25	19 of IS 1060 (Part 2)
ix)	Ether solubles, percent by mass, <i>Max</i>	—	1.0	20 of IS 1060 (Part 2)
x)	Cobb (60 min), g/m ²			IS 1060 (Part 5/Sec 4)
	Top	30.0 – 40.0	30.0 – 40.0	
	Back	40.0 – 50.0	40.0 – 50.0	

Burst index = Burst factor \times 0.098.

5.7 Additional Requirements for ECO Mark

5.7.1 General Requirements

5.7.1.1 The product shall conform to the requirements for quality and performance prescribed under clauses **5.1** to **5.7**.

5.7.1.2 The manufacturer shall produce to BIS, the environmental consent clearance from the concerned State Pollution Control Board as per the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 along with the authorization, if required, under the Environment (Protection) Act, 1986 and the rules made thereunder, while applying for ECO Mark.

5.7.2 Specific Requirements

5.7.2.1 The material shall be of the following two types depending on the raw material used in the manufacture:

- Manufactured from pulp containing not less than 60 percent by mass of pulp made from materials other than bamboo, hard woods, soft woods and reed.
- Manufactured from pulp made from 100 percent waste paper.

6 PACKING AND MARKING

6.1 Fifty or hundred boards shall be wrapped in paper to form a packet. The packing of pulp board shall be done so as to ensure that the paper is not damaged due to handling and transportation and shall be as agreed to between the buyer and the supplier.

6.1.1 For ECO Mark, the product shall be packed in such packages which shall be recyclable/reusable or biodegradable.

6.2 Each package and reel shall be marked with the following particulars:

- a) Description and grade of the material;
- b) Thickness in micrometres and substance in g/m^2 ;
- c) Size and number of sheets, in the case of package and length and width of reel, in the case of reels;
- d) Mass, in kg of the package including wrapping paper, in the case of package; and mass, in kg of the reel including the mass of the core and plugs in the case of reels;
- e) Lot number;
- f) Date of manufacture; and
- g) Manufacturer's name or recognized trade-mark, if any.

6.2.1 BIS Certification Marking

The product may also be marked with the Standard Mark.

6.2.1.1 The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the Bureau of Indian Standards Act, 2016 and the Rules and Regulations framed there under, and the products may be marked with the standard mark.

6.2.2 For ECO Mark, following additional information may also be marked on the container/package:

The criteria for which the product has been labelled with ECO Mark.

7 SAMPLING AND CRITERIA OF CONFORMITY

7.1 The pulp board shall be sampled in accordance with **4** of IS 1060 (Part 1).

7.2 Tests

From each of the packets selected from the lot (*see 7.1*), one sheet shall be taken out at random. These sheets shall constitute the sample. The sheets selected shall first be tested for general requirements given in **5.1**. One test piece shall be cut from each sheet selected for each of the characteristics mentioned in Table 1 and tested. A sheet not meeting the requirements for any one or more characteristics shall be considered as defective.

7.3 Criterion for Conformity

A lot shall be declared as conforming to all the requirements of this specification if the number of defective sheets found does not exceed the acceptance number. This acceptance number shall depend upon the size of the sample and shall be zero if the size is less than 13 and 1 if it is greater than or equal to 13.

ANNEX A (Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>
1060 (Part 1) : 2022	Methods of Sampling and Test for Paper and Allied Products Part 1 Test Methods for General Purpose
IS 1060 (Part 2) : 1960	Methods of sampling and test for paper and allied products: Part 2
IS 1060 (Part 4/Sec 2) : 2018	Methods of sampling and test for paper and allied products: Part 4 methods of test for paper, board and pulps: Sec 2 determination of residue (Ash) on ignition at 525°C
IS 1060 (Part 4 / Sec 7) : 2018	Methods of sampling and test for paper and allied products: Part 4 methods of test for paper, board and pulp: Sec 7 determination of pH of aqueous extracts - Hot extraction method

IS 1060 (Part 4/Sec 13) : 2020	Methods of Sampling and Test for Paper and Allied Products Part 4 Methods of Test for Paper, Board and Pulps Sec 13 Measurement of diffuse blue reflectance factor Indoor daylight conditions (ISO brightness)
1060 (Part 5/Sec 2):2021	Methods of Sampling and Test for Paper and Allied Products Part 5 Methods of Test for Paper and Board Sec 2 Determination of moisture content of a lot Oven drying method
IS 1060 (Part 5/Sec 3) : 2014	Methods of sampling and test for paper and allied products: Part 5 methods of test for paper and board: Sec 3 determination of thickness, density and specific volume
IS 1060 (Part 5/Sec 4) : 2014	Methods of sampling and test for paper and allied products: Part 5 methods of test for paper and board: Sec 4 determination of water absorptiveness - Cobb method
IS 1060 (Part 5/Sec 5) : 2021	Methods of Sampling and Test for Paper and Allied Products : Part 5 Methods of Test for Paper and Board: Sec 5 Determination of Grammage
IS 1060 (Part 6 / Sec 2) : 2014	Methods of sampling and test for paper and allied products: Part 6 methods of test for paper: Sec 2 determination of bursting strength of paper
IS 1064 : 1980	Specification for Paper Sizes
IS 4661 (Part 1) : 2022	Paper Board Pulps and Related Terms Vocabulary Part 1: Alphabetical Index
IS 4661 (Part 2) : 2022	Paper Board Pulps and Related Terms Vocabulary Part 2: Pulping Terminology
IS 4661 (Part 3) : 2022	Paper Board Pulps and Related Terms Vocabulary Part 3 Paper Making Terminology
IS 4661 (Part 4) : 2022	Paper Board Pulps and Related Terms Vocabulary Part 4 Paper and Board Grades and Converted Products
IS 4661 (Part 5) : 2022	Paper Board Pulps and Related Terms Vocabulary Part 5 Properties of Pulp Paper and Board