

भारतीय मानक मसौदा

पैकेजिंग के लिए हस्तनिर्मित कागज़ — विशिष्टि

Draft Indian Standard

Handmade Paper for Packaging — Specification

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ICS 85.080.10

Paper and Paper Products Sectional Committee,
CHD 15

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FOREWORD

(formal text shall be added later)

Handmade paper is crafted by hand using traditional methods, rather than being mass-produced by machines. It involves a process of pulping natural fibers, spreading the pulp on a screen, draining and drying the sheet, ultimately resulting in a unique and textured piece of paper. Considering the growing demand for handmade paper due to aesthetics and environment awareness, as well as to support the handmade paper industry, the Committee decided to formulate Indian standards for different types of handmade paper.

A suggestive list of alternative ligno-cellulosic raw materials is given as Annex B.

This standard contains **5.2.1, 5.3, 5.4, 5.8** and **5.1** which call for agreement between the purchaser and the supplier.

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 (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard

HANDMADE PAPER FOR PACKAGING — SPECIFICATION

1 SCOPE

This standard prescribes requirements and method of sampling and test for handmade paper for general purpose packaging.

2 REFERENCES

The standards listed in Annex A contain provisions, which through reference in this text, constitute provisions of 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 edition of these standards.

3 TERMINOLOGY

For the purpose of this Standard, the definition of terms given in IS 4661 (Part 4) shall apply.

4 GRADES

Handmade paper shall be of four grades, namely, A, B, C and D, based on the requirements prescribed in Table 1.

5 REQUIREMENTS

5.1 Handmade paper for general purpose packaging shall be of uniform formation, evenly finished and free from specks, holes and other blemishes. When tested according to IS 5285, the furnish for all varieties shall contain minimum of 50 percent cotton rags or alternative ligno-cellulosic raw materials.

5.2 Substance

5.2.1 The substance of the material shall be as agreed to between the manufacturer and purchaser.

5.2.2 For determination of substance, select 10 sheet at random and cut from each, a test piece of size not less than 20 cm × 25 cm. The mean of ten (10) test results shall not vary from the nominal substance by more than ± 5 percent, when tested according to the method prescribed in IS 1060 (Part 5/Sec 5). No single test result shall vary by more than ± 10 percent from the nominal substance.

5.3 Sizes and Tolerance

5.3.1 Trimmed sizes of handmade paper for carry bags shall be in accordance with IS 1065. The permissible tolerance on size shall be ± 3 mm. Further, additional sizes may be agreed to between the purchaser and the supplier.

5.3.2 A tolerance of ± 10 percent shall be permitted on the nominal thickness, if specified by the purchaser, when tested according to IS 1060 (Part 5/Sec 3).

5.4 The handmade paper for general purpose packaging shall also comply with the requirements given in Table 1.

Table 1 Requirements of Handmade Paper for Packaging

(Clauses 4, 5.4 and 7.2)

Sl No.	Characteristics	Requirements				Method of test, Ref to
		Grade A	Grade B	Grade C	Grade D	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Tensile index, Nm/g, <i>Min</i>	20	18	16	14	IS 1060 (Part 5/Sec 6)
ii)	Tear index, mN.m ² /g, <i>Min</i>	9.0	8	7	6.5	IS 1060 (Part 6/Sec 1)
iii)	Burst index, kPa.m ² /g, <i>Min</i>	2.0	1.8	1.5	1.0	IS 1060 (Part 6/Sec 2)
iv)	pH	6.5 to 8	6.5 to 8	6.5 to 8	6.5 to 8	IS 1060 (Part 4/Sec 7)
v)	Moisture, percent, <i>Max</i>	10	10	10	10	IS 1060 (Part 5/Sec 2)

NOTE — There is no demarcation of machine direction and cross direction in handmade paper therefore all the characteristics as mentioned in Table 1 can be tested in any direction.

5.5 Handmade paper for packaging may also be tinted. In the case of tinted paper, the color should be an approximate match to the shade approved by the purchaser.

5.6 Optional Requirements

5.6.1 The handmade paper for packaging should have smoothness of minimum 16.0 s/200 ml, when tested in accordance with IS 9895.

5.6.2 In case of paper on which printing is intended to be carried out, water absorptiveness (Cobb₆₀) shall be at least 25 g/m² when tested in accordance with IS 1060 (Part 5/Sec 4).

6 PACKING AND MARKING

6.1 Packing

The packing of paper shall be done as to ensure that the paper is not damaged and handling and transportation and shall be as agreed between the purchaser and the supplier (*see* IS 6211).

6.2 Marking

6.2.1 Each package shall be marked with the following particulars:

- a) Description and substance in g/m² of the paper;

- b) Size of the paper;
- c) Mass in kg of ream including sheets and package;
- d) Number of sheets in ream;
- e) Lot/batch number;
- f) Month and year of manufacture; and
- g) Name of the manufacturer.

6.2.2 BIS Certification Marking

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.

7 SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Sampling

Representative samples for test shall be drawn as given in **4** of IS 1060 (Part 1).

7.2 Number of Tests

At least 10 sheets/units should be selected from a ream of 500 sheets as per IS 1060 (Part 1). Each of the selected units shall first be tested for requirements given in **5.1**. Then from each of these units, number of sheets sufficient to carry out all tests Specified in Table 1 shall be taken out at random. The sheets shall first be examined for the requirements given in **5.2** to **5.6**, then number of test piece for each of the characteristic as indicated in its test method shall be cut from them. These pieces shall be tested according to the method specified in Table 1.

7.3 Criterion for Conformity

The lot shall be declared as conforming to the requirements of the standard, if all the test results meets the relevant requirements.

ANNEX A

(Clause 2)

LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>
IS 1060	Methods of sampling and test for paper and allied products:
(Part 1) : 2022	Test methods for general purpose (<i>second revision</i>)
(Part 4/Sec 7) : 2024/ISO 6588-2 : 2021	Methods of test for paper, board and pulps, Sec 7 Determination of pH of aqueous extracts — Hot extraction method (<i>first revision</i>)
(Part 5)	Methods of test for paper and board
(Sec 2) : 2021/ISO 287:2017	Determination of moisture content of a lot – Oven drying method (<i>first revision</i>)
(Sec 3) : 2014/ISO 534 : 2011	Determination of thickness, density and specific volume
(Sec 4) : 2024/ISO 535: 2023	Determination of Water Absorptiveness – Cobb Method (<i>first revision</i>)
(Sec 5) : 2021/ISO 536 : 2019	Determination of grammage (<i>first revision</i>)
(Sec 6) : 2014/ISO 1942-2 : 2008	Determination of tensile properties — Constant rate of elongation method (20 mm/min)
(Sec 14) : 2014/ ISO 5636-5 : 2013	Determination of air permeance and air resistance (Medium Range) - Gurley method
(Part 6)	Methods of test for paper,
(Sec 1) : 2014/ ISO 1974 : 2012	Methods of test for paper, Section 1 Determination of tearing resistance — Elmendorf method
(Sec 2) : 2024/ISO 2758 : 2014	Determination of bursting strength of paper (<i>first revision</i>)
IS 1064 : 1980	Specification for paper sizes (<i>second revision</i>)
IS 4661 (Part 4) : 2022/ ISO 4046-4 : 2016	Paper board pulps and related terms — Vocabulary: Part 4 Paper and board grades and converted products (<i>third revision</i>)
IS 5285 : 2024	Fibre analysis of paper and paper board — Methods of test (<i>second revision</i>)
IS 6211 : 1993	Code of practice for packing of paper and board (<i>first revision</i>)
IS 9894:1981	Method of test for smoothness/ roughness of paper

ANNEX B

(Foreword) (Informative)

SUGGESTIVE ALTERNATIVE LIGNO-CELLULOSIC RAW MATERIALS

<i>Sl No.</i>	<i>Alternative ligno-cellulosic raw material</i>	<i>Botanical name</i>
(1)	(2)	(3)
i)	Sunn Hemp	Crotolaria Juncea
ii)	Bhimal	Grewia Oppositifolia Roxb.
iii)	Jute	Corchorus capsularis
iv)	Kheep	Leptadenia Pyrotechnica
v)	Bodha grass	Chloroxylon coloratus
vi)	Wheat straw	Triticum Vulgare
vii)	Rice straw	Oryza Sativa
viii)	Bagasse	Saccharum Officinarum
ix)	Bamboo	Bambusa Vulgaris