भारतीय मानक

Indian Standard

IS 14490 : 2024

प्रतिलिपि के लिए सादा कागज़ — विशिष्टि

(दूसरा पुनरीक्षण)

Plain Copier Paper — Specification

(Second Revision)

ICS 85.060

भारतीय मानक ब्यूरो
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September 2024 **Price Group 5**

Paper and its Products Sectional Committee, CHD 15

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Paper and its Products Sectional Committee had been approved by the Chemical Division Council.

The myth that any ordinary paper of indeterminate quality can be handled successfully by plain paper copier, cause never ending customer dissatisfaction and service engineer frustration. It is a fact that plain paper copiers can tolerate only certain grades of paper. The plain copier paper is commonly known as photocopier paper.

This standard was first published in 1997 and subsequently revised in 2018. In the first revision, the standard was technical revised which besides amalgamation of amendments, had modification of the scope, incorporation of the requirement for additional variety having 70 GSM in grammage clause and cut sizes relevant to this product in size clause, upgradation of the requirement of brightness and opacity, modification of the requirement of ash content, moisture and thickness and in the packing clause, introduction of a recommendatory clause for selection of raw material and its source for manufacturing copier paper for guidance purpose (Annex B), and updation of references of latest available test method standards.

Considering technological advancements in the manufacture, the committee responsible for development of this standard has decided to revise this standard. In this revision, the following modifications have been incorporated:

a) The scope has been updated;

b) The reference clause has been updated;

c) General requirement clause has been modified;

d) Additional variety of 100 GSM has been incorporated in the grammage clause;

e) Method of tests for ISO brightness, smoothness for both sides (Bendsten), ash content (at 900 °C) and taber stiffness have been updated;

f) A separate clause for conditioning and testing of samples has been incorporated;

g) Packaging and marking clause has been modified; and

h) All amendments issued to the last version of the standard have been amalgamated.

This standard covers the requirements for paper intended for photocopy purpose under the grammages prescribed in the standard. Paper under any other commonly used commercial names, such as multipurpose/printing/writing paper etc, in grammages except those covered in this standard are not intended to be used for photocopy purpose.

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

This standard contains **6.1.1**, **6.1.2** and **6.2.1** which call for agreement between the purchaser and the supplier.

The composition of the Committee responsible for the formulation of this standard is given in Annex C.

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.

Indian Standard

PLAIN COPIER PAPER — SPECIFICATION

(Second Revision)

1 SCOPE

This standard prescribes requirements and methods of sampling and tests for plain copier paper.

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 definitions of terms given in IS 4661 (Part 5) shall apply.

4 MATERIAL

The reel/sheets intended for manufacturing of plain copier paper (cut size) shall conform to requirements of this standard.

5 REQUIREMENTS

5.1 General

5.1.1 The plain copier paper shall be devoid of pinholes when examined visually (*see* Note 1). The surface shall be well calendared, quite smooth and free from fluff or loose fibers when tested in accordance with IS 1060 (Part 5/Sec 20) and IS 1060 (Part 3). Surface sizing is desirable for avoiding fluff (*see* Note 2).

NOTES

1 Eye unaided by any instrument (other than spectacles for eyesight problem) that changes the apparent size or distance of an object.

2 In case of surface sized paper, chemicals sensitive to heat should be avoided as the waxes and some polymers may adhere to photo conductor surface causing defects in photocopy.

5.1.2 The paper shall have good dimensional stability, thermal stability and shall not have any static charge.

NOTE — A declaration regarding conformity of above may be obtained from the manufacturer.

5.2 Moisture

Moisture content shall be 3 percent to 6 percent when tested in accordance with IS 1060 (Part 5/Sec 2).

5.3 Grammage (Substance)

5.3.1 The grammage (substance) of plain copier paper shall be either of 65 g per square metre or 70 g per square metre or 75 g per square metre or 80 g per square metre or 90 g per square metre or 100 g per square, when tested as per IS 1060 (Part 5/Sec 5).

5.3.2 No single test result shall vary by more than ± 4 percent from the nominal grammage. Further the mean value of 10 test results shall not vary from the nominal grammage by more than ± 2.5 percent.

5.4 Thickness

The uniform thickness of paper shall be as follows when tested as per IS 1060 (Part 5/Sec 3)

a) ≥ 95 µm when grammage is 70 g per square metre or above; and

b) ≥ 90 µm when grammage is 65 g per square metre.

5.5 Size

The paper shall be cut size paper in A3, A4, A5, B4, B5, FS, legal sizes or in reels within the permissible tolerance according to IS 1064.

5.6 The paper shall also comply with the requirements given in Table 1.

5.7 The paper shall be tested according to the conditions specified in IS 1060 (Part 4/Sec 1). Before testing, the paper shall be subjected to conditioning as specified in IS 1060 (Part 4/ Sec 1).

5.8 Additional Requirements for Eco-Mark

5.8.1 *General Requirements*

5.8.1.1 The product shall conform to the requirements for quality and performance prescribed under **5.1** to **5.5**.

5.8.1.2 The manufacturers shall produce to BIS, environmental consent clearance from the concerned Slate 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 while applying for Eco-Mark.

5.8.2 *Specific Requirements*:

a) The material shall be 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; and

b) The material shall be manufactured from pulp made from 100 percent waste paper.

Table 1 Requirements for Plain Copier Paper

(*Clauses* 5.6 *and* 7.2)

Sl No.	Characteristic	Requirements	Methods of Tests, Ref to
(1)	(2)	(3)	(4)
i)	ISO brightness, percent, *Min*	85	IS 1060 (Part 4/Sec 13)
ii)	Opacity, percent, *Min*	88	IS/ISO 2471
iii)	One minute cobb test, both sides, g/m^2, *Max*	30	IS 1060 (Part 5/Sec 4)
iv)	Surface strength, Dennison (Wax Pick)	No pick on 12A	IS 1060 (Part 3)
v)	Smoothness for both sides (Bendsten), ml/min, *Max*	300	IS 1060 (Part 5/ Sec 20)
vi)	Ash content (at 900 °C), percent by mass, *Max*	16	IS 1060 (Part 4/ Sec 3)
vii)	Taber stiffness, *Min*:		IS 1060 (Part 5/ Sec 8)
	a) Machine direction (MD)	2.0	
	b) Cross direction (CD)	1.0	
viii)	Tear Index, mN.m^2/g, *Min*:		IS 1060 (Part 6/Sec 1)
	a) Machine direction (MD)	3.5	
	b) Cross direction (CD)	4.5	
ix)	Tensile index, N.m/g, *Min*:		IS 1060 (Part 5/Sec 6)
	a) Machine direction (MD)	40	
	b) Cross direction (CD)	25	

NOTE — Requirement of brightness shall be applicable for white paper only.

6 PACKING AND MARKING

6.1 Packing

6.1.1 *Reams*

6.1.1.1 Each ream containing 500 sheets of paper or a packet of 250 sheets of paper shall be wrapped in such packaging that it shall prevent moisture absorption and shall be strong enough to avoid any external impact during transit and shall reach to end user in intact condition. It shall then be packed in suitable packaging material to ensure that the paper is not damaged due to handling and transportation or shall be packed as agreed to between the purchaser and the supplier. The maximum weight per carton/ package should not be more than 40 kg.

6.1.1.2 The paper may also be provided in 100/50 sheet package format.

6.1.2 *Reels*

Each reel shall be packed as agreed to between the purchaser and the supplier.

6.1.3 For Eco-Mark, the product shall be packed in such packages in a bundle or individual package which is recyclable/reusable/biodegradable.

6.2 Marking

6.2.1 The package shall be marked with the following particulars:

a) Description and size of the paper;

b) Quantity;

c) Mass of 500/250/100/50 sheets including wrapping paper, in kg/ream or chargeable/gross weight of reel as agreed between the purchaser and supplier. Chargeable weight should be read as net weight excluding the weight of packing.

d) Lot number, month and year of manufacture;

e) Name of manufacturer; and

f) Any other statutory marking.

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'.

6.2.3 *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 thereunder, and the products may be marked with the Standard Mark.

7 SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Sampling

The plain copier paper shall be sampled in accordance with IS 1060 (Part 1).

7.2 Number of Tests

From each of the ream/ reel, selected from the lot (*see* **7.1**), one sheet shall be taken out at random from each ream subject to total minimum 10 sheets, if selected reams are less than 10. These sheets shall constitute the sample. The sheets selected shall first be tested for general requirements given in **5.1** and **5.6**. One test piece shall be cut from each sheet selected for each of the characteristics mentioned in **5.2** to **5.4** and Table 1 and tested. A sheet not meeting the requirements for any one or more characteristics shall be considered as defective.

7.3 Criteria for Conformity

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

ANNEX A

(*Clause* 2)

LIST OF REFERRED STANDARDS

IS No.	*Title*
IS 1060	Methods of sampling and test for paper and allied products:
(Part 1) : 2022	Test methods for general purpose (*second revision*)
(Part 3) : 1969	Methods of sampling and test for paper and allied products: Part 3,
(Part 4)	Methods of test for paper, board and pulps,
(Sec 1) : 2014/ ISO 187 : 1990	Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples
(Sec 3) : 2018/ ISO 2144 : 2015	Determination of residue (ash) on ignition at 900 °C
(Sec 13) : 2020/ ISO 2470-1 : 2016	Measurement of diffuse blue reflectance factor — Indoor daylight conditions (ISO brightness) (*first revision*)
(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 (*first revision*)
(Sec 3) : 2014/ ISO 534 : 2011	Determination of thickness, density and specific volume
(Sec 4) : 2014/ ISO 535 : 1991	Determination of water absorptiveness — Cobb method
(Sec 5) : 2021/ ISO 536 : 2019	Determination of grammage (*first revision*)
(Sec 6) : 2014/ ISO 1924-2 : 2008	Determination of tensile properties — Constant rate of elongation method (20 mm/min)
(Sec 8) : 2018/ ISO 8791-2 : 2013	Determination of bending resistance — Taber-type tester (*first revision*)
(Sec 20) : 2024/ ISO 2493-2 : 2020	Determination of roughness/smoothness (air leak methods) — Bendtsen method
(Part 6/Sec 1) : 2014/ISO 1974 : 2012	Methods of test for paper, Section 1 Determination of tearing resistance — Elmendorf method
IS 1064 : 1980	Specification for Paper sizes (*second revision*)
IS 4661 (Part 5) : 2022/ISO 4046 -5 : 2016	Paper board pulps and related terms — Vocabulary: Part 5 Properties of pulp paper and board (*third revision*)
IS/ISO 2471 : 2008	Paper and board — Determination of opacity (paper backing) — Diffuse reflectance method

ANNEX B

(*Foreword*)

RECOMMENDATION FOR RAW MATERIALS AND ITS SOURCE (FOR GUIDANCE ONLY)

B-1 To reduce the load on natural forest and to meet the need of raw material for making of pulp and paper, the alternate sources of fibrous natural substrate is also recommended. Thus, the following raw material are also recommended for manufacturing of plain copier paper which may be obtained from sources as given below:

a) Fibrous raw materials wood/bamboo sourced from social farm forestry or state forest corporations or pulp procured with FSC conformity;

b) Non wood fibre sources from agro residues such as bagasse, wheat straw, sarkanda or similar products; and

c) Recycled paper sources such as white cuttings/cleaned deinked pulp.

ANNEX C

(*Foreword*)

COMMITTEE COMPOSITION

Paper and its Product Sectional Committee, CHD 15

Organization	*Representative*(*s*)
Central Pulp and Paper Research Institute, Saharanpur	DR L. P. SINGH **(*Chairperson*)**
Bilt Graphic Paper Products Ltd, New Delhi	SHRI DEEPAK KUMAR SHARMA SHRI BHUSHAN AWATE (*Alternate*)
Central Pulp & Paper Research Institute, Saharanpur	DR SANJAY TYAGI SHRI ALOK KUMAR GOEL (*Alternate* I)
Century Pulp and Paper Mills, Nainital	SHRI SANJAY KUMAR YADAV SHRI HEM CHANDRA JOSHI (*Alternate*)
Chandpur Enterprises Ltd, Chandpur	SHRI DEVESH KUMAR SINGHAL SHRI DHAWAL SINGHAL (*Alternate*)
Consumer Voice, New Delhi	SHRI M. A. U. KHAN DR RAJIV JHA (*Alternate* I) SHRI H. Wadhwa (*Alternate* II)
DPIIT, Min. of Commerce & Industry, New Delhi	SHRI RAJESH RAWAT
Directorate General of Quality Assurance, Ministry of Defence, Kanpur	SHRI D. K. PUJARI SHRI K. I. SINGH (*Alternate*)
Directorate of Printing, Min. of Urban Development, New Delhi	SHRI LAZAR SAGAYA RAJ SHRI KSHITIZ MOHAN (*Alternate*)
Federation of Paper Converters of India, New Delhi	SHRI SUSHIL KUMAR SINGH SHRI VISHAL KAPIL
Federation of Paper Traders Association of India, Mumbai	SHRI DEEPAK KUMAR JAIN SHRI KRISHAN MOHAN GUPTA (*Alternate*)
Government Printing, West Bengal, Kolkata	SHRI SUBIR KUMAR MANDAL
Government of Indian Stationery Office, Kolkata	SHRI BISHAMBER DHAR SHRI RAKESH SUKUL (*Alternate*)
Gujarat Paper Mills Association, Vapi	SHRI PRABHAT RANJAN SHRI KANU MEHRA (*Alternate*)
Indian Agro and Recycled Paper Mills Association, New Delhi	DR BIPIN PRAKASH THAPLIYAL DR ANIL NAITHANI (*Alternate*)
Indian Institute of Packaging, New Delhi	DR TANWEER ALAM DR RISHU GAUTAM (*Alternate*)
Indian Institute of Technology, Roorkee	DR DHARM DUTT DR VIBHORE KUMAR RASTOGI (*Alternate* I) DR KIRTIRAJ K. GAIKWAD (*Alternate* II)

Indian Newsprint Manufacturers Association, New Delhi	SHRI VIJAY KUMAR RAGHOTAM SHRI L. SURESH (*Alternate*)
Indian Paper Manufacturers Association, New Delhi	SHRI BISWARANJAN DASH SHRI ROHIT PANDIT (*Alternate*)
Indian Recycled Paper Mills Association, New Delhi	DR RAKESH CHANDRA RASTOGI
JK Paper Ltd, New Delhi	SHRI SUSANTA NAYAK SHRI SAMEER MOHAPATRA (*Alternate*)
Kumarrappa National Handmade Paper Institute, Jaipur	DR SAAKSHY SHRI RAHUL MISHRA (*Alternate*)
NCERT, New Delhi	SHRI ARUN CHITKARA
National Test House, Ghaziabad	SHRI DEBASISH SARKAR SHRI AMIT DEV VYAS (*Alternate*)
Pulp and Paper Research Institute, Jaykaypur	SHRI S. K. PRADHAN SHRI NAVEEN KUMAR PADHY (*Alternate*)
Seshasayee Paper & Boards Limited, Erode	DR P. MARIMUTHU DR AROCKIASAMY (*Alternate*)
Shree Mangal Trade Enterprises, Kolkata	DR NAROTTAM VYAS DR BHAWNA VYAS (*Alternate*)
Tamil Nadu Newsprint and Papers Ltd, Chennai	SHRI N. K. PERIASAMY DR F. AMJATH KHAN (*Alternate*)
Whale Stationery Products Ltd, New Delhi	SHRI MUKESH GUPTA SHRI ASEEM GUPTA (*Alternate*)
BIS Directorate General	SHRI AJAY KUMAR LAL, SCIENTIST 'F'/SENIOR DIRECTOR AND HEAD (CHEMICAL) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI VIRENDRA SINGH
SCIENTIST 'E'/DIRECTOR
(CHEMICAL), BIS

Bureau of Indian Standards

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