



उत्पाद मैनुअल
थर्मल पेपर – विशिष्टि
17568: 2021 के अनुसार

**PRODUCT MANUAL FOR
THERMAL PAPER — SPECIFICATION
ACCORDING TO IS 17568: 2021**

विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो) अनुरूपता मूल्यांकन (विनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	मानक संख्या IS No.	:	IS 17568 : 2021
	शीर्षक Title	:	THERMAL PAPER — SPECIFICATION थर्मल पेपर – विशिष्टि
	संशोधनों की संख्या No. of amendments	:	0
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Declaration to be submitted on the thermal paper being free from Bisphenol A Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	NA

c)	नमूने का परिमाण Sample Quantity	:	One ream/ roll Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (incase of market surveillance, effort may be made to procure therequired quantity of product sample, as far as possible since raw material sample may not be available in market)
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer to Annex- A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex- B
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	All tests possible (on pre conditioned samples, as applicable) Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.		
6.	लाइसेंस का दायरा /Scope of the Licence:		
	"Licence is granted to use Standard Mark as per IS 17568 : 2021 with the following scope: IS 17568 : 2021 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्रके लिए प्रदान किया जाता है		
	Name of the product		THERMAL PAPER थर्मल पेपर

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN,9, BAHADUR SHAH ZAFAR MARG,
NEW DELHI-110002

ANNEX – A

LIST OF TEST EQUIPMENTS (INDICATIVE LIST, FOR GUIDANCE ONLY)

Sl. No.	Tests Used In With Clause Reference	Test Equipment/Chemical
1.	Grammage (Cl 4.3)	Cutting device, Balance, Special sheet-weighing balances, conditioning chamber, arrangement for standard atmospheric conditions of lab as per ISO 187
2.	Tensile Index (Cl.4.2) Table 1	Tensile Testing Machine as per IS 1060 (Part 5/Sec 6), Device for cutting test pieces, means of measuring work done (e.g. integrator), means of plotting force elongation curve and measuring maximum slope of curve (only if ϵ is required)
3.	Tear Index (Cl.4.2) Table 1	Elmendorf Type tear tester as per IS 1060 (Part 6/Sec 1), Device for preparing test piece, conditioning chamber
4.	Opacity, Percent (Cl.4.2) Table 1	Reflectometer with calibration and working standards as per IS/ISO 2471 : 2008
5.	Brightness ISO Percent (Cl.4.2) Table 1	Reflectometer, Reference standards for calibration of the instrument and the working standards, Working standards,
6.	Gloss at 75 degree Max (Cl.4.2) Table 1	Gloss Meter, Gloss standards, Nylon Brush, Mild detergent, Distilled water, hot plate, Oven,
7.	Smoothness Bendtsen (Cl.4.2) Table 1	Bendtsen tester- variable area flowmeter type/electronic flowmeter type, sample cutter, conditioning chamber, arrangement for standard atmospheric conditions of lab (65 +/- 2 percent humidity and 27 +/- 2° C)
8.	Wax Pick, min (Cl.4.2) Table 1	Analytical Balance, Oven, Blotting Paper, Steel plates, Photographic tray, Paraffin wax, Hot Plate, Steam Bath., conditioning chamber
9.	Imaging properties (Cl.4.2) Table 2 a) Static thermal colour Image density b) Dynamic Thermal colour image density c) Background thermal colour image density Static colour development properties, dynamic colour development properties, Background ID, barcode print result Cl 4.2 Table 2	TH-PSA (Pressure sensitive) static machine. Macbeth densitometer, fax machine. As per Table 1, 2 and bar code machine
10.	Heat resistance (Cl.4.2) Table 3	Oven (60 °C), Macbeth densitometer
11.	Humidity resistance (Cl.4.2) Table 3	Humidity chamber (temperature 40 °C and RH 90 percent), Macbeth densitometer
12.	Light resistance (Cl.4.2) Table 3	Paper image light resistance tester (5 000 Lux), Macbeth densitometer, Air conditioner
13.	Lanolin hand cream (Cl.4.2) Table 4	Lanolin hand cream, Fax machine, Macbeth densitometer, Air conditioner

14.	Ethanol (Cl.4.2) Table 4	Ethanol, Macbeth densitometer, Air conditioner
15.	Plasticizer (Cl.4.2) Table 4	Plasticizer, plastic bag, arrangement for load of 60 g/cm ² as per Cl 4.2, Table 4, Sl no iii) , Macbeth densitometer, Air conditioner
16.	Water fastness (Cl.4.2) Table 4	demineralized water, Macbeth densitometer, Air conditioner

ANNEX B

SCHEME OF INSPECTION AND TESTING

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : Thermal Paper produced and packed on a particular machine continuously from the same batch of raw material during a day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. PACKING AND MARKING - The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on the package provided always that the thermal paper in each package thus marked conforms to each requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

3.2 Additional Marking requirements: The material shall also be marked with the following additional requirement on package:

a) “For BIS certification details please visit www.bis.gov.in”

4. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1
(ONLY FOR GUIDANCE PURPOSE)

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or)S:Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods Clause Reference			No. of Sample	Frequency	Remarks
4.3	Grammage	4.3	IS 17568	R	Firm to have adequate in-process controls to check compliance of this parameter. Appropriate records shall be maintained by the manufacturer for evidence of conformity		
Table 1 Requirement for Thermal Paper- Thermal coated paper Properties (Clause 4.2)							
(A)	Paper properties						
i)	Tensile Index, Nm/g	4.2	IS 1060 (Part 5/Sec 6)	R	One	Each control unit	
ii)	Tear Index, m N.m2/g	4.2	IS 1060 (Part 6/Sec 1)	R	One	Each control unit	
iii)	Opacity, Percent, Min	4.2	IS/ISO 2471	R	One	Each control unit	
iv)	Brightness ISO, Percent, Min	4.2	IS 1060 (Part 4/Sec 13)	R	One	Each control unit	
v)	Gloss at 75°, Max	4.2	IS/ISO 8254 (Part 1)	R	One	Each control unit	
vi)	Smoothness (Bendtsen)	4.2	3 of IS 9894	S	One	once a month	
vii)	Wax Pick , Min	4.2	IS 1060 (Part 3)	R	One	Each control unit	
(B)	Image properties (Static Thermal colour, Dynamic Thermal Color Image density, Back Ground Thermal Color	4.2	IS 17568	R	One	Each control unit	

	Image density)						
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Table 2 Requirement for Thermal Paper- Thermal Properties (Clause 4.2)

4.2	Thermal Properties (Imaging colour Static colour development properties, Dynamic colour development properties, Back ground ID, Bar code print result)	4.2	IS 17568	R	One	Each control unit	
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Table 3 Requirement for Thermal Paper- Climatic Durability (Clause 4.2)

i)	Heat resistance	4.2	IS 17568	R	One	Each control unit	
ii)	Humidity resistance	4.2	IS 17568	R	One	Each control unit	
iii)	Light resistance	4.2	IS 17568	R	One	Each control unit	

Table 4 Requirement for Thermal Paper - Chemical Durability (Clause 4.2)

i)	Lanolin hand cream	4.2	IS 17568	R	One	Each control unit	
ii)	Ethanol	4.2	IS 17568	R	One	Each control unit	
iii)	Plasticizer	4.2	IS 17568	R	One	Each control unit	
iv)	Water fastness	4.2	IS 17568	R	One	Each control unit	