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उत्पाद मैनुअल

सामान्य प्रयोजन ग्लास थर्मामीटर — विशिष्ट भाग 1-ठोस तना थर्मामीटर

2480 PART-1: 2024 के अनुसार

PRODUCT MANUAL FOR
FOR GENERAL PURPOSE GLASS THERMOMETERS- SPECIFICATION
PART 1 SOLID-STEM THERMOMETERS
ACCORDING TO IS 2480 (PART 1): 2024

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 2480 (Part 1): 2024
	शीर्षक Title	:	GENERAL PURPOSE GLASS THERMOMETERS – SOLID-STEM THERMOMETERS
	संशोधनों की संख्या No. of amendments	:	Nil
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Thermometer bulb shall be made of suitable thermometric glass (IS: 4610 for reference), The glass of the bulb and capillary stem shall comply with CI 6.1.1 of IS 2480 (Part 1):2024. The inside of the capillary tube shall be smooth (IS : 4610), and shall comply with CI 6.2.3 Gas filling (if applicable) shall be as per CI 6.1.3

		Thermometric Liquid shall comply to Cl 6.1.2. of IS 2480 (Part 1). 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	: Thermometer of each construction, thermometric Liquid, temperature range, and smallest division, shall be tested to be covered in the scope of Licence
c)	नमूने का परिमाण Sample Quantity	: <u>10 Nos</u> 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 (in case 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	
	a) Construction (Cl 6.2) b) Graduation and Figuring (Cl 6.3) c) Immersion Line (Cl 6.4) d) Dimensions of Ranges (Cl 6.5) e) Accuracy (Cl 6.6) 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:	
	IS 2480(Part1):2024 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेंस निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है “Licence is granted to use Standard Mark as per IS 2480 (Part 1) :2024 with the following scope:	
	उत्पाद का नाम Name of the product	GENERAL PURPOSE GLASS THERMOMETERS SOLID-STEM
	Type	liquid-in-glass solid-stem type, Total Immersion /Partial Immersion
	Thermometric Liquid	As declared (Cl 6.1.2)
	Temperature Range	As applicable
	Smallest Division	As applicable (Table 2)

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ANNEX – A

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

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Construction (CI 6.2)	1) Vernier Caliper 2) Projection Microscope (for Clauses 5.2.3, 5.2.4 and 5.2.5) 3) Temperature controlled test bath (liquid bath or metal block type oven)
2	Graduation and Figuring (CI 6.3) Immersion Line (CI 6.4) Dimensions of Ranges (CI 6.5)	1) Vernier Caliper 2) Steel scale 3) Micrometer 4) Temperature controlled test bath (liquid bath or metal block type oven)
3	Accuracy (CI 6.6)	1) Comparator bath 2) Reference Thermometer
4.	Stability (CI 6.7)	1) Comparator bath 2) Reference Thermometer 3) Conditioning liquid bath



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: Thermometer of same range, construction, thermometric Liquid, temperature range, smallest division and Graduation & Figuring, manufactured in one day from the same batch of raw material.

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/empanelled 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 permanently and legibly marked on each thermometer provided always that the thermometer to which this mark is thus applied conforms to every requirement of the specification.

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

3.2 **Additional Marking requirements:** Each thermometer and/or packaging of the thermometer shall also be marked with the following additional requirement

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 Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
6.1 6.1.1	Material		IS 2480 (PART 1): 2024	S	One	Each Consignment	No testing required if the material consignment is accompanied with a manufacture's test certificate
	Glass tubing Capillary Tube	6.1 6.1.1					
6.2	Construction	6.2	-do-	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity			
6.3	Graduation and Figuring	6.3	-do-				
6.4	Immersion Line	6.4	-do-				
6.5	Dimensions of Ranges	6.5	-do-				
6.6	Accuracy	7.1	IS 6274	R	one	Each control unit	
6.7	Stability	7.2	IS 6274	R	one	Once a month	