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उत्पाद मैनुअल

आबंधित खनिज उन विशिष्टि

IS 8183: 2024 के अनुसार

**PRODUCT MANUAL FOR
Bonded Mineral Wool — Specification
ACCORDING TO IS 8183: 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 8183 : 2024
	शीर्षक Title	:	आबंधित खनिज उन विशिष्टि Bonded Mineral Wool — Specification
	संशोधनों की संख्या No. of amendments	:	1
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Raw material shall be in accordance with CI 4.1 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	:	Please refer to Annex-A

c)	नमूने का परिमाण Sample Quantity	:	300 mm X 300 mm slabs – 15 nos. + For thermal conductivity test per Mean temperature: 225mmx120mmx50mm flat slabs x 3nos + 900 mm X 600 mm slabs – 2 nos. (for jolting and vibration tests) 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 the required 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-B
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	:	Please refer to Annex-C
5.	एक दिन में संभावित परीक्षण Possible tests in a day		
	• Description (Cl. 4.1) • Bulk Density (Cl. 4.2) • Recovery after compression (Cl. 4.3) • Shot Content (Cl. 4.4) • Moisture Content (Cl. 4.5) • Incombustibility (Cl. 4.6) • Sulphur Content (Cl. 4.8) • Dimensions (Cl. 4.9) • Fibre Diameter (Cl. 4.10) 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 8183 :2024 with the following scope:		
	Name of the product	Bonded Mineral Wool	
	Group(s):	1/2/3/4/5	
	Mean Temperature(s) for Thermal Conductivity:	10/25/50/100/150...427 °C	
	Dimensions	Lengths: 100/ 120/ 140 cm, etc Width: 50/ 60/ 75/ 100/ 120 cm, etc Thicknesses: 25/ 40/ 50/ 65/ 75 mm, etc	
	Optional requirements	With/without alkalinity	

		With/without resistance to microorganisms With/without odour emission With/without Resistance to Vibration With/without Resistance to jolting With/without Heat Resistance With/without Leachable Chloride content
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**ANNEX A
GROUPING GUIDELINES**

IS 8183: 2024 classifies Bonded Mineral Wool according to:

- i) Group: 1/2/3/4/5 (based on bulk density)
- ii) Mean Temperature(s) for Thermal Conductivity: 10/ 25/ 50/ 100/ 150/ 200/ 250/ 300/ 350/ 427 °C
- iii) Sizes/Dimensions: Length, width, Thickness

For the purpose of grant of licence, and change in scope of licence, the following grouping guidelines shall apply:

Sample(s) of **each group (1/2/3/4/5), and each Mean Temperature(s) for Thermal Conductivity, (10/25/50/100/150/200/250/300/350/427 °C)** of **any of the sizes** intended to be covered in the scope of licence shall be drawn and tested.

In case optional requirements i.e. Alkalinity, resistance to microorganisms, odour emission, Resistance to Vibration, Resistance to jolting, Heat Resistance and Leachable Chloride content are intended to be covered in the scope of licence, samples shall be tested for the applicable optional requirements as well.

However, scope of licence shall be restricted according to the manufacturing and testing facilities available

During operation of licence, samples of all varieties covered in the scope of licence, shall be drawn in rotation, to the extent possible.

ANNEX – B

LIST OF TEST EQUIPMENTS

(INDICATIVE LIST, FOR GUIDANCE ONLY)

Sr. No.	Tests used in with Clause Reference	Test Equipment/Chemicals/Glassware
1	Bulk Density content (Cl. 4.2/ IS3144 Cl. 9)	• Flexible Steel Rule of LC 1mm • Drying Oven • Desiccator • Balance
2	Recovery after compression (Cl. 4.3/Annex A)	• Thickness measuring instrument as per 7.1 of IS 3144 • Steel Scale • Mild steel sheet • Arrangement for Load as per A 2.1 of IS 8183 : 2024
3	Shot Content (Cl. 4.4/ IS 3144 Cl. 13)	• Glass Elutriator as per Cl 13.2 of IS 3144 • Analytical Balance of 0.1 mg LC • Knife • Furnace • Beaker • stirrer • Distilled water • Wetting agent • Glass stirring rod • IS sieves (250 and 500 micron) • Spatula • Oven • Desiccator • Rubber stopper • Bristles brush
4	Moisture Content (Cl. 4.5)	• Thermostat fitted Drying Oven with vent • Chicken gauze • Analytical Balance
5	Moisture Absorption (Cl. 4.5)	• Thermostat fitted Drying Oven with vent • Chicken gauze • Analytical Balance • Thermostatically controlled Humidity Chamber
6	Incombustibility (Cl. 4.6 / IS 3144 Cl. 16)	• Incombustibility test apparatus as per Cl 16.3 of IS 3144 • Thermocouple • Temp. Indicator • Timer • Oven • Analytical Balance • Drying Unit • wire gauze

7	Thermal Conductivity (Cl. 4.7/IS3346)	• Low-temperature metal-surface guarded hot plate apparatus • High-temperature guarded hot plate apparatus • Heat Flow Measurement – • Vacuum • Cold Surface Control
8	Sulphur Content (Cl. 4.8 / IS 3144Cl. 19)	• Gas Absorption flasks • Flask fitted with dropping funnel • Sulphuric Acid • Cadmium Acetate • Hydrochloric acid • Iodine • Sodium thiosulphate • Starch • Mercuric Iodide • Distilled water • Analytical balance • Apparatus for Titration • Standard Iodine
9	Dimensions(Cl. 4.9 / IS 3144 Cl. 6 and 7)	• Steel Scale • T-square • Measuring Tape • Thickness measuring instrument as per Cl 7.1.1 of IS 3144 • Glass Sheet or Mild Steel Sheet
10	Fibre Diameter(Cl. 4.10/ IS 3144Cl. 24)	• Projection Microscope as per Cl 24.1.1 of IS 3144 • Microscope slides • Mounting Medium (Glycerine + distilled water)
11	Linear Shrinkage (CL 4.11)	• Furnace with temperature indicator/recorder as per Cl 10.2.1 of IS 5724 • Oven • Dessicator • Length Measuring instrument of LC 0.05mm as per Cl 10.2.2 of IS 5724 • Balance
12	Resistance to Micro-organisms (Cl.4.12.1/IS 3144 Cl. 17)	• Incubator • Hot-air oven • Autoclave • Analytical Balance (0.1 mg LC) • Stereoscopic Microscope • Petri Dish • Test organisms – <i>Aspergillus Niger</i> and <i>Bacillus Subtilis</i> • Volumetric Flask • Pipettes • Test tube • Erlenmeyer flasks • Microbial solutions

		• Ethanol-water mixture • O-phenylphenol • Ethanol • Lactic Acid • Soyabean Casein Digest Agar (SCDA) • Potato Dextrose Agar (PDA) • Sodium Chloride • Distilled water • Sterile Saline
13	Odour Emission Test (Cl. 4.12.2 /IS 3144 Cl. 18)	• Refrigerator • Pans • Glass Squares • Butter
14	Resistance to Vibration (Cl. 4.12.3/IS 3144 Cl. 22.2)	• Wooden Box as per Cl 22.2.1 of IS 3144 • Vibration Test Apparatus with timer • Arrangement for measurement of mean height
15	Resistance to jolting (Cl. 4.12.4/ IS3144 Cl. 22.3)	• Wooden Box as per Cl 22.2.1 of IS 3144 • Jolting Machine as per Cl 22.3.1 • Arrangement for measurement of mean height
16	Heat Resistance (Cl. 4.12.5/ IS3144 Cl. 12)	• Desiccator/ ventilated oven • Hot plate/ pipe mandrel quipped for internal heating as per Cl 12.3 of IS 3144 • Thermocouple • Steel plate
17	Alkalinity(Cl. 4.11.6/Annex B)	• pH meter • distilled water
18	Leachable Chloride content(Cl. 4.12.7/	• Distilled Deionized Water • Hot plate • Electronic Balance • Blender • Beaker • Buchner funnel with filter Paper • Amperometric – Coulometric Titrator/ Specific Ion Electrode/ An ion chromatograph

Annex C

SCHEME OF INSPECTION AND TESTING**1. QUALITY ASSURANCE PLAN**

1.1 It is expected that during operation of BIS licence, manufacturers will implement a Quality Assurance Plan (QAP) 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or subcontracting/sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : All bonded mineral wool of the same bulk density and same mean temperature of Thermal conductivity produced under similar conditions of manufacture in 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**. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

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.

2. ENSURING COMPLIANCE THROUGH TESTING- manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred :

- i) Shared testing resources like common facility,
- ii) Cluster based testing facility,
- iii) Sub-contracting to outside laboratories which may either be:
 - a) BIS recognised/empanelled laboratories, or
 - b) Any accredited laboratory as per ISO/IEC 17025

2.1 TEST RECORDS- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made 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 each package of bonded mineral wool or on the label applied to the package as the case may be provided always that the material so 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 each package of bonded mineral wool or on the label applied to the package as the case may be:

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

4. REJECTION - 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
(Recommended Levels of Control By BIS- For Guidance Only)

(1)				(2)		
Test Details				Recommended Levels ofControl		
Clause	Requirement	Test Methods		No. of Sample	Frequency	Remarks
		Clause	Reference			
4.1	Description	4.1	IS 8183	One	Firm to have adequate in-process controls to check compliance of this parameter. However, appropriate records shall be maintained by the manufacturer for evidence of conformity	
4.2	Bulk Density	9	IS 3144	One	Each control unit	
4.3	Recovery after compression	Annex A	IS 8183	One	Each control unit	
4.4	Shot Content	13	IS 3144	One	Each control unit	
4.5	Moisture Content	14	IS 3144	One	Each control unit	
	Moisture Absorption	15	IS 3144	One	Once a month	
4.6	Incombustibility	16	IS 3144	One	Each control unit	
4.7	Thermal Conductivity	-	IS 3346	one	Once a year	For each group and thermal conductivity
4.8	Sulphur Content	19	IS 3144	One	Each control unit	
4.9	Width and length	6	IS 3144	one	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	
	Thickness	7	IS 3144			
4.10	Fibre Diameter	24	IS 3144	One	Each control unit	
4.11	Linear Shrinkage	10	IS 5724	one	Once a month	For each group and thermal conductivity
4.12	OPTIONAL REQUIREMENTS					
4.12.1	Resistance to Micro-organisms	17	IS 3144	one	Once a month	On the applicable varieties
4.12.2	Odour Emission Test	18	IS 3144			
4.12.3	Resistance to Vibration	22.2	IS 3144			
4.12.4	Resistance to jolting	22.3	IS 3144			
4.12.5	Heat Resistance	12	IS 3144			
4.12.6	Alkalinity	Annex B	IS 8183			
4.12.7	Leachable Chloride content	Annex C	IS 8183			