



उत्पाद मैनुअल
खड़जा निर्माण में उपयोग के लिए बहु –
ग्रेड के डामर
IS 15808 : 2008 के अनुसार
PRODUCT MANUAL
FOR MULTI-GRADE BITUMEN FOR
USE IN PAVEMENT CONSTRUCTION
ACCORDING TO IS 15808 : 2008

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, 2008 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	मानक संख्या IS No.	:	IS 15808:2008
	शीर्षक Title	:	MULTI-GRADE BITUMEN FOR USE IN PAVEMENT CONSTRUCTION - SPECIFICATION
	संशोधनों की संख्या No. of amendments	:	01
2.	नमूना दिशानिर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Any suitable grade of bitumen as given in IS 73 with or without addition of suitable Additives, may be used. 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 (Sample of each grade shall be drawn and tested).
c)	नमूने का परिमाण Sample Quantity	:	5 kg 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).
d)	परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर Parameters to be Declared in Test Request	Grade : Note: Apart from the above, any other requirements/ parameters may also be declared as per the standard, as applicable.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	: Please refer Annex –A
4.	निरीक्षण और परीक्षण की स्कीम Scheme of Inspection and Testing	: Please refer Annex - B
5.	एक दिन में संभावित परीक्षण Possible tests in a day	
	All tests are possible to be carried out in a day. 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 15808 : 2008 with the following scope:	
	Name of the product	Multi – grade Bitumen for Use Pavement Construction
	Grade	MGB 500 and MGB 200

ANNEX – A

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

Sr. No.	Tests used in with Clause Reference	Test Equipment
1.	Penetration at 25°C Table -1,S.No.i (IS 15808) IS 1203 (IS 1201 to 1220)	Metal or Glass cylindrical flat bottom container, Penetration Apparatus Internal depth 35mm, Needle diameter 55mm, Internal depth 45mm diameter 70mm, Needle - diameter 3mm Timer device 5 Sec automatic timer Water Bath Transfer Dish Thermometer 0-44 deg C Length10 to16 mm
2.	Softening Point(R&B) Table -1,S.No.ii (IS 15808) IS 1205	Steel Balls Diameter 9.5mm , Steel Balls Weight 3.50 gram Ring Depth 6.4 mm Rings inside diameter at bottom Rings inside diameter at Top 17.5 mm, Outside diameter 20.6 mm Ball guide Wall width 2.4mm Ball guide Screw size 1.6mm Beaker 85Ø mm, depth 120 mm Thermometer Low Inbuilt M/c -2 to 80°C Thermometer High 30 to 200°C Heater rate /min 5°C Support ring shall be supported in in horizontal position with the upper surface the ring s below surface More than 19 mm there shall be distance of exactly between the bottom of ring and the top surface of the plate of support 25mm Stirrer Glycerin Oven 25-250°C IS Sieve 30
3.	Frass Breaking Point Table -1,S.No.iii (IS 15808) IS 1205	Magnet Block with metal cover, Bending Apparatus as per clause 4.2 of IS 9381 Cooling Apparatus/Peltier System as per clause 4.3 of IS 9381 Temperature measuring system shall be capable of operating in the range of – 40 °C to 40 °C Steel Plaques as per clause 4.5 of IS 9381 Gripping Pliers as per clause 4.6 of IS 9381 Balance — accuracy of ± 5 mg
4.	Flash point (Cleveland open cup) Table -1,S.No.iv (IS 15808)	Pensky Martens Closed Tester consisting of: Oil Cup -Cup filling inside dia 49.5 - 52.1 Defense b/n inside and outside diameter below filling 3 to 3.4 Cup Inside Height 54.6-57.2 mm Cup thickness of Bottom 1.8-3 mm Distance from rim to filling mark 21.5-22.2mm Distance lower surface flange to bottom of cup 45.2-46 Lid Stirring Device less than 2.5, not more than 3 mm Shutter Stove - Air bath-Top plate

		Flame - exposure device shall have a tip with an opening 0.7 to 0.8 mm Heating Vessel -Heating Rate per minutes 5 to 6 °c Thermometer -7 to 110 °c Thermometer 90 to 370 °c long line at each low 1 to 5 °c long line at each high 10 to 20 °c Figures at each Low 5 to High 20 °c Immersion 57 mm Overall Length 280±2mm Length of Graduated portion 143-177mm Bulb Shape Cylindrical Stem Diameter 5.5 to 8 mm Distance bottom of bulb to lowest gradution 75 to 90 mm Expansion Chamber top finish ring Scale error max Low rang 0.5°C High 1 to 260 °c Inanition Burner Pilot burner Spring Handle Revolving Shutter Orifice Gauge Hooks Lifting form of Stirrer opening Device Barometer Steel wool Shield
5.	Ductility at 15°C Table -1,S.No.v (IS 15808) IS 1208 (IS 1201 to 1220)	Ductility apparatus consisting of ductility mould, water bath (Thermostatically controlled), testing machine (for pulling the briquette of bituminous material apart), and thermometer
6.	Penetration Index(PI) Table -1,S.No.vi (IS 15808)	Container Internal depth 35mm, diameter= 55mm, Internal depth= 45mm, diameter= 70mm, diameter= 70mm Needle diameter= 3mm Timer device, 5 Sec automatic timer Weights 100 gm Water Bath
7.	Penetration Ratio Table -1,S.No.vii (IS 15808)	Penetration Apparatus Internal depth 35mm, Needle diameter 55mm, Internal depth 45mm diameter 70mm, Needle - diameter 3mm Timer device 5 Sec automatic timer Water Bath Transfer Dish Thermometer 0-44 deg C Length 10 to 16 mm Thin film Oven Test Apparatus Inside Dia 140mm Totaling Metal Shelf dia 250mm Rotation 5 to 6 rev/ min
8.	Absolute Viscosity at 60°C Table -1,S.No.viii (IS 15808)	Viscometers (Cannon Manning Vacuums Viscometer or Asphalt Institute Vacuum Viscometer or Modified Koppers Vacuum Viscometer) Bath Vacuum System 30 cm Timing device Viscometer Holder Thermometer 0 to 44 Deg C Thermometer 37.8 to 82 Deg C

		Thermometer 76 to 122 deg C Reference Material for calibration
9.	Viscosity at 135°C Table -1, S.No.ix (IS 15808) IS 1206(Part 3	Viscometers (Cannon – Fenske Viscometer for opaque liquids or BS U-Tube Modified Reverse Flow Viscometer) Bath Timing device 99999.9 Se Thermometers 0-44 °C Thermometers 76 to 122 °C Reference Material for calibration
10.	Ageing Index, Table -1, S.No.x (IS 15808) (IS 9382)	Thin film Oven Test Apparatus Totaling Metal Shelf dia 250mm Rotation 5.5 r/min $\pm$ 1.0 r/min thermometer as per IS 9382 Clause 4.3 having a range of 150 °C to 170 °C Container having Dia 140 mm $\pm$ 1 mm, depth of 9.5 mm $\pm$ 1.5 mm, thickness 0.64mm and 0.76mm weigh balance having least count of 0.001g stop watch

ANNEX – B

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: the bitumen emulsion of the same grade produced in a shift.

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 license shall be marked or printed on the label applied to the container, provided that the material in each container 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:** Additionally, the following shall also be marked on the accompanying label/tag:

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 of Control		
Cl.	Requirement	Test Methods		No. of Sample	Frequency	Remark
		Clause	Reference			
6.1	Homogeneity	6.1	IS 15808	One	Each month	
6.2 & Table 1	i) Penetration 25°C/100g/5Sec	--	IS 1203 (IS 1201 to 1220)	One	Each control unit	
	ii) Softening Point (Ring and Ball)°C	--	IS 1205 (IS 1201 to 1220)	One	-do-	
	iii) Frass breaking point) °C	--	IS 9381	One	-do-	
	iv) Flash Point (claved open cup) °C	--	IS 1209 (IS 1201 to 1220)	One	-do-	
	v) Ductility at 15 °C		IS 1208 (IS 1201 to 1220)	One	Each control unit	
	vi) Penetration Index (PI)	-do-	IS 1203 (IS 1201 to 1220) and Notes 1 -3 under Table 1 of IS 15808	One	-do-	
	vii) Penetration Ratio	-do-	-do-	One	Each control unit	
	viii) Absolute Viscosity at 60°C Poise	--	IS 1206 (Part 2)	One	do-	
	ix) Viscosity at 135 °C cSt	--	IS 1206 (Part 3)	One	do-	
	x) Ageing index	-do-	IS 9381 ,9382 and Notes 1 -3 under Table 1 of IS 15808	One	-do-	