



**PRODUCT MANUAL FOR
SPECIFICATION FOR INDUSTRIAL BITUMEN
ACCORDING TO IS 702 : 1988**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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/licence/certificate.

1. Product	:	IS 702:1988
Title	:	Specification for Industrial Bitumen
No. of Amendments	:	1
2. Sampling Guidelines:		
a) Raw material	:	See Cl.4 The material shall be prepared from petroleum residue, source shall be stated by the manufacturer.
b) Grouping guidelines	:	Not applicable. Samples of each grade to be tested.
c) Sample Size	:	10 Kg
3. List of Test Equipment	:	Please refer ANNEX –A
4. Scheme of Inspection and Testing	:	Please refer ANNEX –B
5. Possible tests in a day :		
(i) Specific Gravity (ii) Flash Point (iii) Softening Point (iv) Penetration (v) Ductility (vi) Loss on Heating (vii) Matter soluble in trichloroethylene.		
6. Scope of the Licence :		
"Licence is granted to use Standard Mark as per IS 702:1988 with the following scope:-		
Name of the product	Industrial Bitumen	
Grade	<ul style="list-style-type: none"> • 85/40 • 85/25 • 90/15 • 115/15 • 135/10 • 155/6 	

ANNEX-A

List of Test Equipment

Major test equipment required to test as per the Indian Standard

SI. No.	Test Equipment	Tests used in with Clause Reference
1.	<p>(i)Method A-(Pyknometer Method) - Specific gravity bottles of 50 ml capacity. One of the two types of specific gravity bottles, namely (a) the ordinary capillary type specific gravity bottle with a neck of 6 mm diameter (see Fig. IA) and (b) the wide-mouthed capillary type specific gravity bottle (see Fig. IB) with a neck of 25 mm diameter shall be used. -Stopper -Constant temperature bath -Bath thermometers as specified in Cl 3.2.3 of IS 1202-1978 -Air Conditioner</p> <p>(ii)Method B-(Balance Method) -Analytical balance -Thermometer as specified in Cl 3.2.3 of IS 1202-1978 -Balance straddle -Thread -Brass Moulds -Oven -Glycerine and dextrin</p>	Table 1, SI No (i) -Specific Gravity (IS 1202)
2.	<ul style="list-style-type: none"> - Cleveland open cup apparatus as per Annex A of IS 1448 P:69 - 2019 - Shield to cover at least 3 sides of the cup - Temperature measuring device as per Annex B of IS 1448 P:69 - 2019 - Barometer, accurate to 0.5 kPa with a resolution of 0.1 kPa. - Cleaning solvents, verification liquids, steel wool etc. 	Table 1, SI No (ii) Flash Point as per IS 1448 (Part 69) : 2019
3.	<ul style="list-style-type: none"> -Ring and Ball Apparatus as per Cl 3.1 of IS 1205-1978 -Thermometer as per Cl 3.1.5 of IS 1205-1978 -Bath as per cl 3.1.6 of IS 1205-1978 stirrer Sieve -Glycerine and dextrine -Scale 	Table 1, SI No (iii)Softening Point (IS 1205)

	<ul style="list-style-type: none"> -Stop watch -Sharp Knife 	
4.	<ul style="list-style-type: none"> -Container as per CI 3.1 of IS 1203-1978 -Needle as per CI 3.2 of IS 1203-1978 -Water Bath with thermostat. Cap. 10 litres -Transfer Dish -Penetration apparatus -Thermometer as per 3.6 of IS 1203-1978 -Air conditioner -Time Device -Heating device -Weighing balance 	Penetration (IS 1203)
5.	<ul style="list-style-type: none"> -Mould as per CI 3.1 of IS 1208-1978 -Water Bath. Cap. 10 litres -Testing Machine -Thermometer as per CI 3.3 of IS 1208-1978 -Air conditioner as per CI 3.4 of IS 1208-1978 -Heating device -Stop watch -Brass Plate -Glycerine and dextrin -Straight edge putty-knife or spatula 	Ductility (IS 1208)
6.	<ul style="list-style-type: none"> -Oven as per CI 3.1 of IS 1212-1978 -perforated metal shelf as per CI 3.2 of IS 1212-1978 -Thermometer as per CI 3.3 of IS 1212-1978 -Timing device -Weighing Balance 	Loss on Heating (IS 1212)
7.	<p>Method-A (For Asphaltic Bitumen)</p> <ul style="list-style-type: none"> -Gooch Crucible -Conical Glass Flask - of 200-ml -Trichloroethylene conforming to IS 245 -Heating device -Stirrer -Asbestos -Weighing machine -Dropper -Timing device <p>oven</p> <p>Method-B (For Native Asphalts)</p> <ul style="list-style-type: none"> -Glass Tap Funnel -Glass Plate -Glass Funnel -Filter papers -Trichloroethylene conforming to IS 245 -Oven -Weighing Balance -Stop watch 	Matter soluble in trichloroethylene (IS 1216)

Observation -- Some of the apparatus are repeated for different tests for example, thermometer. If the requirements for thermometer for all the test methods are same, these may not be repeated for different tests.

The above list is indicative only and may not be treated as exhaustive.

ANNEX –B

SCHEME OF INSPECTION AND TESTING

- 1. LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

The manufacturer shall prepare a calibration plan for the test equipments.

- 2. TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.
- 3. PACKING AND MARKING** – The Standard Mark, as given in the Schedule of the licence, shall be printed using suitable ink by flexography or gravure printing or stenciling on each container of the product, provided always that the product so marked conform to requirements of the specification.

3.1 Packing and Marking shall be done as per the provisions of the Indian Standard. In addition, the following shall be incorporated on each container:

- i) BIS licence no. CM/L –
- ii) For details of BIS certification please visit www.bis.gov.in

- 4. CONTROL UNIT** – For the purpose of this scheme, the entire quantity of Industrial Bitumen of the same grade manufactured at one time from a particular charge of raw material shall constitute a control unit.
- 5. LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

- 6. REJECTIONS** – 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 LEVELS OF CONTROL
(Para 5 of Scheme of Inspection and Testing)**

(1) Test Details				(2) Test equipment requirement R: required(or) S:Sub contracting permitted	(3) Levels of Control		
Cl.	Requirement	Test method Clause	Test method IS no.		No. of Sample	Frequency	Remark
Table 1 Requirements of Industrial Bitumen (Cl 5.1 and 6.1)							
i)	Specific gravity at 27°C		IS 1202	R	One	Each control unit	See Note 3
ii)	Flash point, Cleveland open cup		IS 1448 (P:69)	R	One	Each control unit	See Note 3
iii)	Softening point		IS 1205	R	One	Each control unit	See Note 3
iv)	Penetration at 25°C		IS 1203	R	One	Each control unit	See Note 3
v) a)	Loss on heating		IS 1212	R	One	Each control unit	See Note 3
v) b)	Penetration of the residue at 25°C		IS 1203	R	One	Each control unit	See Note 3
vi)	Ductility at 27°C		IS 1208	R	One	Each control unit	See Note 3
vii)	Matter soluble in trichloroethylene		IS 1216	R	One	Each control unit	See Note 3

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval to BO head.

Note-3: In case there is a failure, two or more samples shall be tested from the same control unit for that requirement. If there is any further failure, the control unit shall not be considered fit for marking