IS 212 (1983): crude coal tar for general use [PCD 6: Bitumen Tar and their Products]

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Indian Standard

SPECIFICATION FOR CRUDE COAL TAR FOR GENERAL USE

(Second Revision)

UDC 662·749·3

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2 *May* 1983

Indian Standard

SPECIFICATION FOR CRUDE COAL TAR FOR GENERAL USE

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Indian Standard

SPECIFICATION FOR CRUDE COAL TAR FOR GENERAL USE

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 25 February 1983, after the draft finalized by the Bitumen and Tar Products Sectional Committee had been approved by the Civil Engineering Division Council and the Petroleum, Coal and Related Products Division Council.

0.2 This Standard was first published in 1950 for the guidance of distillers of crude tar as well as for direct consumers, who use it for sundry purposes such as, treatment of wooden poles and sleepers, toilet walls, fishing nets etc. After the publication of IS : 1201 to 1220-1958, this standard was revised in 1961, wherein reference to these test methods was included. In this revision the water content requirements of crude coal tar has been modified and the general characteristics of its fractional distillation has been specified. The viscosity requirement has also been included. Besides, reference has been made to the latest version of the Indian Standards on methods of test, namely, IS : 1201-1978 to IS : 1220-1978*.

0.3 In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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*Methods for testing tar and bituminous materials (*first revision*).

†Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard covers the requirements of crude coal tar used for general purposes, such as treatment of wooden poles and sleepers, toilet walls, fishing nets, etc.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS : 334-1982* shall apply.

3. REQUIREMENTS

3.1 Composition — Crude coal tar shall be obtained as a by-product of destructive distillation of coal.

3.1.1 The material shall comply with the requirements prescribed in Table 1.

4. TESTS

4.1 The material shall be tested in accordance with the appropriate Indian Standard referred to in 5 of Table 1.

5. SAMPLING AND CRITERIA FOR CONFORMITY

5.1 Lot — In any consignment, all the containers of crude coal tar from the same batch of manufacture shall be grouped together to constitute a lot.

5.2 The number of containers to be selected at random from the lot shall depend on the size of the lot and shall be in accordance with Table 2.

5.3 From each of the containers selected as in **5.2**, an average sample representative of the material in the container shall be drawn in accordance with method prescribed in IS : 1201-1978†, taking all the precautions mentioned therein. All those samples from individual containers shall be stored separately.

5.4 Number of Tests

5.4.1 All the individual samples shall be tested for water, mineral matter (ash) and viscosity.

5.4.2 For distillation and other requirements, a composite sample prepared by mixing together equal quantities of crude coal tar from all the individual samples shall be tested.

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*Glossary of terms relating to bitumen and tar (*second revision*).
†Methods for testing tar and bituminous materials : Sampling (*first revision*).

TABLE 1 REQUIREMENTS OF CRUDE COAL TAR

(*Clause* 3.1.1)

Sl No.	Characteristics	Min	Max	Reference to Indian Standard Methods of Test
(1)	(2)	(3)	(4)	(5)
i)	Specific gravity 27°C/27°C	1·09	1·24	IS : 1202-1978*
ii)	Water Content percent/ weight	—	4	IS : 1211-1978†
iii)	Viscosity BRTA 4 mm at 30°C, s	30	100	IS : 1206 (Pt III)-1978‡
iv)	Distillation fractions percent w/w			IS : 1213-1978§
	Up to 200°C	—	4	
	200 to 230°C	2	10	
	230 to 270°C	6	12	
	270 to 300°C	4	7	
	300 to 350°C	12	17	
v)	Mineral matter (Ash)	0	1	IS : 1217-1978‖
vi)	Matter insoluble in benzene percent by weight	5	25	IS : 1214-1978¶

*Methods for testing tar and bituminous materials : Determination of specific gravity (*first revision*).

†Methods for testing tar and bituminous materials : Determination of water content (Dean stark method) (*first revision*).

‡Methods for testing tar and bituminous materials : Determination of viscosity : Part III Kinematic viscosity (*first revision*).

§Methods for testing tar and bituminous materials : Distillation test (*first revision*).

‖Methods for testing tar and bituminous materials : Determination of mineral matter (ASH) (*first revision*).

¶Methods for testing tar and bituminous materials : Determination of matter insoluble in Benzene (*first revision*).

TABLE 2 NUMBER OF CONTAINERS TO BE SELECTED

Lot Size	No. of Containers
1	1
2-15	2
16-50	3
51-150	5
151-500	8
501 and above	13

5.5 Criteria for Conformity

5.5.1 The lot shall be considered as conforming to the requirements of the specification if the conditions mentioned in **5.5.2** and **5.5.3** are satisfied.

5.5.2 From the test results for water, mineral matter (ash) and viscosity, the mean ($\bar{X}$) and range (R) shall be calculated. The following conditions shall satisfy:

a) ($\bar{X} - 0{\cdot}6\ R$) shall be greater than or equal to the minimum specified limit, and

b) ($\bar{X} + 0{\cdot}6\ R$) shall be less than or equal to the maximum specified limit.

5.5.3 The composite sample when tested for distillation and other requirements shall satisfy the corresponding requirements of the characteristics.

6. MARKING

6.1 Each container shall be legibly and indelibly marked with the following:

a) Manufacturer's name and trade-mark,

b) Month and year of manufacture, and

c) Batch number.

6.1.1 Each container may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

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INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 kg.m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2