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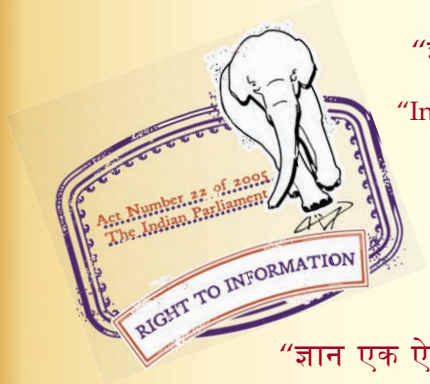
IS 218 (1983): Creosote Oil for Use as Wood Preservatives
[PCD 6: Bitumen Tar and their Products]



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"Knowledge is such a treasure which cannot be stolen"

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IS : 218 - 1983

(Reaffirmed 1998)

Indian Standard

SPECIFICATION FOR CREOSOTE OIL FOR USE AS WOOD PRESERVATIVES

(Second Revision)

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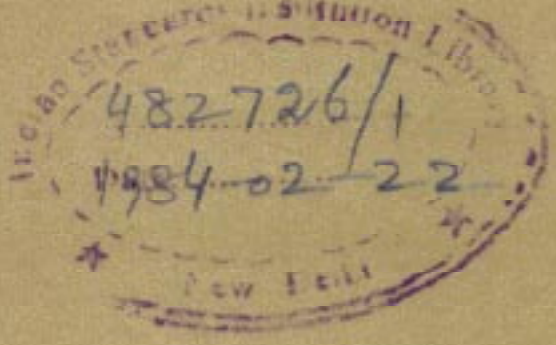

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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May 1983

Indian Standard

SPECIFICATION FOR CREOSOTE OIL FOR USE AS WOOD PRESERVATIVES

(Second Revision)

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(*Continued on page* 8)

AMENDMENT NO. 1 APRIL 2010
TO
IS 218 : 1983 SPECIFICATION FOR CREOSOTE OIL FOR USE AS WOOD PRESERVATIVES

(Second Revision)

[*Page* 5*, Table* 1, *Sl No.* (v)(b), *col* 3] — Substitute '20' *for* '–'.

[*Page* 5*, Table* 1, *Sl No.* (v)(c), *col* 3] — Substitute '40' *for* '–'.

(PCD 6)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR CREOSOTE OIL FOR USE AS WOOD PRESERVATIVES

(Second Revision)

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 23 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 Creosote oil is used as wood preservative mainly in the treatment of railway sleepers, telegraph and telephone poles, and timber for general use. This standard was first published in 1952 and was revised in 1961 wherein reference to the compiled standard on methods of test for bitumen and tar was included. In this second revision, creosote has been classified into two types depending upon the carbonization process. The quality requirements have been modified and the safety precautions to be observed, while handling the material, have also been specified. Besides, anthracene oil has been deleted as it was felt not necessary to specify it separately in the standard and reference to IS : 1201 to 1220-1978* has also been incorporated.

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.

*Methods for testing tar and bituminous materials (*first revision*).
†Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard covers materials commercially known as coal tar creosote (or creosote oil) primarily used for preservation of wood.

2. TYPES

2.1 Creosote shall be of two types as given below:

a) Type I — that obtained from tar produced by the high temperature carbonization of coal, and

b) Type II — that obtained from tar produced by the medium or low temperature carbonization of coal.

2.2 This classification shall not be taken to imply that one type is superior to other in any respect.

3. REQUIREMENTS

3.1 Description — Creosote shall be homogeneous liquid and shall consist essentially of distillate of coal tar.

3.2 Liquidity — The materials shall liquefy completly on being warmed to 38°C, with stirring, and shall remain liquid on cooling down to 32°C, and on standing at that temperature for 2 hours.

3.3 The materials shall also comply with the requirements prescribed in Table 1.

4. TESTS

4.1 The materials shall be tested in accordance with the appropriate Indian Standards referred to in col 7 of Table 1.

5. PRECAUTIONS

5.1 Safety — All persons handling the creosote should be fully aware of the hazards involved in handling. Skin should be protected from coming in direct contact with the liquid. Eyes should be protected by using safety goggles, while handling the material.

5.2 First-Aid Treatment

5.2.1 *Skin* — The affected area may be washed immediately with industrial methylated spirit, followed by a wash with soap and water.

5.2.2 *Eye* — Immediate treatment is vital. Eye/eyes may be washed thoroughly with running cold water. Alternatively, if quick application is possible, use copious quantities of buffered phosphate solution prepared by mixing 700 g anhydrous potassium di-hydrogen phosphate (KH_2PO_4 $12H_2O$) in 850 ml distilled water. The solution can be stored for 3 months only. For use it should be diluted with three times of water.

TABLE 1 REQUIREMENTS FOR CREOSOTE

(*Clauses* 3.3 *and* 4.1)

Sl No.	Characteristics	Type I		Type II		Reference to Indian Standard
		Min	*Max*	*Min*	*Max*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Specific gravity 38/38°C	1·03	—	0·95	—	IS : 1202-1978*
ii)	Water content percent v/v	—	2·0	—	2·0	IS : 1211-1978†
iii)	Matter insoluble in toluene-percent w/w	—	0·5	—	0·5	IS : 1215-1978‡
iv)	Alkali soluble tar acids-percent v/v	—	—	15	—	IS : 1213-1978§
v)	Distillation fractions percent w/w distilling up to:	—	—	—	—	IS : 1213-1978§
	a) 210°C	—	5	—	5	
	b) 235°C	—	30	5	20	
	c) 315°C	—	75	40	60	
	d) 355°C	—	—	75	—	
	e) Residue	soft and nonsticky				
	f) Specific gravity of distillation fraction 235°C to 315°C at 38/38°C	1·025	—	0·935	—	IS : 1202-1978*
	g) Alkali soluble tar acids, in fraction 235°C to 315°C percent v/v	—	—	15	—	IS : 1213-1978§

*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 and Stark method) (*first revision*).

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

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

5.2.2.1 Alongwith the phosphate solution (*see* **5.2.2**) appropriate medicines for immediate use may also be kept in the laboratory.

6. SAMPLING AND CRITERIA OF CONFORMITY

6.1 Lot — In any consignment all the containers of creosote shall be grouped together to constitute a lot.

6.2 The number of containers to be selected at random from the lot shall depend upon the size of the lot and shall be as under:

Lot-Size	*Number of Containers to be Selected*
1	1
2 - 15	2
16 - 50	3
51 - 150	5
151 - 500	8
501 and above	13

6.3 From each of the containers selected as in **6.2** an average sample representative of the material in the container shall be drawn in accordance with the method prescribed in IS : 1201-1978* taking all the precautions mentioned therein. All these samples shall be stored separately.

6.4 Three sets of test samples shall be drawn, of which one shall be sent to the purchaser and one to the vendor. The third set of the test samples, bearing the seals of the purchaser and the vendor, shall constitute the referee sample, to be used in case of dispute between the purchaser and the vendor.

6.5 Criteria for Conformity

6.5.1 The lot shall be considered as conforming to the requirements of the standard if the conditions mentioned under **6.5.2** and **6.5.3** are satisfied.

6.5.2 From five test results the mean ($\overline{X}$) and Range (R) shall be calculated. The following conditions shall be satisfied:

a) $\overline{X}-0{\cdot}6R$) shall be greater than or equal to the minimum specified limit for the characteristic; and

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

6.5.3 The composite sample when tested shall satisfy the corresponding requirements of the characteristics.

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

7. MARKING

7.1 Each container shall be legibly and idelibly marked with the following:

a) Manufacturer's name and trade-mark,

b) Type,

c) Lot number, and

d) Date of manufacture.

7.1.1 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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