IS : 164 - 1981
(Reaffirmed 1993)

Indian Standard

SPECIFICATION FOR READY MIXED PAINT FOR ROAD MARKING

(First Revision)

Fourth Reprint JUNE 1998

(Incorporating Amendment No. 1)

UDC 667.637.222.625.75

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

Gr 4

October 1981

Indian Standard

SPECIFICATION FOR READY MIXED PAINT FOR ROAD MARKING

(First Revision)

Paints and Allied Products Sectional Committee, CDC 8

Chairman	*Representing*
SHRI K. N. R. SHARMA	Directorate General of Technical Development, New Delhi
Members	
SHRI R. D. KAWATRA (*Alternate* to Shri K. N. R. Sharma)	
SHRI BALJIT SINGH	Bhagsons Paint Industries (India), New Delhi
SHRI HARDIP SINGH (*Alternate*)	
SHRI K. M. BANERJEE	National Test House, Calcutta
SHRI V. M. BAVDEKAR	Asian Paints (India) Ltd, Bombay
SHRI P. K. BHANDARI	Shalimar Paints Ltd, Calcutta
SHRI S. BHATTACHARYYA	Alkali & Chemical Corporation of India Ltd, Rishra (WB)
SHRI G. N. TIWARI (*Alternate*)	
SHRI N. S. BIRDIE	Shri Ram Test House, Delhi
SHRI C. P. SHARDA (*Alternate*)	
SHRI S. K. BOSE	Directorate General of Supplies and Disposals (Inspection Wing), New Delhi
SHRI D. S. CHOWDHURY (*Alternate*)	
DR S. CHANDRA	Oil Technologists' Association of India, Kanpur
SHRI M. S. SAXENA (*Alternate*)	
SHRI A. S. DHINGRA	All India Small Scale Paint and Allied Industries Association, Bombay
DIRECTOR (EIC)	Export Inspection Council of India, Calcutta
SHRI T. K. S. MANI	Addisons Paints and Chemicals Ltd, Madras
SHRI M. B. SATYANARAYANA (*Alternate*)	
SHRI V. MULLOTH	Goodlass Nerolac Paints Ltd, Bombay
SHRI S. S. ANKAIKAR (*Alternate*)	
SHRI M. PHILIP	Indian Aluminium Company Ltd, Calcutta
SHRI P. N. PHADKE (*Alternate*)	

(*Continued on page* 2)

(*Continued from page* 1)

Members	*Representing*
SHRI K. S. RAJEEVALOCHANAM	Heavy Machine Building Plant, Heavy Engineering Co Ltd, Ranchi
SHRI D. P. MUKHERJEE (*Alternate*)	
SHRI D. RAMAMURTHY	Bharat Heavy Electricals Ltd, Hyderabad
SHRI N. D. GUPTA (*Alternate* I)	
SHRI R. C. MISRA (*Alternate* II)	
SHRI M. N. RAO	Indian Paint Association, Calcutta
SHRI M. M. GHOSH (*Alternate*)	
DR R. J. RATHI	Sudershan Chemical Industries Ltd, Pune
SHRI K. L. RATHI (*Alternate*)	
SHRI P. SATYANARAYANA	Development Commissioner (Small Scale Industries), New Delhi
DR S. K. KAPOOR (*Alternate*)	
SCIENTIFIC ADVISER TO THE CHIEF OF THE NAVAL STAFF	Naval Headquarters (Ministry of Defence)
DR A. K. SEN	Ministry of Defence (DGI)
SHRI S. K. ASTHANA (*Alternate*)	
SENIOR CHEMIST AND METALLURGIST	Railway Board (Ministry of Railways)
ASSISTANT RESEARCH OFFICER (*Alternate*)	
SHRI R. R. SEQUERA	Garware Paints Ltd, Bombay
DR P. G. CHAUDHARI (*Alternate* I)	
SHRI C. R. THUSE (*Alternate* II)	
DR S. M. SINGH	Central Building Research Institute (CSIR), Roorkee
SHRI R. S. SRIVASTAVA (*Alternate*)	
DR M. A. SIVASAMBAN	Regional Research Laboratory (CSIR), Hyderabad
DR M. M. SHIRSALKAR (*Alternate*)	
CAPT V. SUBRAMANIAN	The Shipping Corporation of India Ltd, Bombay
CAPT S. K. KHURANA (*Alternate*)	
SHRI V. D. TIWARI	Central Public Works Department, New Delhi
SURVEYOR OF WORKS (*Alternate*)	
DR HARI BHAGWAN, Director (Chem)	Director General, ISI (*Ex-officio Member*)

Secretary

SHRI R. K. SINGH
Deputy Director (Chem), ISI

Panel for RMP's, Enamels and Adjuncts, CDC 8 : 6 : 6

Convener

DR P. K. BHANDARI	Shalimar Paints Ltd, Calcutta

Members

SHRI K. M. BANERJEE	National Test House, Calcutta
SHRI R. D. BHATIA	Kohinoor Paints Pvt Ltd, Amritsar
CHEMIST AND METALLURGIST, RDSO, LUCKNOW	Railway Board, Ministry of Railways

(*Continued on page* 15)

Indian Standard

SPECIFICATION FOR READY MIXED PAINT FOR ROAD MARKING

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 10 June 1981, after the draft finalized by the Paints and Allied Products Sectional Committee had been approved by the Chemical Division Council.

0.2 This standard was first published in 1951 and was largely based on the interim coordinated draft prepared by the Coordinating Subcommittee on Specifications for Paints and Allied Stores of the Subcommittee of the No. 5 Standing Committee on Specifications for Paints and Allied Stores of the General Headquarters, India (now Army Headquarters).

0.3 This revision was taken up with a view to improving the performance of traffic paints on a specific request received from the Ministry of Shipping and Transport, Government of India, and the Indian Roads Congress, New Delhi. It was first intended to prescribe a performance test under actual service conditions, but due to difficulties expressed by testing laboratories in conducting the test, this was not found possible. Therefore, a collaborative investigation was taken up to develop an accelerated laboratory test and correlate it with the performance of the material under actual service conditions to determine the relative life span of traffic paints. For this purpose, laboratory tests and field trials were conducted on one-way and two-way traffic roads in New Delhi over a period of 18 months. Further, it was brought out that a laboratory test for wear resistance for over 6 hours would correspond to actual performance of the material to approximately 7 months on roads. However, two grades of the material, depending on its wear resistance, have been included in this revision. Grade 1 for over 6 hours of wear resistance, where quality would be decidedly better, and Grade 2 for 1 to 6 hours of wear resistance. It was recognized by the Committee that paints below one hour of resistance would be substandard. Further, the limit given for Grade 2 should be narrowed down later as and when more data are available.

0.3.1 Even though service trials were conducted at New Delhi, it is expected that this would generally hold good for all over the country. It has,

however, been decided to undertake similar service trials in other parts of the country to make the correlation more realistic. It may, however, be noted that laboratory tests indicate general suitability of traffic paints and also the uniformity of one lot to another in a consignment made on one paint formula; these tests may not predict the performance of any one paint formula under all possible end uses. It is, therefore, desirable that a test paint should be applied in a repeatable manner under careful study conditions and then be tested and evaluated at intervals throughout the useful life of the paint.

0.3.2 The correlation coefficient obtained between laboratory test and field performance at the two sites were moderately high, showing that there was conformity between the laboratory and field observations. It is, however, intended to further improve the equipment used for testing to get still closer correlation in due course. It is also proposed to incorporate the use of an abrasive material like sand with prescribed hardness and grit to improve the test procedure. The Committee was also aware of the need to incorporate a requirement and method of test for fungistatic properties. However, in absence of any commercial testing facilities inclusion of this test would be considered when such facilities become available in due course.

0.4 In this revision, the title of the standard has been simplified. Additional requirements for recoating property and flash point have been specified. In an experimental investigation carried out by the concerned Sectional Committee responsible for the preparation of this revision, solvent based material was found to be better in performance than water based paint. Water based paints have limitations in their use during rainy season. However, the Committee was of the opinion that technically it is possible to manufacture water based paints conforming to the requirements of this standard.

0.5 The Committee responsible for preparing this standard also recommended that time taken for wearing of the paint, as determined by the method given in Appendix D, in relation to unit cost of the material, should be the main guiding factor in the choice/purchase of traffic paints.

0.6 In preparation of this revision, substantial assistance has been derived from the recommendations of the experimental investigation taken up by the Central Road Research Institute, New Delhi, on the sample of traffic paints supplied by M/s Addisons Paints Ltd, Madras; Alkali & Chemical Corporation of India Ltd, Calcutta; Asian Paints (I) Ltd, Bombay; Garware Paints Ltd, Bombay; Goodlass Nerolac Paints Ltd, Bombay; Modi Paints & Varnish Works, Modi Nagar (UP); Nagrath Paints (Pvt) Ltd, Kanpur; and Shalimar Paints Ltd, Calcutta. The assistance so derived is gratefully acknowledged.

0.7 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.

1. SCOPE

1.1 This standard prescribes requirements and methods of sampling and test for ready mixed paint for road marking to Indian Standard Colour (ISC) No. 356 Golden Yellow, and White and Black. The material is used for marking roads and highways and in airports for traffic control. The material is also known as traffic paint.

1.2 White and yellow materials are used for traffic control and black material is used for painting kerb stones and traffic islands.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given under 2 of IS : 101-1964† and IS : 1303-1963‡ shall apply.

3. GRADES

3.1 There shall be two grades of the material depending upon its wear resistance as given below:

a) Grade 1 — Over 6 hours in wear resistance test, and

b) Grade 2 — Between 1 hour and 6 hours in wear resistance test.

4. CONSISTENCY

4.1 The material shall be supplied in brushing consistency, but shall be suitable for application by spraying or by using any commercial stripping equipment after thinning with a suitable thinner. The thinner to be used shall be specially marked on the container.

5. REQUIREMENTS

5.1 Composition — The material shall be of such a composition as to satisfy the requirements of this standard.

5.2 Durability — The material when tested as prescribed in Appendix A shall show no sign of cracking, flaking, peeling off, breakdown or more than slight fading of colour.

*Rules for rounding off numerical values (*revised*).
†Methods of test for ready mixed paints and enamels (*second revision*).
‡Glossary of terms relating to paints (*revised*).

5.3 The material shall also comply with the requirements given in Table 1.

TABLE 1 REQUIREMENTS FOR READY MIXED PAINT FOR ROAD MARKING

Sl No.	Characteristic	Requirement	Method of Test, Ref to	
			Appendix	Cl No. in IS : 101-1964*
(1)	(2)	(3)	(4)	(5)
i)	Drying time on bituminous surface (*see* A-1.1.1), *Max*			
	a) Surface dry	30 minutes	—	7.1, 7.2
	b) Hard dry	1 hour	—	and 7.3
ii)	Consistency	Smooth and uniform	—	7.4
iii)	Finish	Smooth and matt to semi-glossy	—	7.5
iv)	Application	Suitable for application by brushing without any appreciable drag on the brush at room temperature (21-38°C)	—	6
v)	Colour	Close match to the specified IS Colour (*see* IS : 5 - 1978†)	—	11
vi)	Wet capacity	Shall be between −10 percent and + 20 percent of the approved sample or the value declared by the manufacturer	—	10
vii)	Resistance to bleeding	To pass the test	B	—
viii)	Recoating property	To pass the test	C	—
ix)	Resistance to wear:			
	For Grade 1	Over 6 hours	D	—
	For Grade 2	1 to 6 hours		
x)	Residue on sieve, percent by mass, *Max*	0·3	—	13‡
xi)	Flash point °C, *Min*	10	—	24§ (Method A)
xii)	Keeping properties	Not less than one year	—	31

*Methods of test for ready mixed paints and enamels (*second revision*).

†Colours for ready mixed paints and enamels (*third revision*).

‡The working solvent shall, however, be same as that used in manufacture of the material and declared on the container.

§Except that the temperature of the sample shall be adjusted between 0°C and 1°C.

5.4 Mass in kg/10 Litres — The minimum mass in kg/10 litres of the material, when tested in accordance with **25** of IS : 101-1964*, shall be within ± 3 percent of the value declared by the manufacturer.

6. PACKING AND MARKING

6.1 Packing — Unless otherwise agreed to between the purchaser and the supplier (*see also* **4**), the paint shall be packed in metal containers conforming to IS : 1407-1968† or IS : 2552-1979‡.

6.2 Marking — Each container shall be marked with the following:

a) Name, grade, mass in kg/10 litres, thinner used and flash point of the material;

b) Name of the manufacturer and/or his recognized trade-mark, if any;

c) Volume of the material;

d) Batch No. or lot No. in code or otherwise; and

e) Month and year of manufacture.

6.2.1 The containers 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.

6.3 The containers, excluding those containing water based material, shall also be marked 'HIGHLY FLAMMABLE LIQUID' in red letters (either printed on the label affixed to the container or lithographed or stencilled thereon with indelible ink) in a type size of not less than 50 mm. In addition, all containers for storage and transport shall comply with the requirements of latest issue of Red Tariff and requirements as laid down from time to time by the Chief Inspectorate of Explosives, Government of India, for packing, storage and transit of flammable liquids and the Boards of Trade Regulations as applicable thereon for transport by steamers.

---

*Methods of test for ready mixed paints and enamels (*second revision*).
†Specification for round paint tins (*first revision*).
‡Specification for steel drums (galvanized and ungalvanized) (*second revision*).

6.4 Other details of packing and marking shall be in accordance with instructions given by the purchaser.

7. SAMPLING

7.1 Representative samples of the material shall be drawn as prescribed under 3 of IS : 101-1964*.

7.2 Criteria for Conformity — A lot shall be declared as conforming to the requirements of this standard if the test results of the composite sample satisfy the requirements prescribed under **5**.

8. TEST METHODS

8.1 Tests shall be conducted as prescribed in IS : 101-1964* and Appendices A to D. References to relevant clauses of IS : 101-1964* are given in col 5 of Table 1 and in **5.4**. References to appendices are given in **5.2** and in col 4 of Table 1.

8.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS : 1070-1977†) shall be employed in tests.

NOTE — ' Pure chemicals ' shall mean chemicals that do not contain impurities which affect the results of analysis.

8.3 For matching against Indian Standard colours, IS : 5-1978‡ shall be used.

APPENDIX A

(*Clause* 5.2)

TEST FOR DURABILITY

A-0. GENERAL

A-0.1 Outline of the Method — A film of the material prepared on a standard bituminous surface is exposed to atmosphere for 25 days. At the end of the period, the film is subjected to water spray for stipulated period and the condition of the film examined.

*Methods of sampling and test for ready mixed paints and enamels (*second revision*).
†Specification for water for general laboratory use (*second revision*).
‡Colours for ready mixed paints and enamels (*third revision*).

A-1. MATERIAL

A-1.1 Standard Bituminous Surface — Prepare as follows:

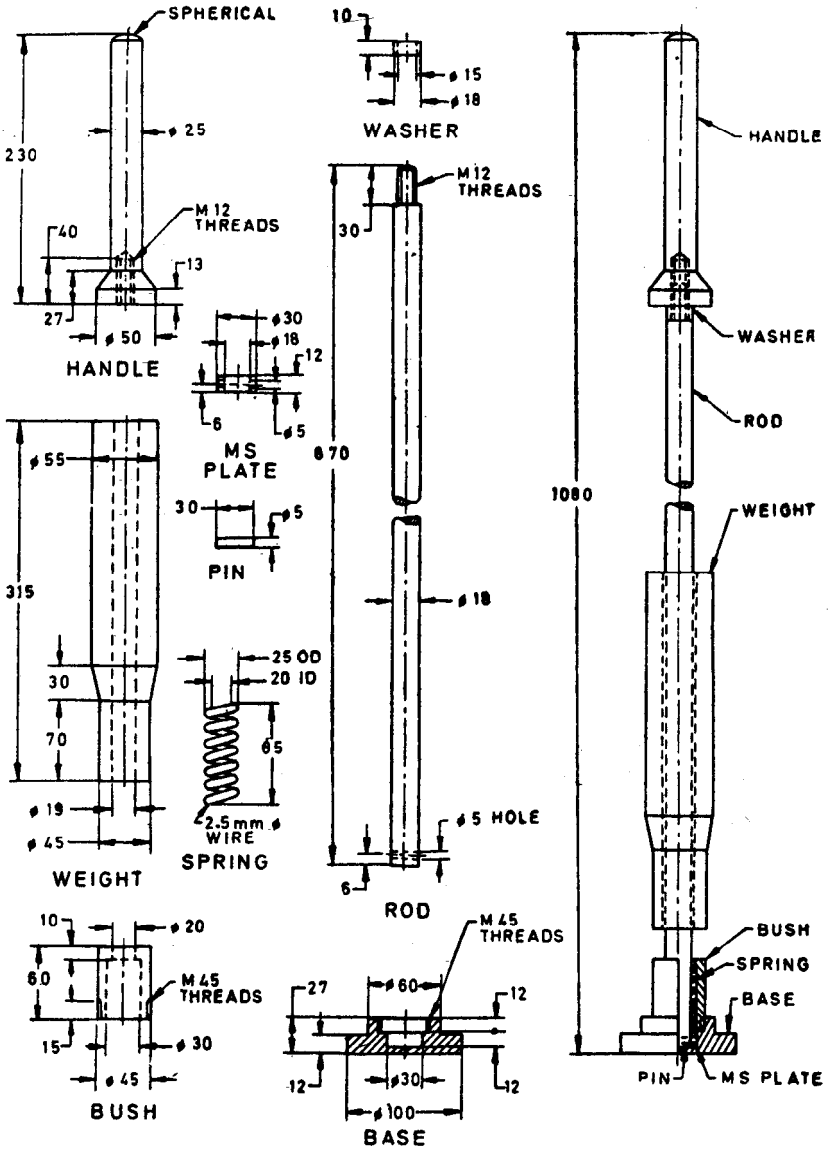
A-1.1.1	*Composition*	*Percent by Mass*
	a) Bitumen, of penetration 60 to 80 at 27°C	12
	b) Sand, passing 425 micron IS Sieve and retained on 250 micron IS Sieve [*see* IS : 460 (Part I)-1978*]	76
	c) Filler, cement (*see* IS : 269-1976†)	12

A-1.1.2 *Preparation* — Heat the bitumen and sand separately at 150 to 190°C. When dry, thoroughly mix them at the same temperature and add the filler. Fill the hot bituminous material (*see* **A-1.1.1**) in the circular cavity of the test track and level the surface suitably by means of a spatula. Subsequently, compact it as follows or by any suitable compacting machine. Keep a circular disc made of mild steel sheet of about 3·5 mm thickness and diameter of about 298 mm to the inner side of the test track over the surface. Compact by means of Marshall Compaction Hammer (*see* Fig. 1) first at the centre of the plate and later at 4 uniformly distributed diagonal points over the remaining area by lifting and dropping the hammer 10 times at each point. This hammer consists of a flat circular tamping face and a 450 grams sliding weight with a free fall of 450 mm as shown in Fig. 1.

A-2. PROCEDURE

A-2.1 Apply a coat of the material, by brushing, to give a dry film weight commensurate with the weight in kg/10 litre of the material as specified in **6.4** of IS : 101-1964‡ over the standard bituminous surface prepared as in **A-1.1.1**, not less than 20 mm in thickness on a suitable base. Air dry for 24 hours. Expose the panel outdoor under dry conditions at an angle of 45 degrees facing south for 25 days. At the end of the 25-day period, subject the panel to a fine spray of water at a temperature not above 30°C for 6 hours daily, from 0800 to 1400 hours for 6 days. During the spray of water, the panel shall remain exposed facing south at an angle of 45 degrees.

*Specification for test sieves : Part I Wire cloth test sieve (*second revision*).
†Specification for ordinary and low-heat Portland cement (*third revision*).
‡Methods of test for ready mixed paints and enamels (*second revision*).



1A Detail Drawings of Marshall Compaction Hammer

1B Assembly Drawing of Marshall Compaction Hammer

All dimensions in millimetres.

FIG. 1 MARSHALL COMPACTION HAMMER

A-2.1.1 A suitable spray is provided by a water supply through a hose at a pressure of 140 g/cm^2.

A-2.2 The paint film, when tested in the above manner, shall not show signs of flaking or peeling or other evidence of breakdown, and more than slight fading of colour.

APPENDIX B

[*Table* 1, *Sl No.* (vii)]

TEST FOR BLEEDING

B-1. PROCEDURE

B-1.1 Apply a coat of the material, by brushing, to give a dry film weight commensurate with the weight in kg/10 litres of the material (*see* **6.4** of IS : 101-1964*), over a smooth standard bituminous surface re-prepared as prescribed in **A-1**. Allow the panel to air-dry for 1 hour. Maintain the panel at 50°C for 1 hour.

B-1.2 The material shall be deemed to have passed this test if it does not show any bleeding.

APPENDIX C

[*Table* 1, *Sl No.* (viii)]

TEST FOR RECOATING PROPERTIES

C-0. GENERAL

C-0.1 Outline of the Method — A coat of the material is applied on a standard bituminous surface. After allowing it to dry for specified period,

*Methods of test for ready mixed paints and enamels (*second revision*).

a second coat is applied to test the ability of the material to take up the second coat.

C-1. PROCEDURE

C-1.1 Apply one coat of the material by brushing on a standard bituminous surface (*see* **A-1**) and allow to air-dry for 24 hours. Apply a second coat of the material at the end of this period.

C-1.2 The requirement of the standard shall be taken as having been satisfied if it is possible to apply the second coat without lifting or working up of the first coat.

APPENDIX D

[*Table* 1, *Sl No.* (ix)]

TEST FOR RESISTANCE TO WEAR

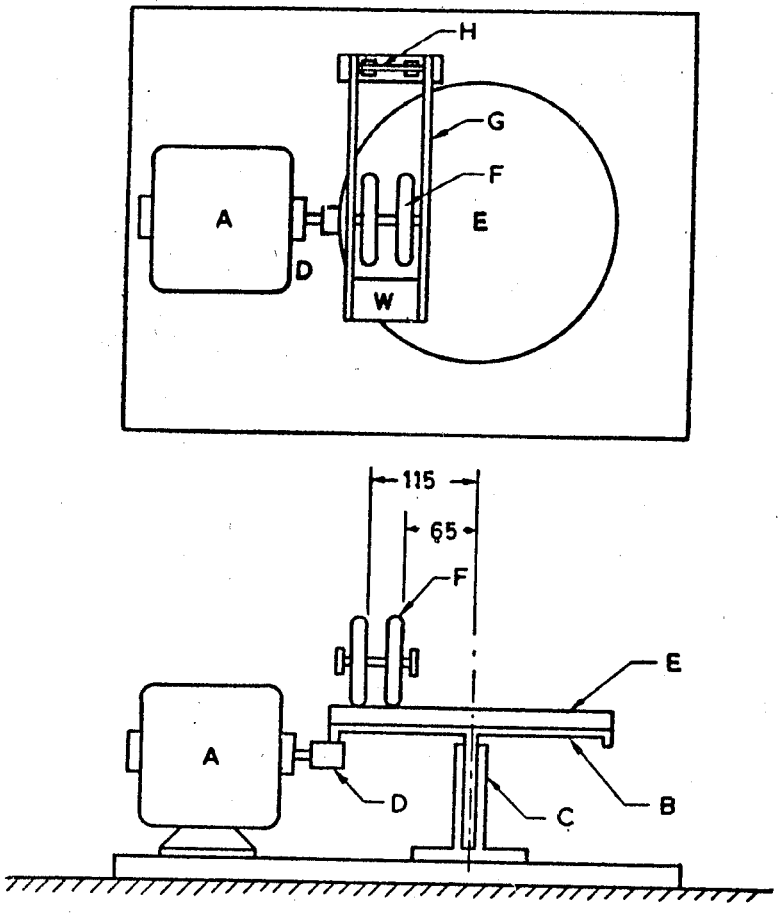
D-0. GENERAL

D-0.1 Outline of the Method — The painted film of the material on a standard bituminous surface is subjected to traction of rubber tyred wheels with specified load and for specified time. At the end of the stipulated period, the surface is examined for wear.

D-1. PROCEDURE

D-1.1 Prepare the paint films of the material and approved sample as prescribed in Appendix A on adjacent sections of a smooth, standard bituminous surface, 6 mm thick, on a 300 diameter disc of suitable base. Air-dry for 2 hours.

D-1.2 Rotate the painted surface of the disc on a turn table *B*, as shown in Fig. 2, at the rate of 200 rpm by a fractional horsepower motor *A*. Rotate by contact with the painted disc two rubber tyred wheels similar to car tyre composition *F*, each 100 mm in diameter and having a face width of 12·5 mm, linked so as to rotate together in a frame *G*, hinged at *H*, the distances of the nearer edges of the wheel track from the centre of the turn



A — 200 W Motor. *B* — 300 mm diameter Turn table. *C* — Bearings for *B*. *D* — Friction Drive for *B*. *E* — Concrete Disc (Plain or Surfaced with Bituminous Compound). *F* — Two Rubber-Tyred Wheels, 100 mm dia × 12·5 mm thick. *G* — Cradle Holding *F* and Pivoted at *H*. *W* — Mass of Lead attached to *G* and giving Load of 3·2 kg on *F*; *B* is rotated at 200 rev/min by *A*

All dimensions in millimetres.

FIG. 2 APPARATUS FOR DETERMINATION OF RESISTANCE TO WEAR

table being 60 and 110 mm respectively. Attach a weight (W) to the frame to give a load equivalent of 3·2 kg at the area of contact of the wheels and the painted surface, weight being determined at point of contact by a spring balance. During the test, keep the painted surface wet with water sprayed on the inner edge of the inner wheel track at a rate of 600 ml per hour. Examine visually the wear on both the tracks at regular intervals till the paint wears out completely in one of the tracks. After 6 hours of continuous operation, allow rest for 18 hours. Continue the testing after 18 hours. Again allow rest till the paint wears out completely in one of the tracks. Declare the value in the test report.

D-1.2.1 The material of Grade 1 shall be deemed to have passed the test if it wears out only after 6 hours.

D-1.2.2 The material of Grade 2 shall be deemed to have passed the test if it wears out between 1 and 6 hours.

(*Continued from page* 2)

Members	*Representing*
SHRI D. S. CHOWDHURY	Directorate General of Supplies and Disposals (Inspection Wing), New Delhi
SHRI S. K. BASU (*Alternate*)	
SHRI S. S. DHINGRA	U. K. Paints Industries, Amritsar
SHRI S. S. KATIYAR	Ministry of Defence (DGI)
SHRI R. S. SENGAR (*Alternate*)	
SHRI T. K. S. MANI	Addisons Paints & Chemicals Ltd, Madras
SHRI M. N. RAO	Indian Paints Association, Calcutta
DR A. B. GERSAPPE (*Alternate*)	

Ad hoc Panel for Development of Accelerated Laboratory Test for Durability of Traffic Paints, CDC 8 : 6 : 14

Convener	
DR N. S. SRINIVASAN	National Traffic Planning and Automation Centre, Trivandrum
Members	
DR P. K. BHANDARI	Shalimar Paints Ltd, Calcutta
SHRI S. H. DESAI	Garware Paints Ltd, Thane
SHRI T. K. S. MANI	Addisons Paints & Chemicals Ltd, Madras
SHRI M. N. RAO	Indian Paint Association, Calcutta
DR S. M. SAREEN	Central Road Research Institute (CSIR), New Delhi
SHRI SHARFUDDIN (*Alternate*)	

BUREAU OF INDIAN STANDARDS

Headquarters:
Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002
Telephones: 323 0131, 323 3375, 323 9402
Fax : 91 11 3234062, 91 11 3239399, 91 11 3239382

Telegrams : Manaksanstha
(Common to all Offices)

	Telephone
Central Laboratory :	
Plot No. 20/9, Site IV, Sahibabad Industrial Area, Sahibabad 201010	8-77 00 32
Regional Offices:	
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	323 76 17
*Eastern : 1/14 CIT Scheme VII M, V.I.P. Road, Maniktola, CALCUTTA 700054	337 86 62
Northern : SCO 335-336, Sector 34-A, CHANDIGARH 160022	60 38 43
Southern : C.I.T. Campus, IV Cross Road, CHENNAI 600113	235 23 15
†Western : Manakalaya, E9, Behind Marol Telephone Exchange, Andheri (East), MUMBAI 400093	832 92 95
Branch Offices::	
'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMEDABAD 380001	550 13 48
‡Peenya Industrial Area, 1st Stage, Bangalore-Tumkur Road, BANGALORE 560058	839 49 55
Gangotri Complex, 5th Floor, Bhadbhada Road, T.T. Nagar, BHOPAL 462003	55 40 21
Plot No. 62-63, Unit VI, Ganga Nagar, BHUBANESHWAR 751001	40 36 27
Kalaikathir Buildings, 670 Avinashi Road, COIMBATORE 641037	21 01 41
Plot No. 43, Sector 16 A, Mathura Road, FARIDABAD 121001	8-28 88 01
Savitri Complex, 116 G.T. Road, GHAZIABAD 201001	8-71 19 96
53/5 Ward No.29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003	54 11 37
5-8-56C, L.N. Gupta Marg, Nampally Station Road, HYDERABAD 500001	20 10 83
E-52, Chitaranjan Marg, C-Scheme, JAIPUR 302001	37 29 25
117/418 B, Sarvodaya Nagar, KANPUR 208005	21 68 76
Seth Bhawan, 2nd Floor, Behind Leela Cinema, Naval Kishore Road, LUCKNOW 226001	23 89 23
NIT BUilding, Second Floor, Gokulpat Market, NAGPUR 440010	52 51 71
Patliputra Industrial Estate, PATNA 800013	26 23 05
Institution of Engineers (India) Building 1332 Shivaji Nagar, PUNE 411005	32 36 35
T.C. No. 14/1421, University P. O. Palayam, THIRUVANANTHAPURAM 695034	6 21 17

---

*Sales Office is at 5 Chowringhee Approach, P.O. Princep Street, CALCUTTA 700072	27 10 85
†Sales Office is at Novelty Chambers, Grant Road, MUMBAI 400007	309 65 28
‡Sales Office is at 'F' Block, Unity Building, Narashimaraja Square, BANGALORE 560002	222 39 71

Printed at Printograph, New Delh, Ph.: 5726847

AMENDMENT NO. 2 DECEMBER 1992
TO
IS 164 : 1981 SPECIFICATION FOR READY MIXED PAINT FOR ROAD MARKING

(First Revision)

(*Page* 5, *clause* 5.2, *line* 3) — Insert the word 'darkening' after the word 'fading'.

(CHD 020)

Printed at Printograph, New Delhi-5 (INDIA)

AMENDMENT NO. 3 JUNE 1993
TO
IS 164 : 1981 SPECIFICATION FOR READY MIXED PAINT FOR ROAD MARKING

(First Revision)

(*Page* 4, *clause* **0.6**) — Insert the following after **0.6** and renumber the subsequent clause accordingly:

'**0.7** A scheme for labelling environment friendly products to be known as ECO Mark is being introduced at the instance of the Ministry of Environment and Forests (MEF). The ECO Mark shall be administered by the Bureau of Indian Standards (BIS) under the BIS Act, 1986 as per the Resolution No. 71 dated 20 February 1991 published in the Gazette of the Government of India. For a product to be eligible for ECO Mark it shall also carry standard mark of BIS for quality besides meeting additional optional environment friendly (EF) requirements. This amendment is, therefore, being issued to this standard to include EF requirements for road marking paint .'

(*Page* 5, *clause* **2.1**) — Substitute the following for the existing clause:

'**2.1** For the purpose of this standard, the definitions given in IS 1303 :1983 and the following shall apply.

2.1.1 *Volatile Organic Compounds* (*VOC*) — The volatile matter content minus the water content in road marking paint.'

(*Page* 7, *clause* **5.4**) — Insert the following after **5.4:**

'**5.5 Optional Requirement for ECO Mark**

5.5.1 *General Requirements*

5.5.1 The product shall conform to the requirements for quality, safety and performance prescribed under **5.1** to **5.4.**

5.5.1.2 The manufacturer shall produce to BIS environmental consent clearance from the concerned State Pollution Control Board as per the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 alongwith the authorization, if required under the Environment (Protection) Act, 1986 and rules made thereunder, while applying for ECO Mark.

5.5.2 *Specific Requirements*

5.5.2.1 The product shall contain not more than 5 percent, by mass, Volatile Organic Compounds, when tested according to the method prescribed in IS 101 (Part 2/Sec 1) : 1988* and IS 101 (Part 2/Sec 2) : 1986†.

5.5.2.2 The product shall not contain more than 0.1 percent by mass (as metal), of any toxic metals such as lead, cadmium, chromium (VI) and their compounds when tested by the relevant Atomic Absorption Spectrophotometric methods.

5.5.2.3 The product shall not be manufactured from any carcinogenic ingredients.

NOTE — The Central Drugs Research Institute and Industrial Toxicological Research Centre would furnish a list of carcinogenic ingredients to BIS and would also keep BIS informed about the changes therein.'

(*Page* 7, *clause* **6.1**) — Insert the following after **6.1**:

'**4.1.1** The ECO Marked product shall be packed in such packages which shall be recyclable/reusable or biodegradable. It shall be accompanied with instructions for proper use so as to maximise product performance and minimise wastage.

NOTE — Subsequently the parameters evolved for packaging material/packages for ECOMARK, which are being separately notified/circulated, shall also apply.'

(*Page* 7, *clause* **6.2**) — Insert the following after **6.2** and renumber the subsequent clauses accordingly:

'**6.2.1** In case of products certified for ECO Mark THREE major ingredients and hazardous chemicals shall be marked on the container.

6.2.1.1 The criteria for which the product has been been labelled as ECO Mark may also be marked on the container.'

---

* Methods of sampling and test for paints, varnishes and related products: Part 2 Test on liquid paints (Chemical examination), Sec 1 Water content (*third revision*).

† Methods of sampling and test for paints, varnishes and related products: Part 2 Test on liquid paints (Chemical examination), Sec 2 Volatile matter (*third revision*).

(CHD 020)

Printed at Printograph, New Delhi-5 (INDIA)