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IS 9862 (1981): Ready mixed paint, brushing, bituminous, black, lead-free, acid, alkali, water and chlorine resisting [CHD 20: Paints, Varnishes and Related Products]



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IS : 9862 - 1981
(Reaffirmed 2009)

Indian Standard

SPECIFICATION FOR
READY MIXED PAINT, BRUSHING,
BITUMINOUS, BLACK, LEAD-FREE, ACID,
ALKALI, WATER AND CHLORINE RESISTING

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

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TO
IS : 9862 - 1981 SPECIFICATION FOR READY MIXED
PAINT, BRUSHING, BITUMINOUS, BLACK, LEAD-
FREE, ACID, ALKALI, WATER AND CHLORINE
RESISTING

[*Page 5, Table 1, Sl No. (iii), col 3*] — Substitute 'smooth and semi-glossy to glossy' *for* the existing entries.

(CDC 8)

Indian Standard

SPECIFICATION FOR
READY MIXED PAINT, BRUSHING,
BITUMINOUS, BLACK, LEAD-FREE, ACID,
ALKALI, WATER AND CHLORINE RESISTING

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Indian Standard
**SPECIFICATION FOR
READY MIXED PAINT, BRUSHING,
BITUMINOUS, BLACK, LEAD-FREE, ACID,
ALKALI, WATER AND CHLORINE RESISTING**

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 14 August 1981, after the draft finalized by the Paints and Allied Products Sectional Committee had been approved by the Chemical Division Council.

0.2 The material covered in this specification was so far covered as type 2 of IS : 158-1968*. This created some difficulty while issuing tenders and supplying the right material. The concerned technical committee responsible for the preparation of this standard, therefore, decided to have two different specifications covering each type of material separately. Accordingly, Type 1 of the material under IS : 158-1968* intended for painting of funnels, boilers, apparatus, etc., has been covered in IS : 158-1981†. This standard covers the material intended for painting of apparatus, equipment, machines, etc.

0.2.1 The Committee has felt that the material conforming to this specification would be suitable for painting of drinking water tanks also, as tested by the method given in Appendix A of this standard. However, further data would be collected from Public Health Laboratories and the matter reconsidered, as and when necessary.

0.3 This standard contains clause 4.1 which calls for agreement between the purchaser and the supplier.

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.

*Specification for ready mixed paint, brushing, bituminous, black, lead-free, acid, alkali, water and heat resisting for general purposes (*second revision*).

†Specification for ready mixed paint, brushing, bituminous, black, lead-free, acid, alkali and heat resisting (*third revision*).

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

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1. SCOPE

1.1 This standard prescribes requirements and methods of sampling and test for ready mixed paints, brushing, bituminous, black, lead-free, acid, alkali, water and chlorine resisting

1.1.1 The material is used for the protection of apparatus equipment, machines and drinking water tanks (*see also 0.2.1*).

2. TERMINOLOGY

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

2.1.1 Hard Dry — A condition of the paint film such that a second coat of the material can be applied satisfactorily on it.

3. REQUIREMENTS

3.1 Composition — The material shall be an unpigmented bituminous base paint of such a composition as to satisfy the requirements of this standard.

3.2 Water Content — It shall not exceed 0.5 percent by mass when tested as prescribed in 14 of IS : 101-1964*.

3.3 Mass in kg/10 Litres — The minimum mass in kg/10 litres of the material shall be 8.5 when tested as prescribed in 25 of IS : 101-1964*. However, it shall be within ± 3 percent of the sample approved against this specification, if any.

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

3.5 Lead-Free Material — The material, when tested as prescribed in 29 of IS : 101-1964* shall not contain lead or lead compounds or a mixture of both calculated as metallic lead (Pb), exceeding 0.03 percent by mass.

4. PACKING AND MARKING

4.1 Packing — The material shall be packed as agreed to between the purchaser and the supplier.

4.2 Marking — The containers shall be marked with the following particulars:

- a) Name of the material;
- b) Manufacturer's name and his recognized trade-mark, if any;

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

†Glossary of terms relating to paints (*revised*).

**TABLE 1 REQUIREMENTS FOR READY MIXED PAINT, BRUSHING,
BITUMINOUS, BLACK LEAD-FREE, ACID ALKALI,
WATER AND CHLORINE RESISTING**
(Clause 3.4)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST AND REF TO	
			Appendix	Cl No in IS : 101- 1964*
(1)	(2)	(3)	(4)	(5)
i)	Drying time, hard dry	Not more than 8 hours	—	7.2
ii)	Consistency	Smooth and uniform and — suitable for application by brushing without appreciable drag on the brush	—	7.4
iii)	Finish	Smooth eggshell to semi-glossy	—	7.5
iv)	Wet opacity	Between — 10 percent and + 20 percent of the approved sample or the value declared by the manufacturer and accepted by the com- petent testing labo- ratory	—	10
v)	Colour	Black but close match to approved sample	—	11
vi)	Flexibility and adhesion after 96 hours air- drying	No visible damage or detachment of the film	—	16
vii)	Stripping test	Scratches free from jagged edges	—	17
viii)	Protection against corro- sion under conditions of condensation	No sign of corrosion	—	18
ix)	Volatile matter, percent by mass, <i>Max</i>	55	—	26
x)	Resistance to water	To pass test	A	—
xi)	Resistance to acid	To pass test	B	—
xii)	Resistance to alkali	To pass test	C	—
xiii)	Resistance to chlorine	To pass test	D	—
xiv)	Flash point, °C, <i>Min</i>	30	—	24
xv)	Keeping properties	Not less than one year	—	31

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

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- c) Volume of the material;
- d) Batch number or lot number in code or otherwise; and
- e) Month and year of manufacture.

4.2.1 The containers may also be marked with the Standard Mark

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard 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 BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

4.3 The material when intended for Defence uses, packing and marking shall be in accordance with IS : 5661-1970*.

5. SAMPLING

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

5.2 Number of Tests

5.2.1 Individual samples shall be tested for mass in kg/10 litres. If they are found to be uniform and conforming to this specification, the individual samples may be blended to make a composite sample.

5.2.2 Tests for remaining characteristics of the material shall be conducted on the composite sample.

5.3 Criteria for Conformity

5.3.1 The lot shall be declared as conforming to the requirements of this specification if individual samples are uniform and conforming to the specification limits of mass in kg/10 litres, and if the characteristics tested on composite sample satisfy the corresponding requirements given in this specification.

6. TEST METHODS

6.1 Tests shall be conducted as prescribed in IS : 101-1964† and in Appendices A to D. Reference to relevant clauses of IS : 101-1964† is given in 3.2, 3.3, 3.5 and col 5 of Table 1 and to Appendices in col 4 of Table 1.

*Code of practice for packing and marking of packages of paints, enamels, varnishes and allied products.

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

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

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

APPENDIX A

[Table 1, Item (x)]

DETERMINATION OF RESISTANCE TO WATER

A-0. OUTLINE OF THE METHOD

A-0.1 A tinned container is internally coated with the material and after hardening for a specified period, is filled with water and kept with the lid on for a stipulated time. Thereafter, the water is tested for odour before and after boiling. The condition of the film is also examined.

A-1. PROCEDURE

A-1.1 Apply a coat of the material, by brushing, to the inside surface of a clean tin container (conforming to IS : 916-1975†), with a lever lid, 125 mm high and 90 mm in diameter, to give a dry film mass commensurate with the mass in kg/10 litres of the material, as specified in 6.4 of IS : 101-1964‡. Allow the paint film to air-dry for 7 days. At the end of this period, store water in the container for 24 hours and then rinse the container thoroughly with water. Then fill the container with water. Allow the water to remain in contact with the paint film for 3 days with lid closed. Examine the water for odour and taste at the end of this period. Then take the water from the container in a beaker, boil and cool it, and again examine for odour and taste.

A-1.2 The material shall be deemed to have passed the test, if the paint film remains firmly adherent and imparts no unpleasant odour or taste to water.

APPENDIX B

[Table 1, Item (xi)]

DETERMINATION OF RESISTANCE TO ACID

B-0. OUTLINE OF THE METHOD

B-0.1 An air dried film of the material is immersed in dilute sulphuric acid. Any deterioration of the film is then examined.

*Specification for water for general laboratory use (*second revision*).

†Specification for 18-Litre square tins (*second revision*).

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

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B-1. REAGENT

B-1.1 Dilute Sulphuric Acid — 1 : 20 (v/v).

B-2. PROCEDURE

B-2.1 Apply a coat of the material, by brushing, to a 150 × 50 mm clean glass panel to give a dry film mass commensurate with the mass in kg/10 litres of the material, as specified in 6.4 of IS 101-1964*. Allow the panel to air-dry in a horizontal position for 24 hours under standard conditions (*see* 2.4 of IS : 101-1964*). Immerse the panel partially in dilute sulphuric acid for 24 hours. Take out the panel, wash carefully and examine the immersed portion of the film after drying for one hour.

B-2.2 The material shall be deemed to have passed the test if the paint film on the panel remains firmly adherent. Slight change in characteristic for softening, blistering, cracking and colour shall not be a cause of rejection.

A P P E N D I X C

[*Table 1, Item (xii)*]

DETERMINATION OF RESISTANCE TO ALKALI

C-0. OUTLINE OF THE METHOD

C-0.1 An air-dried film of the material is immersed in a solution of sodium carbonate and examined for any deterioration.

C-1. REAGENTS

C-1.1 Sodium Carbonate Solution — Five percent anhydrous sodium carbonate in water (*m/v*).

C-2. PROCEDURE

C-2.1 Partially immerse a panel, prepared as prescribed in Appendix B, in the aqueous solution of sodium carbonate for 4 hours. Take out the panel, wash and examine the immersed portion of the film after drying for one hour

C-2.2 The material shall be deemed to have passed the test if the paint film on the panel remains firmly adherent. Slight change in characteristic for softening, blistering, cracking and colour shall not be a cause of rejection

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

A P P E N D I X D

[*Table 1, Item (xiii)*]

DETERMINATION OF RESISTANCE TO CHLORINE

D-0. OUTLINE OF THE METHOD

D-0.1 Three-fourths of a prepared panel of the material is immersed for the stipulated time in the dark in an aqueous solution of chlorine. It is then taken out and examined for the nature and extent of any deterioration.

D-1. REAGENTS

D-1.1 Chlorine Water — Containing 0.05 percent of chlorine (*m/v*).

D-2. PROCEDURE

D-2.1 Immerse three quarters of a panel, prepared as prescribed in Appendix B, in chlorine water in a suitable glass container, which is either covered with black paper or painted outside with a black paint and keep in a dark place for 72 hours. After this period, take out the panel, wash and examine the immersed portion of the film after drying for 24 hours.

D-2.2 The material shall be deemed to have passed the test if the paint film on the panel shows no blistering and cracking. Slight dulling and change of colour shall not be a cause of rejection.

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