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SPECIFICATION FOR EMULSION DISTEMPER PAINTS

BUREAU OF CEYLON STANDARDS

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SLS 564:1982

Gr. 6

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This standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
SPECIFICATION FOR EMULSION DISTEMPER PAINTS

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Bureau of Ceylon Standards on 1982-05-24, after the draft, finalised by the Drafting Committee on Paints had been approved by the Chemicals Divisional Committee.

This specification covers emulsion type distemper paint supplied in paste form. Distemper paint coatings are more desirable than the ordinary white-wash because of their better adhesion to the substrate.

All standard values given in this specification are given in SI units.

For the purpose of deciding whether a particular requirement of this specification is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with CS 102. The number of significant places retained in the rounded off value, should be the same as that of the specified value in this specification.

In the preparation of this specification, the assistance obtained from the publications of the Indian Standards Institution is gratefully acknowledged.

1 SCOPE

This specification prescribes the requirements and the methods of sampling and test for emulsion distemper, colour as required. The material is used as a flat finish for interior decorative purposes on walls, ceilings e.t.c.

2 REFERENCES

CS 102 Presentation of numerical values

SLS 489 Glossary of terms for paints

SLS 523 Sampling paints

SLS 535 Test for paints

3 DEFINITIONS

For the purpose of this specification the following definition in addition to those given in SLS 489 shall apply.

3.1 **approved sample** : A sample accepted by the indentor or inspection authority as the basis for supply and which complies in all respects with the requirements of this specification.

4 REQUIREMENTS

4.1 Form and condition

The material shall be in the form of a homogeneous paste, free from odour of putrefaction as such and when mixed with water.

4.2 Composition

The material shall be of the emulsion type, containing suitable preservatives and of such a composition as to comply with the requirements given in this specification.

4.3 Consistency

The material when mixed with a suitable quantity of water, according to the direction given by the manufacturer shall be in such a condition that stirring easily produces a smooth uniform paint suitable for application by brushing.

4.4 Other requirements

The material when tested after mixing as described in 4.3 shall also comply with the requirements given in Table 1.

TABLE 1 - Requirements for emulsion distemper paint

Sl No. (1)	Characteristic (2)	Requirement (3)	Method of test ref. (4)
i)	Drying time, hard dry, max.	3 h	Appendix A
ii)	Finish	Smooth and matt	Appendix A
iii)	Colour	Close match to colour specified by the purchaser in accordance with the colour card provided by manufacturer.	Appendix B
iv)	Fastness to light	To pass the test	Section 6.5 of SLS 535:Part 6
v)	Residue on sieve, per cent by mass, max.	1.0	Appendix C
vi)	Resistance to dry rubbing	To pass the test	Appendix D
vii)	Re-coating properties	To pass the test	Appendix E
viii)	Resistance to alkali	To pass the test	Appendix F
ix)	Keeping properties	Not less than one year	Appendix G

5 PACKING AND MARKING

5.1 Packing

The material shall be packed in suitable containers in the following measures.

100 ml, 200 ml, 500 ml, 1 l, 2 l, 4 l and 5 l.

5.2 Marking

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

a) The words *Emulsion distemper* ;

b) Colour ;

c) Name and address of the manufacturer and/or registered trade mark ;

d) Volume of the material in ml or l ;

e) Date of manufacture ;

f) Batch number or lot number in code or otherwise ;

g) Spreading capacity in m^2/l ; and

h) Instructions for thinning.

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

6 SAMPLING AND NUMBER OF TESTS

6.1 The method of drawing representative samples of the material shall be as specified in the relevant clauses of **SLS 523.**

6.2 From each of the sample container prepared as in **7.2.2** of **SLS 523:1980** a small but equal quantity of material shall be taken and mixed thoroughly to form a composite sample. The composite sample shall be transferred to a sample container.

6.3 Tests for all characteristics specified in this specification shall be carried out on the composite sample.

7 METHODS OF TEST

7.1 Tests shall be carried out as specified in **4.3**, Appendices **A** to **G** and the relevant sections of **SLS 535.**

7.2 Quality of reagents

Unless specified otherwise, chemicals of analytical grade and distilled water shall be employed in tests.

8 CRITERIA FOR CONFORMITY

The material shall be taken to have conformed to the specifications if the composite sample satisfies all the requirements specified in the specification.

APPENDIX A

DRYING TIME

Two methods have been specified for determination of hard drying time. The method specified in A.1 *shall be the reference method and shall be carried out in case of any dispute. A clean 150-mm x 150-mm neat cement block of thickness 5 mm shall be used as the testing panel.*

A.1 METHOD 1

A.1.1 Determination of hard drying time

This test shall be carried out as specified in **SLS 535:Part 3: Section 3.5.**

A.2 METHOD 2

A.2.1 Principle of method

A cement block is evenly coated with the material by using a bar applicator and air-dried for a specified time. The panel is examined for hard drying time and finish.

A.2.2 Procedure

A.2.2.1 Apply the material by using a bar applicator to give a wet film thickness of 50 µm on a 150-mm x 150-mm neat cement block of thickness 5 mm and air dry for 3 h in a well ventilated room in a horizontal position. During drying protect the film from direct sunlight.

A.2.2.2 The material shall be deemed to have complied with the requirements of this specification for drying if a second coat of the material can be applied satisfactorily at the end of 3 h and the film becomes hard dry at the end of 3 h.

A.3 FINISH

Examine the panel after applying the second coat. The material shall be deemed to have complied with the requirements of this specification for finish if the composite film gives a smooth and matt finish.

APPENDIX B

DETERMINATION OF COLOUR

B.1 PRINCIPLE OF METHOD

The colour of the material applied on a cement block is compared visually in diffused daylight with that of the standard or agreed colour card provided by the manufacturer.

B.2 PROCEDURE

B.2.1 Apply the material using a bar applicator to give a wet film thickness of 50 µm on a 150-mm x 150-mm neat cement block of thickness 5 mm. Air-dry the film as prescribed in Appendix A. When the film is dry, apply a second coat of the material to give again a combined wet film thickness of 50 µm and air-dry. After 24 h, compare the colour of the film with that of the standard or previously agreed colour visually in diffused daylight.

B.2.2 The material shall be deemed to have passed the test if the colour of the material matches the standard or previously agreed colour.

APPENDIX C

DETERMINATION OF RESIDUE ON SIEVE

C.1 PRINCIPLE OF METHOD

The material is made into a thin paste with water and passed through a 63-µm sieve.

C.2 PROCEDURE

C.2.1 Weigh to the nearest milligram, 50 g of the sample and transfer to a 250-ml beaker. Mix the material to a thin paste with water and keep for 24 hours. After this period, thoroughly mix the contents of the beaker and break up all lumps with the flattened end of a stirring rod without grinding action. Then transfer the contents of the beaker to a 63-µm sieve, using a wash bottle containing water. Remove with a camel hair brush any small particles of the material that may be retained on the stirring rod or the sides of the beaker. Wash the residue left on the sieve with water and gently brush with a camel hair brush until the water passing over the residue and through the sieve is clear and free from solid particles. When washing is complete, dry the sieve for one hour at 100 ± 2 ^{o}C, cool and then weigh the residue.

C.2.2 Calculate and express the result as percentage by mass of the material taken for the test.

APPENDIX D

RESISTANCE TO DRY RUBBING

D.1 PRINCIPLE OF METHOD

The material is converted into consistency suitable for application and then spread on a neat cement block. A second coat is applied and allowed to dry for a specified time. By rubbing the coated material with a piece of cloth, the extent to which the test cloth is soiled as compared to an approved sample of the material similarly tested at the same time, the material is assessed for resistance to dry rubbing.

D.2 PROCEDURE

D.2.1 Mix the material with water to produce a material of suitable consistency for application by brushing. Apply one coat of the mixed material on a clean 150-mm x 150-mm cement block of thickness 5 mm and allow to air-dry for 24 hours. Apply a second coat at the end of this period and allow to air-dry in a vertical position for 24 hours (see A.2.2).

D.2.2 The film shall then be rubbed firmly with a piece of white or black velvet cloth according to the colour of the material.

D.2.3 The requirement of the specification shall be taken as having been satisfied if the test cloth is not soiled by the film prepared from the material to a greater extent than by that prepared from the approved sample. When both are tested by the same person, in the same manner and at the same time.

APPENDIX E

RE-COATING PROPERTIES

E.1 PRINCIPLE OF METHOD

The material is converted into brushing consistency and a coat applied on a neat cement block. After allowing to dry for a specified time a second coat is applied to test the ability of the material to take the second coat.

E.2 PROCEDURE

E.2.1 Mix the material with water to produce a material of suitable consistency for application by brushing. Apply one coat of the mixed material on a clean 150-mm x 150-mm cement block of thickness 5 mm and allow to air-dry for three hours. Apply a second coat at the end of this period (see A.2.2).

E.2.2 The requirement of the specification 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 F

RESISTANCE TO ALKALI

F.1 PRINCIPLE OF METHOD

The material is converted into brushing consistency and applied on a 1:1:6 portland cement, lime and sand plaster of specified thickness. The coat of the material thus prepared is subjected to a corrosion cabinet test for a specified period after which it is tested for any change in colour.

F.2 APPARATUS

F.2.1 Corrosion cabinet

The apparatus consists essentially of a closed chest in which the relative humidity is maintained at about 100 per cent and the temperature continuously cycles over a range from 42 °C to 48 °C. There shall be copious condensation of water on test panels positioned vertically within the chest. The apparatus may be of any design, but it shall satisfy the following essential conditions:

a) *Humidification :*

Humidity shall be maintained by evaporation of water from a reservoir situated at the bottom of the cabinet. The water shall be kept free from grease or oil.

b) *Heating :*

The cabinet shall be heated through the medium of water by a heater placed immediately below the water reservoir or a heater completely immersed in water.

c) *Temperature cycles :*

The heating arrangement shall be thermostatically controlled in such a way that the temperature of the air space cycles vary continuously from 42 °C to 48 °C and back to 42 °C in a total period of not less than 45 minutes and not more than 75 minutes. The time required for heating and cooling shall be approximately equal.

d) *Air circulation :*

The air in the cabinet shall be kept in circulation by means of a fan to ensure that the temperature in any part of the air space does not differ by more than 0.5 °C at any given moment.

e) *Spacing of test panels :*

Test panels shall not be placed less than 40 mm apart, or less than 40 mm from any side of the cabinet.

f) If suspended, the panels shall be held by non-metallic supports. If placed on metal racks, the panels shall be suitably insulated at points of contact with the metal surface.

F.3 PREPARATION OF SUBSTRATUM

F.3.1 This consists of a 150-mm x 150-mm x 3-mm block of cement, lime and sand prepared as described in **F.3.2.**

F.3.2 The run lime from slaked quicklime is allowed to mellow for 10 days. The supernatant liquid is then allowed to run off and the top layer of lime putty skimmed and well mixed with a mixture of fine sand (passing 2-mm sieve) and portland cement in the proportion of 1:1:6 (1 part portland cement, 1 part lime putty and 6 parts sand). The mixture is gauged with water (15 per cent by mass of the mixture) and block is cast. This is allowed to cure first at 100 per cent relative humidity for 24 hours and then for 6 days under water. The block is air-dried and used within one month. Before application of the material, the block should be soaked in water for 24 h and brought to surface dry condition by exposure to air.

F.4 PROCEDURE

F.4.1 The material is mixed with water to produce a suitable consistency for application by brushing. The prepared cement block is coated with a uniform normal coat commensurate with satisfactory coverage and appearance of the mixed material (see **A.2.2**). Allow this to air dry in a vertical position for 24 hours. Then suspend this block vertically in a closed cabinet of the type described in **F.2.1.** Examine the block daily for a period of 7 days.

F.4.2 The requirement of the specification shall be taken as having been satisfied if the film of the material shows no change in colour.

APPENDIX G
KEEPING PROPERTIES

G.1 Store the material under cover in a dry place in the original sealed containers and under normal temperature conditions.

G.2 The material shall retain the properties as prescribed for the specified period after the date of manufacture which shall be subsequent to the date of placing the contract.

G.3 The material shall be free from any extraneous matter such as fungal growth, bacterial degradative products, **e.t.c.**

BUREAU OF CEYLON STANDARDS

The Bureau of Ceylon Standards (BCS) is the national standards organization of Sri Lanka and was established by the Hon. Minister of Industries & Fisheries, as provided for by the Bureau of Ceylon Standards Act. No. 38 of 1964.

The principal objects of the Bureau as set out in the Act are to promote standards in industry and commerce, prepare national Standards Specifications and Codes of Practice and operate a Standardization Marks Scheme and provide testing facilities, as the need arises.

The Bureau is financed by Government grants and the sale of its publications. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The detailed preparation of Standard Specifications is done by Drafting Committees composed of experts in each particular field assisted by permanent officers of the Bureau. These Committees are appointed by the Divisional Committees, which are appointed by the Council. All members of the Drafting and Divisional Committees render their services in an honorary capacity. In preparing the Standard Specifications, the Bureau endeavours to ensure adequate representation of all view points.

In the international field the Bureau represents Sri Lanka in the International Organization for Standardization (ISO) and will participate in such fields of Standardization as are of special interest to Sri Lanka.

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