SRI LANKA STANDARD 555 : 1982

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SPECIFICATION FOR VARNISH FOR INTERIOR USE

BUREAU OF CEYLON STANDARDS

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SLS 555:1982

Gr. 5

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Sri Lanka.

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

SRI LANKA STANDARD
SPECIFICATION FOR VARNISH FOR INTERIOR USE

FOREWORD

This Sri Lanka Standard was authorised for adoption and publication by the Council of the Bureau of Ceylon Standards on 1982-03-18 after the draft, finalized by the Drafting Committee on Paints had been approved by the Chemicals Divisional Committee.

This specification covers varnish, suitable for application where chemical resistance is not an important criterion.

All standard values 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 requirements and methods of sampling and test for the material commercially known as varnish, finishing, interior. The material is used for the protection and decoration of interior work generally on wooden surfaces.

2 REFERENCES

CS 102 Presentation of numerical values

CS 159 Code of practice for seasoning timber

SLS 489 Glossary of terms for paints

SLS 523 Methods of sampling paints

SLS 535 Methods of test for paints

3 TERMINOLOGY

For the purpose of this specification, the definitions given in SLS 489 shall apply.

4 REQUIREMENTS

4.1 Description

The material shall be clear, transparent and free from foreign matter, sediment and undissolved water.

4.2 Composition

The material shall be based on resins, drying oils, driers and thinners in suitable proportions to satisfy the requirement of this specification.

4.3 Recoating properties

When two successive coats of the material are applied on a glass panel as in 4.5 at an interval of 24 h between coats, there shall be no lifting of the underlying coat. The varnish system shall not exhibit sagging, pitting, flaking or cracking.

4.4 Colour

The colour when determined in a 6.3-mm all-glass cell in a standard Lovibond Tintometer shall not be darker than a combination of 41 yellow units and 10 red units.

4.5 Finish

Unless otherwise agreed to between the purchaser and the supplier, the material when applied on to a glass panel conforming to SLS 535 Part 3: Section 3.2 to give a dry film mass of 17 g/m^2 to 25.5 g/m^2 either by brushing or spraying, as specified in SLS 535 Part 3:Section 3.3 and allowed to air dry in a vertical position in the absence of direct sunlight and under ambient conditions shall dry to a hard firmly adherent smooth film free from sagging and wrinkling and orange peeling.

4.6 Other requirements

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

5 PACKING

The material shall be packed in suitable containers in the following manner:

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

6 MARKING

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

a) Name of the material;

b) The words 'for interior use';

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

d) Volume of the material in ml or l;

e) Date of manufacture; and

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

TABLE 1 - Requirements for varnish for interior use

Serial No. (1)	Characteristic (2)	Requirements interior (3)	Method of test reference (4)
1	Drying time, max.		
	a) Surface dry, h	6	Appendix A
	b) Hard dry, h	16	
2	Print free time, max. h	24	SLS 535 Part 3: Section 3.6
3	Scratch hardness after air drying for 96 h (under a load of 1 kg)	No such scratch as to show the bare metal	SLS 535 Part 5: Section 5.2
4	Bending properties after air drying for 96 h	No visible damage or detachment of film	SLS 535 Part 5: Section 5.3
5	Stripping test after air drying for 96 h	Scratches free from jagged edges	Appendix B
6	Flash point, min, ^{o}C	30	SLS 535 Part 1 Section 1.5
7	Volatile matter content, per cent by mass, max.	50.0	SLS 535 Part 2: Section 2.3
8	Viscosity in mm^2/s at 30 ^{o}C	100 to 200	SLS 535 Part 1: Section 1.3
9	Acid value, max.	15.0	Appendix C
10	Resistance to water	To pass the test	SLS 535 Part 6: Section 6.3
11	Keeping properties	Not less than one year from the date of manufacture	Appendix D

7 SAMPLING AND NUMBER OF TESTS

7.1 The method of drawing representative samples of the material shall be as specified in the relevant Clauses of SLS 523.

7.2 From each sample container prepared as in **7.2.1** (e) of SLS 523 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 another sample container.

7.3 The remaining portion of material from each sample container constitute an individual sample representing a particular container in the lot.

7.4 Tests for requirements given in **4.3** to **4.5** shall be carried out on each individual sample.

7.5 Tests for requirements given in **4.6** shall be carried out on the composite sample.

8 METHOD OF TEST

8.1 Tests shall be carried out as specified in **4.3** to **4.5** and Appendices **A** to **D** and relevant section of SLS 535.

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

9 CRITERIA FOR CONFORMITY

The material shall be taken to have conformed to this specification if the following conditions are satisfied.

9.1 Each individual sample satisfies the relevant requirements tested as in **7.4**.

9.2 The composite sample satisfies the relevant requirements tested as in **7.5**.

APPENDIX A

DETERMINATION OF DRYING TIME

Two methods have been specified for each of the determination for surface drying and hard drying times. The method specified in **A.1** shall be the reference method and shall be carried out in case of any dispute.

A.1 METHOD 1

A.1.1 Determination of surface drying time (Ballotini method)

This test shall be carried out as specified in SLS 535 Part 3: Section 3.4.

A.1.2 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 Procedure

Apply the material by brushing or spraying as prescribed in 4.5 to obtain an even and uniform coat on a 150 mm x 150 mm glass panel conforming to SLS 535 Part 3:Section 3.2 and allow to air dry under standard conditions (27 ± 2 °C and a relative humidity of 65 ± 5 per cent) in a well ventilated chamber, care being taken to protect it from direct sunlight. Examine the material after specified intervals for the following conditions.

a) Surface dry

b) Hard dry.

APPENDIX B

STRIPPING TEST

B.1 PRINCIPLE

The minimum load required to produce a scratch showing the bare metal surface of the panel coated with the material is determined.

B.2 APPARATUS

The apparatus used for determining scratch hardness as prescribed in SLS 535 Part 5:Section 5.2 shall be used.

B.3 PROCEDURE

Apply a coat of the material by either brushing or spraying as specified in SLS 535 Part 3:Section 3.3 to a 150 mm x 50 mm x 0.315 mm mild steel panel conforming to SLS 535 Part 3:Section 3.2 to give a dry film mass of 17 g/m^2 to 25.5 g/m^2. Allow the panel to air-dry in a horizontal position for 96 h under standard conditions (27 ± 2 °C and a relative humidity of 65 ± 5 per cent). Test the dried film in the apparatus under such a load that a scratch is produced showing the bare metal surface.

B.4 The scratch so produced shall be free from jagged edges.

APPENDIX C

ACID VALUE

C.1 PRINCIPLE

Known weight of the material is dissolved in a neutral solvent mixture of benzene and ethanol and titrated against standard potassium hydroxide using phenolphthalein as indicator.

C.2 DEFINITION

acid value : The number of milligrams of normal potassium hydroxide required to neutralize the free acid contained in one gram of the material.

C.3 APPARATUS

C.3.1 *Flasks,* long necked, 250-ml or 300-ml.

C.4 REAGENTS

C.4.1 *Standard potassium hydroxide solution,* 0.1 N.

C.4.2 *Solvent mixture,* consisting of equal parts of ethanol (95 per cent) and benzene. Neutralize the mixture with ethanolic potassium hydroxide solution (0.1 N) in the presence of phenolphthalein as indicator.

C.4.3 *Phenolphthalein indicator solution*

Dissolve 0.1 g of phenolphthalein in 100 ml of 60 per cent rectified spirit.

C.5 PROCEDURE

C.5.1 Add indicator solution to the required amount of solvent mixture in the ratio of 2 ml to 125 ml and neutralize with alkali to a faint but permanent pink colour. Into a conical flask weigh to the nearest milligram 5 g to 10 g of the sample. Add 125 ml of the neutralized solvent mixture to the contents of the flask and dissolve the sample completely, warming if necessary. Titrate this against standard potassium hydroxide solution to the appearance of light permanent pink colour of the same intensity as that of the neutralized solvent before the latter was added to the sample. The colour shall persist for 30 seconds.

C.5.2 Calculation

Calculate the acid value as follows:

$$\text{Acid value (as mg of KOH/g sample)} = 56.1 \times \frac{VN}{M}$$

where,

V = volume in ml of standard potassium hydroxide solution used;

N = normality of the standard potassium hydroxide solution; and

M = mass in g of the material taken for the test.

APPENDIX D

KEEPING PROPERTIES

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

D.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.

D.3 The material shall show no skinning, gelling, hard caking or curdling and shall be free from any extraneous matter.

BUREAU OF CEYLON STANDARDS

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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 Mark 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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