SRI LANKA STANDARD 341 : 1983

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SPECIFICATION FOR

BLACK LETTERPRESS INK FOR GENERAL PURPOSES

(FIRST REVISION)

BUREAU OF CEYLON STANDARDS

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SLS 341 : 1983

Gr. 5

BUREAU OF CEYLON STANDARDS
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This standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD

SPECIFICATION FOR BLACK LETTERPRESS INK, FOR GENERAL PURPOSES (FIRST REVISION)

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Bureau of Ceylon Standards on 1983-11-29, after the draft, finalized by the Drafting Committee on Printing Ink, had been approved by the Chemicals Divisional Committee.

This specification was first published in 1975. In this revision, a simple method of test has been specified for the assessment of the resistance of inks to fading. The quality and substance of printing paper to be used for the performance test have been included. The sampling scheme has also been revised.

Black letterpress ink covered in this specification is also known as *Jobbing Black* for use in letterpress printing machines.

All standard values given in this specification are 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, valuable assistance derived from the relevant publications of the British Standards Institution, Indian Standards Institution and the United States Federal Supply Service, General Service Administration is gratefully acknowledged.

1 SCOPE

1.1 This specification prescribes the requirements and methods of sampling and tests for black letterpress ink, for general purposes.

2 REFERENCES

CS 3 Paper sizes

CS 102 Presentation of numerical values

SLS 489 Glossary of terms for paints

SLS 339 Substances of paper and paper board

3 TERMINOLOGY

For the purpose of this specification, the definitions given in **SLS 489**, and the following definitions shall apply :

3.1 impression : The product resulting from one cycle of the printing machine.

3.2 sharpness : Similarity of the geometry of the image to the type face.

3.3 show through : The degree to which a printed ink film is visible through paper, due to low opacity of the paper.

3.4 strike through : The visible effect seen on the reverse side of the sheet, due to penetration of ink or vehicle into or through the paper.

4 REQUIREMENTS

4.1 General requirements

The ink shall be uniform, homogeneous, non abrasive and free from skins, lumps and other separated materials which will not disperse in the vehicle.

4.2 Performance

4.2.1 The ink shall produce acceptable reproductions on both sides of white printing paper of nominal substance 63 g/m^2, when run on a letterpress printing machine. The ink shall produce presentable impressions which are clean, clear, without strike-through or show-through sufficient to interfere with legibility of the finished work on both sides of the paper.

4.2.2 The ink shall dry satisfactorily when printed on the paper specified in **4.2.1**. When printed copies are stacked there shall be no objectionable transfer of ink from one sheet to the next.

4.2.3 The ink shall adhere well to the paper so that it will not smudge or chalk.

4.2.4 The ink shall work satisfactorily in the duct and shall not show signs of flying during operation.

4.3 Colour

The colour of the impressions produced on the paper (see 4.2.1) shall be black.

4.4 Separation

Ink shall show no signs of separation of the pigment and vehicle when left in the duct during the idle period of the machine. The idle periods shall not exceed 8 hours for the purpose of this requirement.

4.5 Stability

The ink shall show no film formation, hardening or caking when tested as prescribed in Appendix B.

4.6 Resistance to fading

The impression made by the ink, shall remain unchanged and shall be readable when tested by the method prescribed in Appendix C.

4.7 Resistance to smudging and moisture

The ink shall be resistant to smudging, and moisture when tested as prescribed in Appendix D.

4.8 Shelf life

The ink in unopened containers shall be in a workable condition after storage under normal conditions for a period of 6 months from the date of manufacture.

4.9 Consistency

The consistency of the ink shall be such that it shall be capable of easy distribution in the ink duct of the machine. After a few operations the ink shall neither run/drip off the cylinders nor shall it be stiff thus making it difficult to be re-distributed on the cylinders.

5 PACKAGING

5.1 The material shall be packed in suitable containers as agreed to between the purchaser and the supplier.

5.2 Not more than 5 per cent ullage shall be allowed in the packed containers.

5.3 The container shall be firmly closed so that it is air-tight.

6 MARKING

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

a) The name and description of the material ;

b) The name and address of the manufacturer ;

c) Registered trade mark (if any) ;

d) Net mass, in grams or kilograms of the material ; and

e) Date of manufacture or batch number.

6.2 The containers may also be marked with the Certification Mark of the Bureau of Ceylon Standards illustrated below on permission being granted for such marking by the Bureau of Ceylon Standards.

NOTE - The use of the Bureau of Ceylon Standards Certification Mark (SLS mark) is governed by the provisions of the Bureau of Ceylon Standards Act and the regulations framed thereunder. The SLS mark on products covered by a Sri Lanka Standard is an 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 the Bureau and operated by the producer. SLS marked products are also continuously checked by the Bureau for conformity to that standard as a further safeguard. Details of conditions under which a permit for the use of the Certification Mark may be granted to manufacturers or processors may be obtained from the Bureau of Ceylon Standards.

7 SAMPLING

The method of drawing representative samples of the material shall be as specified in Appendix A.

8 METHODS OF TEST

Tests shall be carried out as prescribed in Appendices B, C and D.

9 CONFORMITY TO STANDARD

The lot shall be declared as conforming to the requirements of this specification, if all containers examined as in A.4.1 and tested as in A.4.2 satisfy the relevant requirements.

APPENDIX A

SAMPLING

A.1 LOT

All containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot.

A.2 SCALE OF SAMPLING

A.2.1 Samples of black letterpress ink shall be tested from each lot for ascertaining conformity to the requirements of this specification.

A.2.2 The number of containers to be selected from the lot shall be in accordance with the table.

TABLE 1 - Scale of sampling

Number of containers in the lot (1)	Number of containers to be selected (2)
Up to 50	2
51 to 100	3
101 to 500	4
501 and above	5

A.3 REFERENCE SAMPLING

If a reference sample is required the number of containers to be selected from each lot shall be three times the value given in Table 1. One third of this sample shall be retained by the purchaser, one third by the supplier and one third shall be kept at a place agreed to between the purchaser and the supplier to be used in case of dispute between the two.

A.4 NUMBER OF TESTS

A.4.1 Each container selected as in **A.2.2** shall be examined for packing and marking.

A.4.2 After examining for packing and marking, each container shall be individually tested for requirements specified in **4.2, 4.3, 4.4, 4.5, 4.6, 4.7** and **4.9.**

NOTE - Only the required quantity of ink shall be drawn from each container as and when the tests are carried out.

APPENDIX B

TEST FOR STABILITY

Take about 10 g of the ink sample in a clean shallow vessel approximately 60 mm in diameter and 8 mm in depth and place in an oven at 60 ± 2 °C for 2 hours. At the end of this period there shall be no skinning, hardening or caking.

APPENDIX C

TEST FOR RESISTANCE TO FADING

Prepare four specimens of size 297 mm x 210 mm (see **CS 3**) printed on the side of the specified paper (see **4.2.1**) with equally good impressions,. Expose two of these sheets with the printed side up to an ultraviolet lamp at a distance of 0.25 m from the source for 48 hours. The lamp should emit radiations at 366 nm so that intensity at 0.9 m from the lamp is approximately 4.5 W/m^2. Keep the other two sheets of printed paper for reference, away from the ultraviolet lamp. There shall be no appreciable change in intensity of the impressions of the paper exposed to ultraviolet light when compared with the two sheets reserved for refernece.

APPENDIX D

RESISTANCE TO SMUDGING AND MOISTURE

D.1 RESISTANCE TO SMUDGING

Prepare a specimen of size 297 mm x 210 mm (see **CS 3**) printed on one side of the specified paper (see **4.2.1**) and allow it to air dry for 4 minutes. Place on a smooth, flat surface with the printed side up and cover with a clean sheet of blank printing paper (see **4.2.1**). Place a 100-g circular mass of 33 mm diameter on one edge of the paper and draw the clean sheet of paper and the mass slowly across the printed sheet of paper. The ink shall be considered to have passed the test if there is no smudging.

D.2 RESISTANCE TO MOISTURE

Prepare a specimen of size 297 mm x 210 mm (see CS 3) printed on one side of the specified paper (see 4.2.1) and allow it to air dry for 4 minutes, dip in water and perform the smudge test as specified in D.1.

SLS CERTIFICATION MARK

The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI *which includes surveillance inspection of the factory, testing of both factory and market samples.*

Further particulars of the terms and conditions of the permit may be obtained from the Sri *Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.*

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SRI LANKA STANDARDS INSTITUTION

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The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.

Printed at the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.