SRI LANKA STANDARD 1164 : 1998

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SPECIFICATION FOR
BLACK CARTRIDGE PAPER

SRI LANKA STANDARDS INSTITUTION

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SLS 1164 : 1998

Gr. 3

SRI LANKA STANDARDS INSTITUTION
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SRI LANKA.

Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

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

SRI LANKA STANDARD
SPECIFICATION FOR BLACK CARTRIDGE PAPER

FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Paper and Board and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 1998-03-19.

Guidelines for the determination of a compliance of a lot with the requirements of this standard based on statistical sampling and inspection are given in Appendix **A**.

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 an analysis shall be rounded off in accordance with **CS 102.** The number of significant places retained in the rounded off value shall be the same as that of the specified value in this specification.

1 SCOPE

This specification prescribes the requirements and methods of sampling and test for black cartridge paper.

2 REFERENCES

ISO 2470	Paper and Board - Measurement of diffuse blue reflectance factor (ISO brightness)
ISO 2494	Paper and Board - Recommended procedure for the determination of roughness Constant -pressure air-flow method
CS 3	Paper sizes
CS 102	Presentation of numerical values
SLS 235	Untrimmed stock sizes of paper and paper board
SLS 338	Determination of grammage of paper and paper board
SLS 428	Random sampling methods
SLS 474	Testing of paper and board for tensile strength
SLS 681	Testing of paper and board for thickness of single sheets

3 DEFINITIONS

For the purpose of this specification the following definitions shall apply:

3.1 cartridge paper : A well-sized strong paper free from fillers and having a rough surface free from fluffing.

3.2 cross direction : The direction in the plane of paper at right angles to the machine direction **(see 3.3)**.

3.3 machine direction : The direction in a paper corresponding to the direction of travel of the web on the paper machine.

4 REQUIREMENTS

4.1 General requirements

4.1.1 The black cartridge paper shall be of uniform formation with even thickness and a rough finish. It shall be free from patches, holes and creases.

4.1.2 The black cartridge papers shall be clean and without any defect which may effect their serviceability.

4.2 Colour

There shall not be a perceptible variation in the black colour of the sheets in a supply lot. If a reference sample is supplied, the colour of the paper shall closely match the supplied reference sample, visually.

4.3 Size

The black cartridge paper shall be cut with clean edges to the sizes specified in **4.3.1** and **4.3.2** .

4.3.1 The black cartridge paper in the form of sheets shall be of A0, A1, A2, A3 and A4 sizes as specified in **CS 3** and RA and SRA untrimmed stock sizes as specified in **SLS 235**.

4.3.2 The width of reels of black cartridge paper shall be RA and SRA untrimmed sizes as specified in **SLS 235**.

4.4 Physical requirements

The black cartridge paper shall comply with the physical requirements given in Table **1**, when tested in accordance with the methods specified in Column **4** of the table.

TABLE 1 - Physical requirements for black cartridge paper

Sl. No. (1)	Characteristic (2)	Requirement (3)	Method of test (4)
i)	Grammage (substance), g/m^2 , min.*	95	**SLS 338**
ii)	Tensile index, N.m/g		**SLS 474** and **6.1**
	a) Machine direction, min.	37.0	
	b) Cross direction, min.	20.0	
iii)	Reflectance, per cent, max.	13.5	**ISO 2470**
iv)	Roughness Bendtsen, ml/min, min.	250	**ISO 2494** and **6.2**

* Grammage of 95 g/m^2 corresponds to nominal grammage of 100 g/m^2 .

5 PACKAGING AND MARKING

5.1 Packaging

The black cartridge paper shall be packed as agreed to between the manufacturer and the purchaser in reels or in reams of 500 sheets or half reams of 250 sheets in the case of A0 size or platized. Tolerance of $\pm$ 1% sheets shall be permitted.

5.2 Marking

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

a) Name of the product as “Black cartridge paper”;
b) Grammage (substance) of the paper, in grams per square metre ;
c) Size of paper, in the case of reams;
d) Width, external diameter of reel and internal diameter of core, in millimetres in the case of reels;
e) Name and address of the manufacturer and/supplier and country of origin;
f) Registered trade mark, if any; and
g) Batch identification mark.

NOTE

Attention is drawn to certification marking facilities offered by the Sri Lanka Standards Institution. See the inside back cover of this standard.

6 METHODS OF TEST

Tests shall be carried out in accordance with **6.1** and **6.2** of this specification and **ISO 2470**, **ISO 2494**, **SLS 338** and **SLS 474**.

6.1 Tensile index

Tensile index shall be calculated using the following formula, from the tensile strength values determined as given in **SLS 474**.

$$Y = \frac{S}{g} \times 10^3$$

where,

Y is the tensile index, in machine direction or cross direction, in newton metres per gram;
S is the tensile strength, in machine direction or cross direction, in kilonewtons per metre; and
g is the grammage (substance), in grams per square metre.

6.2 Roughness

Condition the specimens in a conditioning atmosphere having a temperature of $27 \pm 1\ ^0$C and a relative humidity of 65 ± 2 per cent. Determine the roughness as given in **ISO 2494**.

APPENDIX A
COMPLIANCE OF A LOT

The sampling scheme given in this Appendix should be applied where compliance of a lot to the requirements of this standard is to be assessed based on statistical sampling and inspection.

Where compliance with this standard is to be assured based on manufacturing control system coupled with type testing and check tests or any other procedure, appropriate schemes of sampling and inspection should be adopted.

A.1 LOT

In any consignment all black cartridge paper of the same size belonging to one batch of manufacture or supply shall constitute a lot.

A.2 SCALE OF SAMPLING

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

A.2.2 The number of black cartridge papers to be selected from a lot shall be in accordance with the following table.

TABLE 2 - Scale of sampling

No. of black cartridge papers in the lot (1)	No. of black cartridge papers to be selected (2)
up to 100	5
101 to 500	7
501 to 1000	9
1001 and above	13

A.2.3 If the cartridge papers are packed in reels, reams or plates, a 5 per cent of the same shall be slelected subject to a minimum of two reels, reams or plates and as far as possible an equal number of papers shall be drawn from each reel, ream or plate so as to form a sample of size as given in the table.

A.2.4 The cartridge paper, reels, reams and/or plates shall be selected at random. In order to ensure randomness of selection, tables of random numbers as given in **SLS 428** shall be used.

A.3 NUMBER OF TESTS

A.3.1 Each reel, ream or plate selected as in **A.2.3** shall be inspected for packaging and marking requirements.

A.3.2 Each paper selected as in **A.2.2** shall be inspected for **4.1**, **4.2** and **4.3** .

A.3.3 Three samples inspected as in **A.3.2** shall be tested for physical requirements.

A.4 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of this specification if the following conditions are satisfied :

A.4.1 Each reel, ream or plate inspected as in **A.3.1** satisfies the relevant requirements.

A.4.2 Each paper inspected/tested as in **A.3.2** and **A.3.3** satisfies the relevant requirements.

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.

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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.*

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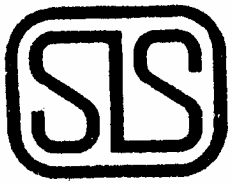

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