SRI LANKA STANDARD 834 : 1988

UDC 676.234

SPECIFICATION FOR

TYPEWRITING PAPER

SRI LANKA STANDARDS INSTITUTION

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SPECIFICATION FOR TYPEWRITING PAPER

SLS 834:1988
(Attached AMD 258)

Gr. 5

SRI LANKA STANDARDS INSTITUTION
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Colombo 3,
Sri Lanka.

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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 TYPEWRITING PAPER

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on 1988-11-30, after the draft, finalized by the Drafting Committee on Paper and Board, had been approved by the Chemicals Divisional Committee.

Clause 5.1 of this specification calls for agreement between the purchaser and the supplier.

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 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.

In the preparation of this specification the assistance obtained from the publications of the International Organization for Standardization and the Bureau of Indian Standards is gratefully acknowledged.

1 SCOPE

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

2 REFERENCES

ISO 2470 Paper and board-Measurement of blue reflectance factor (ISO brightness).

ISO 2471 Paper and board-Determination of opacity (paper backing)-Diffuse reflectance method.

ISO 6588 Paper, board and pulps - Determination of pH of aqueous extracts.

CS 3 Paper sizes.

SLS 82 Carbon paper (Typewriter and pencil).

CS 102 Presentation of numerical values.

SLS 149 Typewriter ribbons.

SLS 338 Determination of substances of paper and paper board.

SLS 428 Random sampling methods.

SLS 473 Testing of paper and board for water absorption - Cobb method.

SLS 474 Testing of paper and board for tensile strength.

SLS 715 Rubber erasers.

SLS 808 Sampling of paper and board.

3 DEFINITIONS

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

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

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

3.3 typewriting paper : Paper intended principally to receive an initial type-script, adequately sized, of high mechanical strength and having good resistance to the impact of the type of a typewriter and to erasure.

4 REQUIREMENTS

4.1 General requirements

The typewriting paper shall be manufactured from chemical pulp. It shall be of uniform formation and of even finish. It shall also be free from patches, holes and creases.

4.2 Colour

The typewriting paper shall be white or coloured. There shall not be any perceptible variation in the 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 typewriting paper shall be of A 3, A 4 or A 5 sizes as specified in CS 3. A tolerance of $\pm$ 2 mm shall be permitted on each dimension.

4.4 Resistance to impact of type

The typewriting paper shall not show any perforations over the typed area, when determined by the method given in Appendix A.

4.5 Resistance to erasure

The surface of the typewriting paper shall not show more than a slight wear off, when determined by the method given in Appendix B.

4.6 Other requirements

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

TABLE 1 - Requirements for typewriting paper

Sl. No. (1)	Characteristic (2)	Requirement (3)	Method of test (Reference to relevant ISO, SLS and clause (4)
i)	Grammage (substance), g/m^2	50 $\pm$ 3	SLS 338
ii)	Tensile index, N.m/g		SLS 474
	a) Machine direction, min.	34.0	and 7.2
	b) Cross direction, min.	20.0	
iii)	Water absorption ($Cobb_{60}$) g/m^2, max.	17	SLS 473
iv)	pH value (hot extract), min.	4.8	ISO 6588
v)	Brightness, per cent, min*.	75	ISO 2470
vi)	Opacity, per cent, min*.	80	ISO 2471

* In case of white typewriting paper.

5 PACKAGING AND MARKING

5.1 Packaging

A ream of 500 sheets shall be packed as agreed to between the purchaser and the supplier.

5.2 Marking

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

a) Name of product;

b) Size of the paper;

c) Colour of the paper;

d) Grammage (substance) of the paper, in grams per square metre;

e) Name and address of the manufacturer and/or supplier and country of origin;

f) Registered trade mark, if any;

g) Mass of ream excluding the wrapper, in kilograms; and

h) Batch or code number.

6 SAMPLING

6.1 A representative sample of typewriting paper shall be selected in accordance with the relevant clauses of **SLS 808.**

6.2 The number of sheets to be taken from the reams selected as in **6.1** of **SLS 808 : 1988** shall be in accordance with Table 2.

TABLE 2 - Scheme for selection of sheets

No. of reams in the lot	No. of sheets to be selected
100 or less	60
101 to 500	120
501 and above	180

6.3 Number of tests

6.3.1 Each ream selected as in **6.1** of **SLS 808 : 1988** shall be inspected for packaging and marking requirements.

6.3.2 Sheets selected as in **6.2** shall be divided into three equal parts.

6.3.2.1 Sheets of the first part shall be tested in sets of five for resistance to impact of type and resistance to erasure.

6.3.2.2 Half the sheets of the second part shall be individually tested for tensile index and the other half shall be individually tested for the following requirements.

a) Colour;

b) Size; and

c) Grammage (substance).

6.3.2.3 A sufficient number of sheets shall be selected from the sheets tested for colour, size and grammage and shall be tested for pH value.

6.3.2.4 Half the sheets of the third part shall be individually tested for water absorption and the other half shall be individually tested for brightness and opacity.

7 METHODS OF TEST

7.1 Tests shall be carried out according to **ISO 2470, ISO 2471, ISO 6588, SLS 338, SLS 473, SLS 474** and **7.2**, Appendix A and Appendix B of this specification.

7.2 Tensile index shall be calculated as follows, from the tensile strength values determined as given in **SLS 474.**

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

where,

Y = tensile index in machine direction or cross direction, in newton metres per gram;

S = tensile strength in machine direction or cross direction, in kilonewtons per metre; and

g = grammage (substance), in grams per square metre.

8 CRITERIA FOR CONFORMITY

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

8.1 Each ream inspected as in **6.3.1** satisfies the packaging and marking requirements.

8.2 Each typewriting paper tested as in **6.3.2.1** satisfies the relevant requirements.

8.3 Each typewriting paper tested as in **6.3.2.2** satisfies the colour and size.

8.4 The values of the expressions $\bar{x} - 1\text{-}5s$ (see Notes) and $\bar{x} + 1.5s$ clculated using the test results on grammage (substance) lie between the specified limits.

NOTES

1. Mean ($\bar{x}$) = The sum of values of the observation divided by the number of observations.

2. Standard deviation (s) = The positive square root of the quotient obtained by dividing the sum of squares of the deviations of the observations from their mean by one less than the number of observations in the sample.

8.5 The typewriting paper tested as in **6.3.2.3** satisfy the requirement for pH value.

8.6 The values of the expression $\bar{x}-1.5s$ calculated using the test results on tensile index, brightness and opacity are greater than or equal to the corresponding specification limits.

8.7 The value of the expression $\bar{x} + 1.5$ s calculated using the test results on water absorption is less than or equal to the specified limit.

APPENDIX A
DETERMINATION OF RESISTANCE TO IMPACT OF TYPE

A.1 APPARATUS

A.1.1 Electric typewriter, satisfying the following requirements:

a) A clean pica type;

b) An impression indicator set at 5;

c) Multiple copy control set at 5 ; and

d) A new typewriter ribbon conforming to SLS 149.

A.1.2 Typewriter carbon paper, Type 3, conforming to SLS 82.

A.2 PROCEDURE

Assemble five sheets of typewriting paper with sheets of carbon paper (A.1.2) in the usual way and insert into the typewriter (A.1.1). Type 15 lines of the entire key-board in an unrelated order. Inspect the first sheet of paper for freedom from perforations over the typed area. Reserve the first sheet of paper for the determination of resistance to erasure.

APPENDIX B
DETERMINATION OF RESISTANCE TO ERASURE

B.1 APPARATUS

B.1.1 Electric typewriter, as described in A.1.1.

B.1.2 Typewriter carbon paper, as described in A.1.2.

B.1.3 Rubber eraser, Type 3, conforming to SLS 715.

B.2 PROCEDURE

Erase manually set of twenty typed letters from two different places on the sheet of paper reserved from the test for resistance to impact of type (see A.3) with the rubber eraser (B.1.3) until all the letters have been erased completely. Inspect the erased area for wear off.

AMD NO. 258

AMENDMENT NO. 1 APPROVED ON 2000-02-10
TO SLS 834: 1988

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Clause 5.1 Packaging

Include the following sentence at the end of the paragraph.

"Tolerance of ±1% in the number of sheets shall be permitted"

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SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

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.

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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.*

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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