

SRI LANKA STANDARD 1163 : 1998 ✓

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**SPECIFICATION FOR
PHOTOCOPY PAPER**

SRI LANKA STANDARDS INSTITUTION

SPECIFICATION FOR PHOTOCOPY PAPER

SLS 1163 : 1998

Gr. 4

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SRI LANKA

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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 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.

In the preparation of this specification the assistance obtained from the following publication is gratefully acknowledged;

MS 1288 : 1992 Specification for photocopy paper

1 SCOPE

This specification prescribes the requirements and methods of sampling and test for photocopy for use in dry toner, plain paper photocopiers.

2 REFERENCES

ISO 287	Paper and board-Determination of moisture content - oven-drying method.
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 2494	Paper and board-Recommended procedure for the determination of roughness-constant-pressure air-flow method.
ISO 6588	Paper, board and pulps - Determination of pH of aqueous extracts.
CS 3	Paper sizes.
CS 102	Presentation of numerical values.
SLS 338	Determination of grammage of paper and paper board.
SLS 428	Random sampling methods.
SLS 475	Testing of paper and board for stiffness static bending method.

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SLS 681 Testing of paper and board for thickness of single sheets.
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.

4. REQUIREMENTS

4.1 General requirements

The photocopy 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.

4.1.1 The paper shall lie flat or shall have only a slight curl. The paper shall be reasonably free from blemishes, dust, lint and other particles so that its end use is not adversely affected. The formation of the paper shall be close and even. The paper shall be trimmed with clean, smooth edges.

4.2 Colour

The colour shall be as agreed to between supplier and purchaser prior to manufacture. 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

4.3.1 Sheets

4.3.1.1 The paper shall be supplied in sheet sizes of A and B series as specified in CS 3.

4.3.1.2 The papers of other sizes may also be supplied as agreed to between the purchaser and the supplier.

4.3.1.3 Tolerance of ± 1.0 mm for length and width less than and including 500 mm and ± 3.0 for length and width greater than 500 mm shall be permitted. Successive sheets within any

package shall not differ more than 1.0 mm in length or width. Sheets shall be square on all four sides and the opposite sides and edges shall be parallel within 1.0 mm in each 500 mm.

4.3.2 Reels

The reel width shall not be less than specified. It should also not be more than 2 mm above the specification. The tolerance for reel diameter shall be ± 30 mm.

4.4 Grammage (Substance)

The paper shall be supplied in the grammages given in Table 1, within a tolerance of ± 5 per cent.

4.5 Thickness (Caliper)

The paper shall conform to the average thickness values given in Table 1 for the different grammages with a tolerance of ± 5 μm . The difference in average thickness between sheets shall not exceed 5 μm and individual sheets shall be uniform in thickness within 5 μm .

4.6 Grain direction

When determined in accordance with the method prescribed in Appendix B, the grain direction shall be along the paper or as agreed to between supplier and purchaser.

4.7 Moisture content

The paper shall have a moisture content between 4 per cent to 5 per cent .

4.8 Other requirements

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

TABLE 1 - Requirements for photocopy paper

SI No. (1)	Characteristic (2)	Requirement (3)			Method of test (4)
i)	Grammage (substance),g/m ²	70	75	80	SLS 338
ii)	Average thickness , μm	88	92	100	SLS 681
iii)	Moisture content ,per cent by mass	4 to 5			ISO 287
iv)	Roughness Bendtsen each side, ml/min,max.	350			ISO 2494
v)	pH value, min.	5.5			ISO 6588
vi)	Brightness each side, per cent, min.	80			ISO 2470
vii)	Opacity , per cent , min.	80			ISO 2471
viii)	Stiffness, machine direction (MD), Taber , min.	1.25	1.25	2.0	SLS 475

5 PACKAGING AND MARKING

5.1 Packaging

5.1.1 Unless otherwise specified, each package shall have 500 sheets. Unit packages shall be wrapped in accordance with normal commercial practice.

5.1.2 Unless otherwise specified, the wrapping material for each ream shall be moisture proof. The wrapping shall not contaminate the paper or cause the edges of the paper to stick together.

5.1.3 The wrapping material for reels shall be moisture proof and shall not contaminate the paper in any way.

5.1.4 Unless otherwise specified, packing for shipments shall be in moisture proof enclosures and in accordance with normal commercial practice.

5.2 Marking

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

- a) Name of product, as "Photocopy paper" ;
- b) Size of the paper;
- c) Grammage (substance) of the paper, in grams per square metre;
- d) Name and address of the manufacturer and /or supplier and country of origin;
- e) Registered trade mark, if any;
- f) Batch identification mark.

6. METHODS OF TEST

6.1 Tests shall be carried out in accordance with **ISO 287, ISO 2470, ISO 2471, ISO 2494, ISO 6588, SLS 338, SLS 475, and SLS 681.**

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 of any other procedure, appropriate schemes of sampling and inspection should be adopted.

A.1 LOT

In any consignment all packages of photocopy 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 the conformity of the material to the requirements of this specification.

A.2.2 When drawing samples guidance shall be taken in accordance with **SLS 808:1988.**

A.2.3 The number of packages shall be selected in accordance with **Clause 6.1 of SLS 808:1988.**

A.2.4 The number of sheets shall be selected according to **Table 2.**

TABLE 2 - Scale of sampling

No. of packages selected as in A.2.3 (1)	No. of sheets to be selected (2)	Acceptance number (3)	Size of sub sample (4)
Less than 5	13	1	3
5	14	1	3
8	15	1	4
13	16	1	4
20	25	2	5

A.2.5 Packages and sheets shall be drawn at random. In order to ensure randomness of selection random number tables as given in SLS 428 shall be used.

A.3 NUMBER OF TESTS

A.3.1 Each package selected as in A.2.3 shall be inspected for marking and packaging requirements.

A.3.2 Each sheet selected as in A.2.4 shall be inspected for requirements given in 4.1 and 4.2.

A.3.3 Each sheet selected as in A.2 shall be tested for size (sheets and reels) (4.3) and thickness (4.5).

A.3.4 A sub sample of size given as in Column 4 of the table shall be tested for grammage(4.4), grain direction (4.6) , moisture content (4.7) , roughness, pH value, brightness , opacity and stiffness .

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 package inspected as in A.3.1 and A.3.2 satisfies packaging (5.1) and marking (5.2) requirements.

A.4.2 Number of sheets not conforming to the requirements when tested as in **A.3.3** is less than or equal to the corresponding acceptance number given as in Column 3 of the Table 2.

A.4.3 Each sheet in the sub sample when tested as in **A.3.4** satisfies the relevant requirements.

APPENDIX B

DETERMINATION OF MACHINE DIRECTION

B.1 TEST SPECIMENS

Cut two test specimen strips of 15 mmX250 mm. Cut them at right angles to each other and parallel to the edges of the test unit sheet.

B.2 PROCEDURE

Place two specimen strips together, one on top of the other, making sure they are aligned at one end. Grasp the two between the thumb and the forefinger and hold them so that they are free to bend on their own weight. Repeat, placing the bottom specimen on top. Note which specimen bends more when it is placed on the bottom.

B.3 INTEPRETATION OF RESULTS

Specimen with its length parallel to the cross direction, coil, bend more because of the lesser cross - direction stiffness and will, when on the bottom, fall away from the specimen cut with its length parallel to the machine direction.

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.



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.