

SRI LANKA STANDARD 480:1980

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**SPECIFICATION FOR
PRINTED COTTON DRESS FABRIC**

BUREAU OF CEYLON STANDARDS

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SLS 480:1980

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BUREAU OF CEYLON STANDARDS
53, Dharmapala Mawatha,
Colombo 3,
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This Standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
SPECIFICATION FOR PRINTED COTTON DRESS FABRIC

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Bureau of Ceylon Standards on 1980-07-28 after the draft finalized by the Drafting Committee on Printed Fabrics had been approved by the Textiles Divisional Committee.

All standard values given in this standard specification are in SI units.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or observation shall be rounded off in accordance with CS 102. The number of significant figures to be retained in the rounded off value shall be the same as that of the specified value in this standard.

In the preparation of this standard assistance obtained from the publications of the Indian Standards Institution is acknowledged.

1 SCOPE

1.1 This standard prescribes constructional details and other particulars of printed cotton dress fabric.

1.2 This standard does not specify the type of finishing treatment, the general appearance lustre, feel and the degree of whiteness in bleached cloth, nor does it specify the colours and/or their combinations to obtain different shades in dyed, printed, striped or checked cloth.

2 REFERENCES

This standard makes reference to the following Sri Lanka Standards.

- CS 41 Method for the determination of the number of threads per inch in woven fabrics
- CS 42 Method for the determination of the weight per unit length and per unit area of woven or knitted fabrics
- CS 43 Method for the determination of breaking load and extension of strips of woven textile fabrics
- CS 44 Method for the determination of the count of yarn removed from fabric free from added matter
- CS 45 Method for the determination of length of woven or knitted fabrics when relaxed at zero tension
- CS 46 Method for the determination of width of woven or knitted fabrics when relaxed at zero tension
- CS 47 Method for shrinkage of fabrics : cold water immersion test
- CS 55 Method for the determination of colour fastness of textile materials to washing at 95 °C for 30 minutes (Test 4)

- CS 62 Method for the determination of colour fastness of textile materials to day light
- CS 86 Method for the determination of pH value of aqueous extracts of textile materials
- CS 87 Method for the determination of scouring loss in grey and finished cotton textile materials
- CS 88 Method for the determination of colour fastness of textile materials to bleaching with hypochlorite
- CS 102 Presentation of numerical values
- CS 137 Grey cotton yarns
- SLS 428 Random sampling method

3 REQUIREMENTS FOR BASE FABRIC

3.1 Yarn

The yarn used in the manufacture of cloth shall conform to CS 137. Constructional particulars of cloth shall be within the tolerances given in Table 1.

TABLE 1 - Constructional details

Type	Count of yarn in tex		Ends per 10 mm	Picks per 10 mm
	Warp	Weft		
	as declared		as declared	as declared
Tolerance	± 3%		-1 to +2	-2 to +3
Method of test	CS 44		CS 41	CS 41

3.2 Breaking load

The breaking load of cloth warpwise or weftwise shall be not less than 20 kPa when tested by the method prescribed in CS 43.

3.3 Cloth

3.3.1 Structure

The method of fabric construction shall be as agreed to between the buyer and and the seller.

3.3.2 Selvedges

Selvedges shall be sufficiently firm to withstand the finishing processes.

3.3.3 Scouring loss

The scouring loss of cloth shall not exceed 3.3 per cent* and shall be determined by the method prescribed in CS 87.

3.3.4 Optical brightening agents

The white (bleached) cloth shall have a full bleached white finish free from blueing and optical brightening agents. Detection of optical brightening agents shall be carried out as described in Appendix A.

* This includes an allowance of 3 per cent for the loss in mass of the fibres as a result of the scouring process and will give an indication of the quantity of dressing and filling material and substances liable to cause subsequent tendering or which may adversely affect the fastness of the dyes.

3.3.5 *Starch*

The cloth shall be free from starch. Detection of starch shall be carried out as described in Appendix B.

3.3.6 *Acid*

The cloth shall be free from traces of acid. Determination of acid shall be carried out as described in Appendix C.

3.3.7 *Shrinkage*

Base fabric shrinkage or elongation warpwise or weftwise shall not exceed 0.5 per cent and shall be determined by the method prescribed in CS 47.

3.3.8 *Fabric defects*

The base cloth, when visually examined shall not contain more than 5 major defects or 10 minor defects or a total of 10 minor and major defects. Where 10 defects consist of a combination of minor and major defects, the number of major defects shall be equal to or less than 3.

TABLE 2 - Fabric defects on base fabric

Minor	Major
1 Thick places extending over 40 mm where the thickness is greater than or equal to 3 times the thickness of yarn.	1 Width variation over 20 mm.
2 Missing pick greater than 20 mm or less than 1/4 width of the cloth.	2 Missing ends greater than 300 mm.
3 Missing ends less than 300 mm.	3 Missing picks greater than 1/4 width of the cloth.
	4 Damaged selvedge greater than 100 mm.
	5 Shearing cut marks.
	6 Floats.
	7 Gouts (foreign matter embedded in the cloth) - width 2 mm, length 40 mm.
	3 Skewness (see CS 89) a) fabric less than 1 m width, variation of 10 mm; b) fabric greater than 1 m width, variation of 20 mm.
) Bow (see CS 89) a) fabric less than 1 m width, variation of 10 mm; b) fabric greater than 1 m width, variation of 20 mm.
	10 Nests
	11 Holes
	12 Noticeable oil or other stains

4 REQUIREMENTS FOR PRINTED FABRIC

4.1 Construction

Fabric shall comply with the requirements of Table 1. The permissible tolerances for various requirements and the methods of test have also been prescribed in the table.

4.2 Scouring loss

The scouring loss of cloth shall not exceed 5 per cent and shall be determined by the method prescribed in CS 87.

4.3 pH value

The pH value of the aqueous extract of the cloth shall be not less than 6 nor more than 8.5 and shall be determined by the cold method prescribed in CS 86.

4.4 Shrinkage or elongation of cloth

This shall not be more than 0.5 per cent warpwise and 1.0 per cent weftwise and shall be determined by the method prescribed in CS 47.

4.5 Colour fastness

The colour of printed fabric shall be fast to daylight washing, perspiration and rubbing. The colour fastness rating shall be in accordance with the requirements specified in Table 3, when tested by the relevant method.

TABLE 3 - Colour fastness

Agent	Method of Test	Numerical Rating
Daylight	CS 62	4 or better
Washing	CS 55	4 or better
Perspiration	CS 67	3 or better
Rubbing		
i) Dry	CS 63	4 or better
ii) Wet		3 or better

4.6 The printed fabric when visually examined shall not contain more than 5 major printing defects per 100 m as listed in Table 4.

Visual examination shall be done by a person observing the cloth from his normal visual distance by looking at (as distinct from looking through) the cloth.

TABLE 4 - Fabric defects on printed fabric

- 1 Printed pleats and un-printed places (including pin holes and screen blocks) - over 15 mm from selvedge.
- 2 Colour variation between 2 identical parts of the design noticeable to the human eye.
- 3 Squeegee marks - noticeable to the human eye.
- 4 Repeat shifts - noticeable to human eye.
- 5 Smudges.

4.7 Printing accuracy

Printing accuracy (sharpness, over lapping of prints) shall be as agreed to between the buyer and the seller.

4.8 Odour

Fabric shall be free from objectionable odours.

4.9 Dimensions

4.9.1 *Length*

Length of each piece of material shall be as may have been specified in an agreement between the buyer and the seller. The length of material shall be determined by the method prescribed in CS 45.

4.9.2 *Width*

Width of material shall be as may have been specified in an agreement between the buyer and the seller. A tolerance of ± 2 per cent in the width of cloth shall be permitted. The width of material shall be determined by the method prescribed in CS 46.

Other specific requirements can be obtained to suit purchaser's requirements.

5 PACKING

5.1 Fabric shall be suitably folded or rolled, wrapped and packed in bales or cases in the manner agreed to between the purchaser and the supplier. Packing or wrapping material shall be sound, strong, moisture proof and non-staining. Such material include polythene sheets, water proof kraft papers and cellophane hessians.

6 LABELLING AND MARKING

6.1 Labelling

The following information shall appear in legible and indelible marking on a label securely attached to each piece.

- a) Printer's name and address and/or registered trade mark;
- b) Width and piece length;
- c) Name of the material and construction (see Table 1);
- d) The date of packing and/or batch number or code number; and
- e) The words 'Made in Sri Lanka'.

6.2 Marking

The following information if required by the purchaser shall appear in legible and indelible marking on the outside of each bale or case.

- a) Package number and contents;
- b) Width and total piece length;
- c) Number (quantity) of pieces;
- d) Date of packing and/or batch number or code number; and
- e) The words 'Made in Sri Lanka'.

7 SCALE OF SAMPLING

7.1 Lot

The quantity of cloth of the same type delivered to one buyer against one despatch note shall constitute a lot.

7.2 The conformity of the lot to the requirements of this standard shall be determined on the basis of tests carried out on the samples selected from the lot.

7.3 Unless otherwise agreed upon between the buyer and the seller, the number of pieces to be selected from the lot shall be in accordance with Columns 1 and 2 of Table 5.

TABLE 5

No. of pieces in a lot	Sample size no. of pieces to be selected (see 3.1)	Permissible no. of pieces deviating from the standard (see 4.1)	Sub sample size (see 3.2)
1	2	3	4
Up to 100	10	0	5
101 to 300	15	1	6
301 to 500	25	1	7
501 to 800	35	2	8
801 to 1300	50	3	9
1301 and above	75	4	10

7.4 These pieces shall be selected from at least 10 per cent of the bales an equal number of pieces as far as possible being drawn from each bale.

7.5 The bales or pieces shall be drawn at random. To ensure randomness of selection a random number table* shall be used.

8 NUMBER OF TESTS AND TEST SAMPLES

8.1 For evaluation of

- a) ends and picks ;
- b) width and length ;
- c) count ;
- d) optical brightening agents ;
- e) starch ; and
- f) acid; the sample selected as in Column 2 of Table 5 shall constitute the test sample.

8.2 For evaluation of

- a) breaking load ;
- b) scouring loss ;
- c) pH value ;
- d) shrinkage and elongation and
- e) colour fastness; the number of pieces specified in Column 4 of Table 5 shall constitute the test sample. These pieces may be drawn from the pieces selected for the purpose of 3.1. The required number of test specimens shall be drawn from each of the pieces and subject to corresponding tests.

*SLS 428 *Random sampling method*

8.3 For evaluation of fabric defects test sample shall be selected according to Table 6.

TABLE 6

No. of pieces in a lot	No. of pieces to be selected	Permissible number of pieces deviating from the standard
1	2	3
Up to 100	3	0
101 to 300	5	0
301 to 500	8	0
501 to 800	12	1
801 to 1300	17	1
1301 and above	20	1

8.3.1 These pieces may be drawn from pieces selected for the purpose of 3.1.

8.3.2 The selected test pieces shall not be less than 100 metres. If a piece is less than 100 metres, sufficient number of pieces shall be grouped together to form a test piece with more than 100 metres.

9 CRITERIA FOR CONFORMITY

The lot shall be considered to be in conformity with the requirements of this standard if the following conditions are satisfied.

9.1 The number of pieces deviating from the standard with respect to

- a) ends and picks ;
- b) width and length ;
- c) count ;
- d) optical brightening agents ;
- e) starch and
- f) acid of the test sample does not exceed the corresponding number in Column 3 of Table 5.

9.2 From the observed values of the breaking load tests in respect to each piece in the test sample, the average breaking load value is calculated, from all such average values, the grand average $\bar{\bar{X}}$ and the Range R_1 are calculated, and the value of expression $\bar{\bar{X}} - 0.5R_1$ is found to be greater than or equal to the specified value.

NOTES :

1) The average breaking load value for the piece is the value obtained by dividing the sum of observed values in respect of the test specimens taken from the piece, by the number of test specimens. The grand average $\bar{\bar{X}}$ is the value obtained by dividing the sum of the average breaking load values in respect of all the pieces in the test sample by the number of pieces tested.

2) The range R_1 is the difference between the maximum and minimum in a set of average breaking load values for the pieces tested.

9.3

9.3.1 From the observed values of scouring loss, the average \bar{X} and Range R are calculated and the values of the expression $\bar{X} + 0.5R$ is less than or equal to the specified value.

9.3.2 From the observed pH values, the average \bar{X} and the Range R are calculated and the value of the expression $\bar{X} + 0.5R$ or $\bar{X} - 0.5R$ lie within the specified limits.

9.3.3 From the observed values of shrinkage, the average \bar{X} and the Range R are calculated and the value of the expression $\bar{X} + 0.5R$ is less than or equal to the specified value.

NOTES :

1) Average \bar{X} is the value obtained by dividing the sum of the observed values by the number of tests.

2) Range R is the difference between the maximum and minimum in a set of values.

9.4 The colour fastness rating for various agencies obtained on tests satisfy the corresponding requirements.

9.5 The number of pieces deviating from the standard with respect to fabric defects does not exceed the corresponding number in Column 3 of Table 6.

APPENDIX A

DETECTION OF OPTICAL BRIGHTENING AGENTS

When examined under screened ultra-violet light not more than an occasional point of fluorescence shall be visible on the cloth.

APPENDIX B

DETECTION OF STARCH

Test a hot water extract of the sample with a few drops of 1 N iodine solution. A blue colour indicates presence of starch.

APPENDIX C

DETECTION OF RESIDUAL ACID

Spot a saturated solution of methyl red in water directly on the sample. A red colour indicates presence of acid.

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

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.

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.