# SRI LANKA STANDARD 795: PART 2: 1988

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## SPECIFICATION FOR
# COATED FABRICS

PART 2 - POLYVINYL CHLORIDE (PVC) COATED KNITTED FABRICS FOR UPHOLSTERY

SRI LANKA STANDARDS INSTITUTION

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SLS 795:Part 2:1988

Gr. 6



SRI LANKA STANDARDS INSTITUTION,
53, Dharmapala Mawatha,
Colombo 3,
Sri Lanka.

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SRI LANKA STANDARD

# SPECIFICATION FOR COATED FABRICS

## PART 2: POLYVINYL CHLORIDE (PVC) COATED KNITTED FABRICS FOR UPHOLSTERY

**FOREWORD**

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Sri Lanka Standards Institution on 1988-08-05, after the draft, finalized by the Drafting Committee on Coated Fabrics, had been approved by the Chemicals Divisional Committee.

This part covers polyvinyl chloride (PVC) coated knitted fabrics mainly used for upholstery.

Clauses 5.3, 5.4, and 6.2 of this specification call 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 derived from the publications of the International organization for Standardization and the British Standards Institution is gratefully acknowledged.

**1 SCOPE**

This part prescribes the requirements and methods of sampling and test for PVC coated knitted fabrics used for upholstery.

**2 REFERENCES**

IS 2244 Glossary of terms relating to treated fabrics

CS 62 Determination of colour fastness of textile material to daylight

CS 63 Determination of colour fastness of textile material to rubbing

CS 102 Presentation of numerical values

SLS 428 Random sampling methods

SLS 732 Tests for plastics

Part 1 : Qualitative evaluation of bleeding of colourant

SLS 761 Tests for rubber or plastic coated fabrics

Part 1 : Determination of roll characteristics

Part 4 : Determination of resistance to damage by flexing (dynamic method)

Part 5 : Standard atmospheres for conditioning and testing

Part 6 : Determination of coating adhesion

Part 7 : Determination of bursting strength

SLS 795 Coated fabrics

Part 1 : Polyvinyl chloride (PVC) coated woven fabrics for upholstery.

## 3 DEFINITIONS

For the purpose of this specification the definitions given in **IS 2244:1972** shall apply.

## 4 TYPES

This part covers the following types of PVC-coated knitted fabrics:

Type 1 - Fabrics with a solid PVC coating; and

Type 2 - Fabrics with an expanded layer in the PVC coating.

## 5 REQUIREMENTS

### 5.1 General requirements

The coated fabric shall be made by suitably coating the base fabric with polyvinyl chloride. It shall be flexible and shall not emit an unpleasant odour during usage. The base fabric shall be made up of natural or synthetic yarn.

### 5.2 Appearance

The coating of the fabric shall be uniformly applied and shall be free from visible flaws and cracks. When viewed under a magnification of X 10, the coated fabric shall be substantially free from pinholes. The base fabric shall not be visible through the coating.

### 5.3 Colour, grain (design/pattern) and finish

The colour, grain and finish of the coated fabric shall be as agreed to between the purchaser and the supplier.

### 5.4 Width

The usable width (see Note) of the coated fabric when measured in accordance with **SLS 761:Part 1** shall be as agreed to between the purchaser and the supplier.

*NOTE - The term 'usable width' means the width of the fabric that is coated in such a manner that it complies with the requirements specified in* **5.2**.

**5.5 Bleeding of colourant**

The coated fabric when tested and examined in accordance with **SLS 732:Part 1** shall not show any staining or marking.

**5.6 Other requirements**

The coated fabric shall also comply with the requirements given in Table 1 when tested in accordance with the methods given in Column 5 of the table.

**TABLE 1 - Requirements for PVC-coated fabric**

| Sl. No. (1) | Characteristic (2) | Requirements for Type 1 (3) | Requirements for Type 2 (4) | Method of test (5) |
|---|---|---|---|---|
| i) | Total mass per unit area, $g/m^2$, min. | 425 | 575 | **SLS 761 : Part 1** |
| ii) | Coating mass per unit area, $g/m^2$, min | 350 | 500 | **SLS 761 : Part 1** |
| iii) | Bursting strength, kPa, min. | 550 | 550 | **SLS 761 : Part 7** |
| iv) | Coating adhesion, N/50 mm, min. | 26 | 26 | **SLS 761 : Part 6** |
| v) | Elongation, per cent, min. | | | **Appendix B** |
| | a) Longitudinal direction | 10 | 10 | |
| | b) Transverse direction | 40 | 40 | |
| vi) | Tension set, per cent, max. | 33 | 33 | **Appendix B** |
| vii) | Flex cracking, cycles, min. | 400 000 | 400 000 | **SLS 761 : Part 4** |
| viii) | Volatility of plasticizer, per cent, max. | 5 | 5 | **Appendix C of SLS 795 : Part 1** |
| ix) | Print wear (change of appearance) Grey scale rating, min. | 4 | 4 | **Appendix D of SLS 795 : Part 1** |
| x) | Thickness, (at 2 kPa), mm, minimum individual reading | - | 0.9 | **SLS 761 : Part 1** |
| xi) | Resistance to burning, s, max. | 20 | 20 | **Appendix E of SLS 795 : Part 1** |
| xii) | Colour fastness | | | |
| | a) to daylight (Blue wool standard), min. | 5 | 5 | **CS 62** |
| | b) to rubbing - dry and wet, (Grey scale rating), min. | 4 | 4 | **CS 63** |

**6 PACKAGING**

**6.1** The product shall be suitably packed in the form of a roll so as to ensure safe transportation.

**6.2** A roll may contain one or more pieces. If a roll consists of more than one piece or length, the number of pieces and the minimum length of each piece of the fabric shall be as agreed to between the purchaser and the supplier.

## 7 MARKING

The following information shall be legibly and indelibly marked on each roll or on a label securely attached :

a) Name of the product;

b) Type (see 4);

c) Name and address of the manufacturer (including country of origin);

d) Registered trade mark, if any;

e) Brand name, if any;

f) Length and width of the material, in metres;

g) Number of pieces; and

h) Batch or code number.

## 8 SAMPLING

### 8.1 Lot

All the rolls of fabric of the same type and belonging to one batch of manufacture shall constitute a lot.

### 8.2 Scale of sampling

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

**8.2.2** The number of rolls to be selected from each lot shall be in accordance with Table 2.

**TABLE 2 - Scale of sampling**

| Number of rolls in the lot (1) | Number of rolls to be selected (2) |
|---|---|
| Up to 15 | 2 |
| 16 to 35 | 3 |
| 36 to 50 | 4 |
| 51 and above | 5 |

**8.2.3** The rolls shall be selected at random. In order to ensure randomness of selection, tables of random numbers as given in SLS 428 shall be used.

8.3 Number of tests

8.3.1 Each roll selected as in 8.2.2 shall be inspected for packaging and marking requirements.

8.3.2 One piece of size 140 cm x 110 cm shall be taken from each roll selected as in 8.2.2. Each piece so selected shall be examined for requirements given in 5.2 and 5.3. Test specimens (see Note) shall be cut from each of these pieces and tested for the requirements given in 5.5 and 5.6.

*NOTE - The method of selecting test specimens from each piece shall be in accordance with the Figure 1 of Appendix* A.

9 METHODS OF TEST

9.1 Tests shall be carried out as specified in CS 62, CS 63, SLS 732, SLS 761 relevant appendices of SLS 795:Part 1 : 1987 and Appendix B of this specification.

9.2 During the analysis, unless otherwise stated, reagents of recognized analytical grade and distilled water or water of equivalent purity shall be used.

9.3 Test specimens wherever necessary shall be conditioned in accordance with SLS 761 : Part 5 by method of conditioning "A" or "B", as the case may be.

10 CRITERIA FOR CONFORMITY

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

10.1 Each roll inspected as in 8.3.1 satisfies the relevant requirements.

10.2 Each specimen examined for requirements given in 5.2 and 5.3 satisfies the relevant requirements.

10.3 The value of the expression, $\bar{x} - 0.4R$ (see Notes), calculated using the test results on total mass per unit area, coating mass per unit area, bursting strength and elongation is not less than the specified value for each requirement.

*NOTES*

1. *Mean* $(\bar{x}) = \dfrac{\text{Sum of the observed values}}{\text{Number of values}}$

2. *Range (R)*

*The difference between the largest and the smallest observations.*

10.4 The value of the expression, $\bar{x} + 0.4R$, calculated using the test results on tension set and volatility of plasticizer is not more than the specified value for each requirement.

**10.5** The test results on bleeding of colourant, coating adhesion, flex cracking, print wear, resistance to burning, colour fastness to daylight and colour fastness to rubbing satisfy the relevant requirements.

**10.6** The measured values of thickness satisfy the relevant requirements.

## APPENDIX A

## METHOD OF SELECTION OF TEST SPECIMENS

The specimens for testing shall be selected from the sample in accordance with the scheme illustrated in Figure 1 which shows the positions from which the specimens for each type of test shall be taken, except that the specimens required for testing bleeding of colourant and colour fastness to daylight shall be selected from any suitable portion of the sample.

Key

M - Mass determination (3 pieces, 50 mm x 50 mm)

E (l) - Elongation (longitudinal direction) (3 pieces, 450 mm x 50 mm)

E (t) - Elongation (transverse direction) (3 pieces, 450 mm x 50 mm)

Fl(l) - Flex cracking (longitudinal direction) (3 pieces, 105 mm x 65 mm)

Fl(t) - Flex cracking (transverse direction) (3 pieces, 105 mm x 65 mm)

Rb - Colour fastness to rubbing (dry and wet) (4 pieces, 230 mm x 50 mm)

P - Print wear (2 pieces, 230 mm x 50 mm)

Vm - Volatility of plasticizer (2 pieces, 100 mm x 100 mm)

B - Resistance to burning (2 pieces, 150 mm x 150 mm)

Ad - Coating adhesion (2 pieces, 200 mm x 75 mm).

## APPENDIX B

## DETERMINATION OF ELONGATION AND TENSION SET UNDER CONSTANT LOAD

### B.1 APPARATUS

**B.1.1 Two grips**, capable of accommodating 50-mm wide test specimens. One grip shall be attached to a rigid support so that when the test specimen is inserted centrally it hangs in a vertical plane. The other grip shall be able to withstand a load of 10 kgf.

**B.1.2 A scale**, graduated in millimetres.

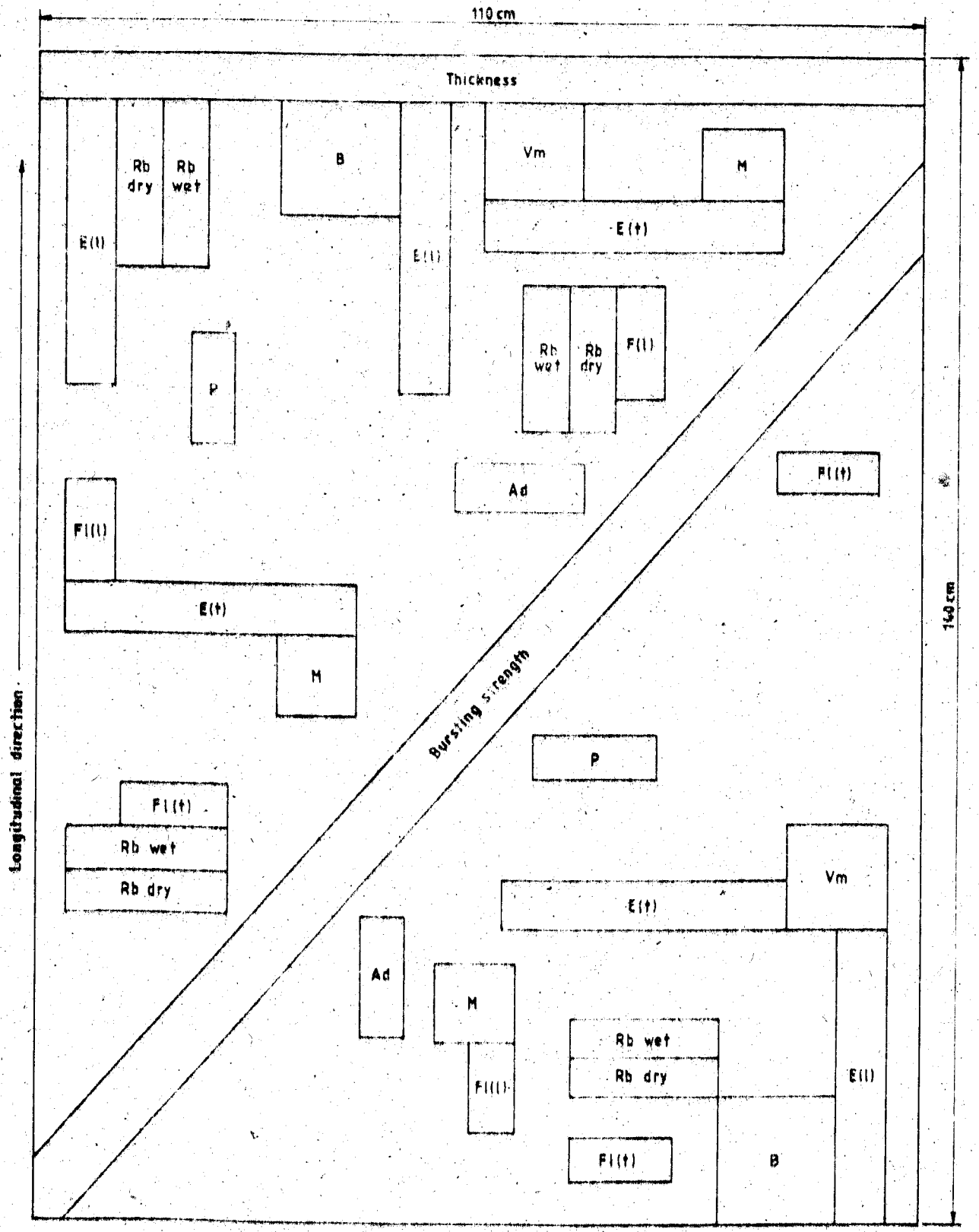


FIGURE 1 - Scheme for selection of test specimens

## B.2 PROCEDURE

Cut three specimens of coated fabric each of size 450 mm x 50 mm from the sample, with the length in the longitudinal direction and three specimens with the length parallel to the cross direction. Condition the specimens in atmosphere *A* (see **SLS 761:Part 5**). Draw two lines, 250 mm apart (100 mm from each end) and perpendicular to the longitudinal direction of the sample.

Draw another line to cut these two lines at their mid points. Make all measurements along this line. Insert a specimen centrally to the fixed grip, so that the pencilled line at the end is not less than 50 mm from the jaws. Insert the other end of the specimen in the same manner to the loose grip. Attach the fixed grip to the support.

Apply a load, to bring the mass of the loose grip to 10 kg and note the time. At the end of 10 minutes measure the distance between the lines ($l_1$) to the nearest 1 mm. Remove the load, withdraw the specimen from the grip and place it on a flat surface. Ten minutes after removing the load, remeasure the distance between the lines ($l_2$), to the nearest 1 mm.

## B.3 CALCULATION

**B.3.1** Calculate the elongation as follows:

$$\text{Elongation, per cent} = \frac{l_1 - 250}{250} \times 100$$

where,

$l_1$ = distance, in millimetres, between the lines after applying the load.

**B.3.2** Calculate the tension set as follows:

$$\text{Tension set, per cent} = \frac{l_2 - 250}{l_1 - 250} \times 100$$

where,

$l_1$ = distance, in millimetres, between the lines after applying the load; and

$l_2$ = distance, in millimetres, between the lines after recovery.

## *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.*

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