SRI LANKA STANDARD 272 : PART 2 : 1995

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# SPECIFICATION FOR ELASTIC NARROW FABRICS

## PART 2 : WEBBINGS AND CROCHET FABRICS FOR WAIST BANDS OF GENTS ' SPORTSWEAR AND UNDERWEAR (FIRST REVISION)

SRI LANKA STANDARDS INSTITUTION

Gr.6

# SRI LANKA STANDARD
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# (FIRST REVISION)

## FOREWORD

This standard was approved by the Sectoral Committee on Textiles, clothing and leather and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 1995-04-27.

This is the first revision of SLS 272:1974 Elastic Braids and Webbings. In this revision, the standard has been split into parts under the common title of "Elastic Narrow Fabrics". Part 1 of the standard covers elastic flat braids. Due to the variety of applications of narrow fabrics, it is not practicable to cover them in general. Consequently, this part covers elastic webbings and crochet fabrics for use as waist bands in gents' sportswear and underwear. In addition to the properties specified in this standard, breaking strength, tension decay, runback and elastic thread durability are properties of elastic webbings and crochet fabrics which are important for adequate performance of it. However, due to lack of information, these have not been specified in this standard.

Clause 4.9 of this specification calls for agreement between the purchaser and the supplier.

Guidelines for the determination of 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 valuable assistance derived from the following publication is gratefully acknowledged:

BS 7141 Part 4:1990 - British Standard Narrow fabrics, Woven elastic webbings containing natural rubber.

## 1 SCOPE

1.1 This specification prescribes the requirements and methods of test for elastic webbings and crochet fabrics containing natural rubber as the elastomer, for use as waist bands in gents' sportswear and underwear.

1.2 It covers only the waist bands which are not covered by the fabrics of the garment or by any other fabric.

## 2 REFERENCES

CS 16 Standard atmosphere for conditioning and testing textiles.
SLS 42 Determination of mass of unit length and per unit area of woven or knitted fabrics.
CS 52 Determination of colour fastness of textile materials to washing at 40°C.
CS 62 Determination of colour fastness of textile materials to daylight.
CS 67 Determination of colour fastness of textile materials to perspiration.
CS 102 Presentation of numerical values.
SLS 272 Elastic narrow fabrics
Part 1 : Elastic flat braids (First revision)
SLS 428 Random sampling methods.
SLS 976 Methods of tests for rubber threads.

## 3 DEFINITIONS

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

3.1 **elastic webbing** : A webbing containing natural rubber threads in warp-way with the objective of permitting stretch in that direction with virtually complete recovery on removal of the stretching force.

3.2 **webbing** : A woven narrow fabric, the prime function of which is load bearing.

**NOTE**

Webbing is generally of a coarse weave and often has multiple plies.

3.3 **crochet fabric** : A fabric made by a warp-knitting machine which uses latch or carbine needles mounted horizontally, generally on a needle bed.

## 4 REQUIREMENTS

NOTE

Tests for the requirements given in 4.1 to 4.4 should be carried out only if requested by the interested parties.

### 4.1 Rubber threads

4.1.1 Rubber threads shall be made from vulcanized natural rubber. The relative density of rubber threads shall be not more than 1.05.

4.1.2 The cross-section of rubber threads shall be not less than that of 60 round count when measured as prescribed in 4.2 of SLS 976 : 1992.

### 4.2 Textile covering yarn

4.2.1 The rubber core shall be covered with at least two ends of yarn arranged in two spirally opposed layers ensuring proper covering of the rubber core.

4.2.2 The covering yarn shall be made of any fibre or blend of which moisture regain is not less than 8.5 per cent.

### 4.3 Covered rubber threads

The elongation of a covered rubber thread shall be not less than 160 per cent by length, under a load of 225 g.

### 4.4 Non-elastic yarn

The non-elastic yarn used for warp and/or weft shall be made of any fibre or blend of which moisture regain is not less than 8.5 per cent.

### 4.5 Construction

Weave of webbing shall be carried out by shuttleloom or needleloom, and knit of crochet fabrics by a warp knitting machine.

NOTE

The construction may be with single or double fabric with rigid binder yarn and rubber threads.

### 4.6 Rubber thread content

In any 250 mm length of elastic webbing, and crochet fabric, the length of covered rubber thread shall be not less than 160 mm in each rubber core when tested as prescribed in Appendix B.

### 4.7 Selvedge

The selvedges of elastic webbings and crochet fabrics shall give adequate protection against unravelling.

## 4.8 Width

### 4.8.1 *Elastic narrow fabrics for general use*

The nominal width of elastic webbings or crochet fabrics shall be 20 mm, 25 mm or 30 mm when tested as prescribed in Part 1 of SLS 272. A tolerance of ± 1.5 mm shall be permitted on the specified width.

### 4.8.2 *Elastic narrow fabrics for sportswear*

The nominal width of elastic webbings or crochet fabrics shall be 60 mm when tested as prescribed in Part 1 of SLS 272. A tolerance of ± 2 mm shall be permitted on the specified value.

## 4.9 Length

The length of elastic webbings or crochet fabrics in a package shall be as agreed to between the purchaser and the supplier. A tolerance of ± 5 per cent shall be permitted on the declared length, when measured as prescribed in Part 1 of SLS 272.

## 4.10 Colour fastness

The colour fastness ratings of dyed elastic webbings or crochet fabrics shall conform to the requirements given in Table 1, when tested by the methods prescribed in Column 4 of the table.

**TABLE 1 - Requirements for colour fastness of elastic webbings & crochet fabrics**

| Sl. No. (1) | Fastness to (2) | Numerical rating (3) | Method of test (4) |
|---|---|---|---|
| i) | Washing | 4 or better | CS 52 |
| ii) | Daylight | 4 or better | CS 62 |
| iii) | Perspiration | 4 or better | CS 67 |

4.11 Other requirements

Elastic webbings or crochet fabrics shall also conform to the requirements given in Table 2, when tested by the methods prescribed in Column 4 of the table.

TABLE 2 - Requirements for elastic webbings & crochet fabrics

| Sl. No. (1) | Characteristic (2) | Requirement (3) | Method of test (4) |
|---|---|---|---|
| i) | Mass per unit area of fabric, g/m², min. | 600 | SLS 42 |
| ii) | Mass of rubber threads, per unit area, g/m², min. | 150 | SLS 42 and Appendix C |
| iii) | Stretch, per cent by length, min. | 100 | SLS 272 Part:1 |
| iv) | Dimensional change due to washing, in length direction, per cent, max | ±8 | SLS 272 Part:1 |
| v) | Loss of modulus, per cent, max. | 10 | SLS 272 Part:1 |

5 PACKAGING AND MARKING

5.1 A length of elastic webbing or crochet fabric as agreed to between the purchaser and the supplier shall be packed and wrapped suitably. The wrapper shall not contain any colourant capable of staining the elastic webbing or crochet fabric on wetting.

5.2 Each such package shall be legibly and indelibly marked or labelled with the following :

a) Name of the product including the Type and end use (ie. webbing/crochet fabric and for general use/sportswear)
b) Width, in mm;
c) Length, in m;
d) Name and address of the manufacturer and/or supplier (including the country of origin);
e) Brand name, if any;
f) Registered trade mark, if any; and
g) Batch identification mark.

5.3 A number of packages may also be packed in a suitable carton.

5.4 Each such carton shall be legibly and indelibly marked or labelled with the information given in 5.2 (see Note 1). In addition, the number of packages in the carton shall also be marked.

NOTES

1. When marking on carton, length {(c) of 5.2} refers to that of one package.

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

## 6. METHODS OF TEST

6.1 Tests for the requirements given in 4 shall be carried out as prescribed in the relevant Sri Lanka Standards given therein and Appendices B and C of this specification.

6.2 The conditioning and testing atmosphere shall be the standard atmosphere for conditioning and testing textiles as defined in CS 16 i.e. a relative humidity of 65 $\pm$ 2 per cent and a temperature of 27 $\pm$ 2 °C.

## 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 manufacturer's control systems coupled with type testing and check tests or any other procedure, an appropriate scheme of sampling and inspection should be adopted.

### A.1 LOT

In any consignment, all the packages either in the form of elastic webbings or crochet fabrics of same width, and 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 conformity to the requirements of this specification.

A.2.2 The number of packages to be selected from a lot shall be in accordance with Table 3.

TABLE 3 - Scale of sampling

| Number of packages in the lot (1) | Number of packages to be selected (2) | Size of sub-sample (3) |
|---|---|---|
| Upto 150 | 8 | 4 |
| 151 to 280 | 13 | 5 |
| 281 and above | 15 | 7 |

A.2.3 If the packages are packed in cartons, the number of cartons to be selected shall be in accordance with Table 3. One package shall be selected from each carton so selected, to form the sample.

A.2.4 The packages and cartons 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 package selected as in A.2.2 or A.2.3 shall be inspected for packaging and marking requirements.

A.3.2 Each package given in the sub sample selected in accordance with Column 3 of Table 3 shall be tested for the requirements given in 4.6, 4.7, 4.8, and 4.9. If necessary, each package shall also be tested for the requirements given in 4.1, 4.2, 4.3, 4.4 and 4.5. (see Note under 4)

A.3.3 Each package tested as in A.3.2 shall be tested for the requirements given in 4.11.

A.3.4 Two packages tested as above shall be tested for colour fastness.

## 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 and carton inspected as in A.3.1 satisfies the packaging and marking requirements.

A.4.2 Each package tested as in A.3.2 and A.3.4 satisfies the relevant requirements.

A.4.3 The value of the expression $\bar{x} - s$,(see Notes) calculated using the test results on mass per unit area of webbing, mass of rubber threads per unit area and stretch is not less than the specified value.

A.4.4 The value of expression $\bar{x} + s$, calculated using the test results on dimensional changes due to washing, and loss of modulus is not greater than the specified value.

NOTES

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

2. Standard deviation, s = The positive square root of the quotient obtained by dividing the sum of squares of the deviations of the test results from their arithmetic mean, by one less than the number of test results.

## APPENDIX B
## DETERMINATION OF RUBBER THREAD CONTENT

### B.1 APPARATUS

B.1.1 A pair of scissors

B.1.2 Ruler, of length at least 250 mm, graduated in millimetres.

### B.2 PROCEDURE

Cut a specimen of full width and length of 250 mm. Dissect and extract six rubber threads. Remove the covering yarn and allow the threads to relax on a smooth, flat surface for at least 30 minutes. Measure the length of each thread by laying it in a straight in an unstretched condition along the ruler. Report the average of the results.

# APPENDIX C
# DETERMINATION OF MASS OF RUBBER THREADS PER UNIT AREA

## C.1 PROCEDURE

Follow the procedure given in SLS 42 for the determination of mass per unit area of narrow fabric. After determining the dimensions of the sample, unravel the sample, separate the rubber component from the textile component and weigh the rubber component only.

## C.2 CALCULATION

$$\text{Mass of rubber threads, per unit area, g/m}^2 = \frac{m_o}{A}$$

where,

A is the area, in $m^2$, of the sample;and
m is the mass, in g, of rubber threads in the sample.

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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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