

SRI LANKA STANDARD 465:1979

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**SPECIFICATION FOR  
RUBBER SOLED CANVAS SHOES  
FOR GENERAL PURPOSES**

**BUREAU OF CEYLON STANDARDS**



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CANVAS SHOES FOR GENERAL PURPOSES

SLS 465:1979

Gr. 9

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**FOREWORD**

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Bureau of Ceylon Standards on 1979-12-21 after the draft, finalised by the Drafting Committee on Rubber Footwear, had been approved by the Technical Advisory Committee on Rubber and the Agricultural and Chemicals Divisional Committee.

This specification prescribes requirements for rubber soled canvas shoes for general use. It does not cover rubber soled canvas sports shoes nor canvas fancy shoes. The rubber soled canvas sports shoe would require a rubber sole of a superior quality depending on the sport, while the canvas fancy shoe having to cater to different taste will require varying designs.

This specification prescribes the physical requirements for various rubber components used in the construction of rubber soled canvas shoes and also makes provision for the use of natural as well as synthetic rubber components, provided they fulfil the necessary physical and functional tests. For flexing endurance test for outer soles, the Ross flexing machine has been prescribed. This machine enables testing of outer soles directly cut from the footwear which facilitates checking of the effect of the design on the sole. Footwear soles in service, bend by an angle of  $60^{\circ}$  to  $90^{\circ}$  without undue stress. Similar type of flexing by  $90^{\circ}$  angle may be best achieved by the Ross flexing machine.

This specification also prescribes in detail the requirements of material components that go into the production of the upper material. However, in the criteria for conformity, the compliance of these materials to the requirements specified is omitted as the amount of material found in a pair of shoes is not adequate to carry out the required tests.

The values given in this specification are 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 analysis, shall be rounded off in accordance with CS 102. The number of significant places retained in the rounded off value should be the same as that of the specified value in this specification.

In the preparation of this specification considerable assistance derived from relevant publications of the Standards Association of Central Africa, the Indian Standards Institution and the South African Bureau of Standards is gratefully acknowledged.

## 1 SCOPE

1.1 This specification prescribes the requirements, methods of sampling and test for rubber soled canvas shoes required for general use.

1.2 This specification does not cover canvas sports shoes and canvas fancy shoes.

## 2 REFERENCES

- CS 20 Method for the determination of size of yarns and extension of yarns from packages.
- CS 22 Method for the determination of breaking load.
- CS 41 Method for the determination of the number of threads per inch in woven fabric.
- CS 42 Method for the determination of weight per unit length and per unit area of woven or knitted fabric.
- CS 43 Method for the determination of breaking load and extension of strip of woven textile fabric.
- CS 44 Method for the determination of count of yarn removed from fabric, free from added matter.
- CS 47 Method for shrinkage of fabric: 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 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 102 Presentation of numerical values.
- SLS 297 Methods of testing vulcanized rubber.
- Part 1 Determination of relative density and density.
- Part 2 Determination of tensile stress-strain properties.
- Part 4 Determination of hardness.
- Part 5 Accelerated ageing test.
- Part 6 Determination of resistance to flex cracking.
- SLS 336 Tagged boot and shoe laces (cotton).
- SLS 374 Standard atmospheric conditions for conditioning and testing.
- SLS 428 Random sampling methods.
- SLS 492 Footwear sizes: Mondopoint system.

### 3 DEFINITIONS

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

**3.1 outer sole:** Bottom outside component providing the walking surface in the forepart and the walking surface on the base for the heel at the rear.

**3.2 foxing:** A strip of rubber placed all round in rubber canvas footwear as a sort of reinforcement concealing the joint of the upper and sole, and then vulcanized.

**3.3 upper canvas:** a) Upper part of the shoe above the outer sole, covering the foot and the leg;

b) Components covering that part

**3.4 face fabric:** Outside fabric of upper.

**3.5 backing fabric:** Lining fabric of upper in a 2-ply or 3-ply material.

**3.6 binding material:** Strip covering an exposed fabric edge.

**3.7 vamp:** a) Front area of the upper, forward of the instep;

b) Components covering that area only.

**3.8 quarter:** a) Rear area of the upper;

b) Components covering that area only.



3.9 tongue: Shaped piece of the material to protect the foot from chafing by the closure.

3.10 counter: a) Area of the upper, above the heel;

b) Reinforcement for stiffening that area.

3.11 eyelets: An annular ring of metal or other material with a barrel for inserting in footwear upper to provide a durable ring for lacing.

3.12 eyelet facing: Fabric added in eyelet area to aid eyelet grip.

3.13 toe cap: External reinforcement of the upper to protect the toes.

3.14 toe guard: Rubber component fitted around the toe position of the foxing as an additional reinforcement.

3.15 inner sole: Unbleached cotton fabric covering the exact area of the sole.

3.16 middle sole: Filling between the inner sole and the outer sole.

#### 4 COMPONENTS

##### 4.1 Upper materials

##### 4.1.1 Upper canvas

The upper canvas shall be a combination of face fabric and a backing fabric that are so stuck together with a suitable adhesive, and when tested in accordance with A-3 the strength of the bond shall be at least

0.4 N/mm of width. The requirements of face fabric and backing fabric shall be as follows:

4.1.1.1 Face fabric

The face fabric shall be cotton canvas that complies with the requirements specified in Table 1 and shall have a bleached finish or a dyed finish. In the case of a dyed finish, the colour shall be specified by the purchaser.

TABLE 1 - Requirements for face fabric

SL No.	Characteristic	Requirement	Tolerance	Method of Test
(1)	(2)	(3)	(4)	(5)
1	Weave	Plain	-	-
2	Count of yarn, in tex a) warp b) weft	2 x 30 2 x 30	} ± 5%	CS 44
3	Number of threads per 10 mm a) warp b) weft	23 12		
4	Mass, g/m <sup>2</sup>	220 to 227	-	CS 42
5	Breaking load before vulcanization, daN, Min. a) warp b) weft	78 33	-	CS 43
6	Change in breaking load after vulcanization at 140°C for 50 min at a pressure of 345 kPa, max. a) warp b) weft	+ 10% ± 10%	- -	CS 43
7	Shrinkage or elongation, max.	5%	-	CS 47
8	Scouring loss, max.	5%	-	CS 87
9	pH	6.0 to 8.5	-	CS 86 Cold method
10	Colour fastness to washing at 95 °C for 30 min.	4 or better	-	CS 55
11	Pinking test	To pass	-	Appendix B

#### 4.1.1.2 Backing fabric

The backing fabric shall be unbleached cotton drill that complies with the requirements specified in Table 2.

TABLE 2 - Requirements for backing fabric

SL No. (1)	Characteristic (2)	Requirement (3)	Tolerance (4)	Method of Test (5)
1	Count of yarn, in tex a) warp b) weft	20 20	} ± 5%	CS 44
2	Number of threads per 10 mm a) warp b) weft	26 17	+ 5% - 2.5%	CS 41
3	Mass, g/m <sup>2</sup>	125	+ 5% - 2.5%	CS 42
4	Breaking, load, daN min. a) warp b) weft	25 15	- -	CS 43

#### 4.1.2 Inside counters

Rag scrap (or similar material) backed with fabric shall be used. The total finished thickness of the inside counter shall be not less than 1.50 mm and not more than 1.75 mm. The fabric shall be unbleached and shall comply with the requirements specified in Table 3.

TABLE 3 - Requirements for counter material

SL No. (1)	Characteristic (2)	Require- ment (3)	Tole- rance (4)	Method of Test (5)
1	Weave	3/1 Twill	-	-
2	Count of yarn, in tex .			
	a) warp	42	+ 5% - 5%	CS 44
	b) weft	42		
3	Number of threads per 10/mm		-	
	a) warp, min.	30	-	CS 41
	b) weft, min.	14		
4	Mass, g/m <sup>2</sup>	210	+ 5% - 2.5%	CS 42
5	Breaking load, daN, min.			
	a) warp	75	-	CS 43
	b) weft	30		

#### 4.1.3 *Binding material*

Bleached or dyed cotton cloth shall be used.

#### 4.1.4 *Eyelet facing material*

As in 4.1.1.1.

#### 4.1.5 *Eyelets for lacing*

Plastic, brass or aluminium eyelets, coated or enamelled shall be used. The dimensions shall be as agreed to between the manufacturer and purchaser. The barrels shall be long enough to ensure proper clinching on the facings. The metal eyelets shall pass the corrosion resistance test specified in Appendix C.

#### 4.1.6 *Threads*

Threads used for attaching various upper components shall comply with the yarn and loop tenacity requirements given in Table 4 when tested by the methods given in Appendix D.

TABLE 4 - Requirements for thread

Composition of threads	Yarn tenacity, min.	Loop tenacity, min.
Cotton	2.4	3.8
Linen	2.6	3.3
Polyester	4.5	6.3
Polyamide	4.0	5.8
Blended (core-spun)	3.1	4.0

## 4.2 Bottom materials

4.2.1 Individual components of the shoes shall comply with the material and thickness requirements prescribed in Table 5.

TABLE 5 - Material and dimensional requirements of bottom materials

SL No. (1)	Components (2)	Material (3)	Thickness, mm. (4)
1	Outer sole	Rubber	2.0 min.
2	Foxing	Rubber	1.5 min.
3	Toe guard*	Rubber	1.2 min.
4	Toe cap	Rubber	1.2 min.
5	Inner sole (backing fabric)	Cotton-material	-
6	Middle sole*	Rubber based filler	2.5 min.

\* Where applicable

4.2.2 Individual rubber components of the shoes shall comply with the physical requirements prescribed in Table 6.

TABLE 6 - Physical requirements for bottom rubber material

SL No. (1)	Characteristic (2)	Sole, heel, foxing toe guard and toe cap (3)	Method of Test Refer SLS 297 (4)
1	Relative density, max.	1.5	Part 1
2	Hardness, IRHD a) before ageing, max. b) change from initial hardness after accelerated ageing (at 70 + 2 °C for 7 days)	65 + 5 - 0	Parts 4 and 5
3	Tensile strength (both directions) a) before ageing, min. b) change after ageing at 70 + 2 °C for 7 days, max.	7.0 MPa  +20%	Parts 2 and 5
4	Elongation at break (both directions) a) before ageing, min. b) change after ageing at 70 + 2 °C for 7 days, max.	350%  +20%	Parts 2 and 5
5	Flex resistance, initial crack, no. of cycles, min.	150,000	Part 6 Method B

## 5 CONSTRUCTIONAL REQUIREMENTS

### 5.1 Upper construction

#### 5.1.1 Pattern

The pattern shall be as shown in Fig. 1.

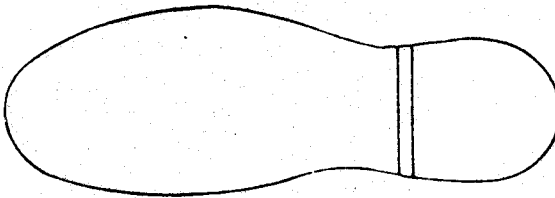
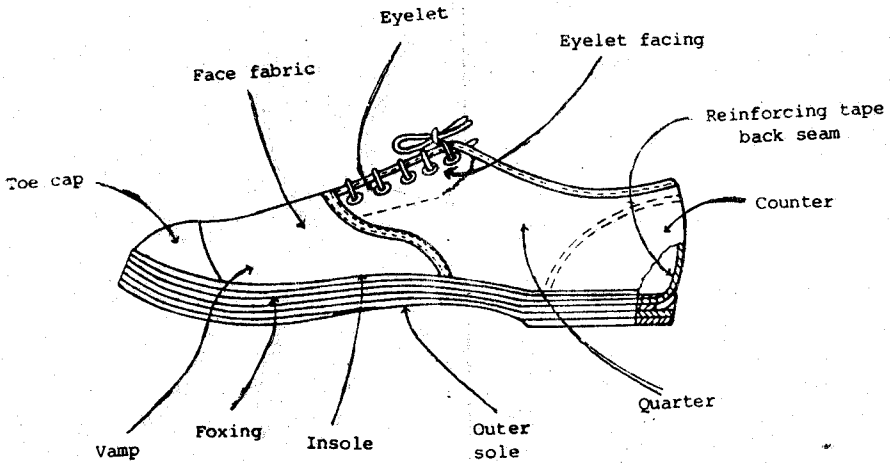


Fig 1 - Rubber soled canvas shoe



### **5.1.2 Quarters**

The top and inside edges of the quarters shall be bound. The binding shall extend to the end of the lasted overlay of the quarter.

### **5.1.3 Vamp and tongues**

The top edges of the vamps and tongues shall be bound. The binding shall extend to the end of the lasted overlay of the vamp.

### **5.1.4 Inside counters**

The inside counters shall be properly sewn in. The inside counter shall be fitted to the upper at the back in such a manner that the top of the inside counter is just below the edge of the binding on the quarters. The top edge of the inside counter shall not overlap the binding on the back of the quarter.

### **5.1.5 Back seam construction**

The quarters shall be joined at the back with a closed seam (using a lock stitch or chain stitch) and rubbed down.

## **5.2 Closing**

### **5.2.1 General**

All inside upper seams shall be free from ridges and roughness. There shall be no loose, ragged or uneven seams and all loose thread ends shall be removed. The minimum requirements for the attachment of the various upper components shall be as detailed in Table 7.

**TABLE 7 - Requirements for stitching**

Seams  (1)	Number of rows of stitching, min.  (2)	Number of stitches per 10 mm  (3)
Back seam	1 row closed	5
Facing	1 row on bound edge of facing	5
Inside counters	1 row	5
Insole	1 row	5

### 5.2.2 Binding

The binding shall be so applied that there is no looseness or unevenness along the top edges of any component.

### 5.2.3 Facing

The facing for eyelets shall be joined to the outside of the upper. The lower edge of each facing shall be bound and then attached to the upper as follows:

#### 5.2.3.1 Top edge of facings

The top edge of each facing shall be sewn in with the top edge binding seam.

#### **5.2.4 Eyelets for lacing**

The eyelets shall be evenly spaced along the facings of the shoes and shall have a secure smooth roll-clinch or secure star-clinch setting. The number of eyelets used shall depend on the size of the shoe but shall not be less than 2 pairs on each shoe.

### **5.3 Manufacture**

#### **5.3.1 Process**

The shoes shall be made by the direct mould process in a suitable mould press manufactured for the purpose.

#### **5.3.2 Lasting**

The canvas upper shall be slip lasted. The upper shall be so drafted as to provide for an overlay, right round the inner sole, of width of at least 12.5 mm. After lasting, all excess upper material at the toe area shall have been so shaved off as to produce a level surface.

#### **5.3.3 Vulcanization**

Vulcanization shall be carried out at a temperature which will ensure a full cure. On completion of vulcanization there shall be no sign of tackiness on the vulcanized portion of the shoe.

#### 5.4 Peeling strengths of the attachments

The peeling strength of the attachments determined at least 48 h after vulcanizing shall when tested in accordance with

- a) A-1, be at least 170 N in the case of the outer sole attachment at the forepart, waist, and heel areas;
- b) A-2, be at least 11 N/10 mm of width in the case of the bond between the foxing and canvas upper.

#### 5.5 Colour fastness

The upper materials and thread used for stitching, if dyed shall be fast to light, mechanical washing and vulcanizing.

#### 5.6 Ageing

All rubber components when aged at  $100 \pm 1$  °C for 24 h in an air oven in accordance with the method prescribed in SLS 297:Part 5 shall show no signs of brittleness or tackiness.

### 6 FINISH

#### 6.1 Freedom from defects

Defects commonly observed during visual inspection of canvas rubber soled shoes are categorised into major and minor defects as given in Table 8. The permissible number of such defects shall be as given in the sampling scheme.

**TABLE 8 - Visual defects**

SL No. (1)	Major defects (2)	Minor defects (3)
1	Difference in shape, design and colour.	Stains and dirt in lining and insole.
2	Incorrect size/wrong size packing/odd pairing.	Stiffeners not centrally placed.
3	Distortion of shape.	Slight variation in positioning of eyelets.
4	Faulty jointing and adhesion of sole, heel, toe guard, toe cap and insole.	Illegible marking on the insole.
5	The toe reinforcement omitted or not cemented properly to the vamp.	Overlapping of the foxing on the sole.
6	Foxing not covering sole and upper.	Slight variation in height of quarter and leg.
7	Excessive pitting or air packet or bulging of the sole and heel or any other rubber component.	Substandard lace (see 6.2).
8	Insole cut short.	
9	Broken stitches and incorrect number of stitches. (see 5.2.1)	
10	Crooked imitation stitches.	
11	Missing or defective eyelets or eyeletting, (see 5.2.4).	
12	Shrinkage of soles or upper material.	

## 6.2 Laces

Each pair of shoes shall be provided with one pair of laces of the correct length. The tag-ends of the laces shall be fused. The lace shall comply with the requirements of Type 7 of SLS 336.

## 7 PACKAGING AND MARKING

### 7.1 Packaging

Each pair of shoes shall be packed in a suitable manner to protect it from damage during normal transportation, storage and handling.

### 7.2 Markings

#### 7.2.1 Shoes

On the inside of each shoe at a prominent place the following information shall be neatly and legibly stamped:

- a) Size of the shoe in Mondopoint system;

*NOTE - English system could also be used in addition.*

- b) Manufacturer's name or registered trade mark, or both; and
- c) Date or batch of manufacture.

#### 7.2.2 Boxes

The information required in terms of 7.2.1 (a) and (b) shall be marked on each box.

## 8 SAMPLING AND CRITERIA FOR CONFORMITY

For the purpose of ascertaining the conformity of shoes in a consignment to this specification the scale of sampling and criteria for conformity shall be as prescribed in Appendix E.

### APPENDIX A

#### METHODS OF TESTING ATTACHMENT PROPERTIES OF FOOTWEAR

##### A.1 PEELING STRENGTHS OF BOND BETWEEN OUTER SOLE AND CANVAS UPPER

###### A.1.1 Apparatus

A *power-driven tensile-strength testing machine*, with a constant rate of traverse of the moving grip of  $50 \pm 5$  mm per min, and equipped with means for recording graphically the forces applied during a test.

###### A.1.2 Preparation of test specimens

Without damaging the canvas upper, cut (through the foxing and toe-guard at the toe-end) between the upper and the outer sole for a distance of 25 mm.

###### A.1.3 Procedure

Clamp the canvas upper in the top jaw and the outer sole in the bottom jaw of the machine. Operate the machine and record graphically the force required to pull the upper and the outer sole apart.

#### A.1.4 Calculation

Take as the peeling strength of the attachment at the forepart, waist, and seat areas respectively the arithmetic mean of the forces registered during the testing of each of these areas.

### A.2 PEELING STRENGTH OF BOND BETWEEN FOXING AND CANVAS UPPER

#### A.2.1 Apparatus

As in A.1.1.

#### A.2.2 Preparation of test specimens

Use a specimen (cut from foxing-to-canvas bonded area) of width exactly 6.0 mm and length of at least 70 mm. Dip one end of the specimen to a depth of 6 mm into dimethyl ketone (acetone), and separate the canvas from the foxing for a distance of 5 mm. Condition the specimen for 24 h as described in SLS 374.

#### A.2.3 Procedure

Clamp the free end of the foxing in one jaw of the machine and the free end of the canvas in the other. Operate the machine and record graphically the force required to separate the canvas from the foxing over a distance of 50 mm (measured from the start of the unbroken bond on the test specimen).

#### A.2.4 Calculation

Take as the peeling strength of the bond in N/10 mm of width, the arithmetic mean of the forces, in newtons, registered during the test multiplied by  $\frac{10}{6}$

6



### **A.3 STRENGTH OF BOND BETWEEN FACE FABRIC AND BACKING FABRIC**

#### **A.3.1 Apparatus**

As in A.1.1

#### **A.3.2 Preparation of test specimens**

Use a specimen (cut from the upper canvas) of width, exactly 25 mm and length of at least 70 mm. Dip one end of the specimen to a depth of 6 mm into dimethyl ketone (acetone), and separate the face fabric from the backing fabric for a distance of 5 mm. Condition the specimen for 24 h as described in SLS 374.

#### **A.3.3 Procedure**

Clamp the free end of the face fabric in one jaw of the machine and the free end of the backing fabric in the other. Operate the machine and record graphically the force required to separate the face fabric from the backing fabric over a distance of 50 mm (measured from the start of the unbroken bond on the test specimen).

#### **A.3.4 Calculation**

Take as the strength of the bond, in N/mm of width, the arithmetic mean of the forces, in newtons, registered during the test divided by 25.

**APPENDIX B**  
**PINKING TEST**

**B.1 TEST SPECIMEN**

Sample of canvas 30 mm x 30 mm

**B.2 REAGENT**

*Mixture of aniline, acetic acid and xylene, mixed in the ratio 1:2:3 by volume.*

**B.3 PROCEDURE**

The sample of canvas shall be subjected to the vapour of the mixture specified in B.2 for a period of 16 h. At the end of this period there shall be no visible discolouration of the sample.

**APPENDIX C**  
**CORROSION RESISTANCE TEST**

**C.1 REAGENT**

*Sodium chloride, 100 ml, 1 per cent*

**C.2 PROCEDURE**

100 ml of 1 per cent sodium chloride solution is poured into a porcelain dish. A glass plate is placed so that a part of the glass plate is covered with the solution. One end of a strip of filter paper of 100 mm width and 150 mm length is immersed in the

solution while the other end is laid on the glass plate, so that it may be sucked full.

The metal eyelets are laid for 48 h on the end of the filter paper that is covered with the solution. After this period investigate whether the filter paper is discoloured. If it is not discoloured eyelets are said to have passed the corrosion resistance test, otherwise not.

## APPENDIX D

### DETERMINATION OF YARN AND LOOP TENACITY OF THREAD

#### D.1 DETERMINATION OF YARN TENACITY

D.1.1 Determine the breaking strength in centinewtons by the method specified in CS 22.

D.1.2 Determine the count of yarn by the method specified in CS 20 and express the results in decitex.

D.1.3 The yarn tenacity is calculated as follows:

$$\text{Yarn tenacity} = \frac{B_1}{C}$$

where,

$B_1$  = breaking strength in cN ; and

C = count of yarn in dtex

D.1.4 Duplicate determination shall be made and the arithmetic mean shall be calculated.

## D.2 DETERMINATION OF LOOP TENACITY

D.2.1 Determine the loop strength in centinewtons by the method specified in CS 22 except that

- a) a pair of specimens shall be used for each list;
- b) the ends of one specimen shall be brought together to form a loop and then fastened with top jaw so that the loop hangs approximately halfway between the top and bottom jaws;
- c) the second specimen shall be passed through the loop, the ends shall be fastened with bottom jaw; and
- d) the initial tension shall be 2.2 newtons.

D.2.2 The loop tenacity shall be calculated as follows:

$$\text{Loop tenacity} = \frac{B_2}{C}$$

where,

$B_2$  = loop breaking strength, in cN; and

$C$  = count of yarn in dtex

D.2.3 Duplicate determination shall be made and the arithmetic mean shall be calculated.

## APPENDIX E

### SAMPLING AND CRITERIA FOR CONFORMITY (See 8)

#### E.1 DEFINITIONS

For the purpose of this sampling scheme, the following definitions shall apply:

**E.1.1 lot:** A collection of rubber soled canvas footwear in a consignment belonging to the same pattern or batch of manufacture. In case the batch size is small, footwear of the same size and pattern manufactured during a period not exceeding a week may be grouped together to form a lot.

**E.1.2 tender sample:** The pairs of footwear of any particular size fitting and pattern submitted by the supplier with his tender.

**E.1.3 approved sample:** The pairs of footwear of any particular size, fitting and pattern chosen from the tender samples by the purchaser as the basis of supply; when a sample is tested and approved by the purchaser the results of such tests that would help the supplier in meeting the specification for delivery shall be made available to the supplier on request.

**E.1.4 defect:** Failure or fault of a footwear to meet the requirements of this specification and approved sample, if any, with regard to any quality characteristic including physical, chemical and performance properties, also an irregularity in material, workmanship or damage due to careless and inadequate packing.

**E.1.5 defective footwear:** A footwear having one or more defects mentioned above.

## E.2 SCALE OF SAMPLING

E.2.1 Samples shall be selected and examined for each lot for ascertaining the conformity of the footwear to the requirements of this specification.

E.2.2 For the purpose of formation of lots, footwear shall be considered to be of different patterns, if they differ in any of the ways enumerated below:

- a) Type of rubber,
- b) Fabric used in the upper, binding, stiffening and bottom material;
- c) Type and material of which heel, sole and toe cap and other reinforcements are made.
- d) Shape and design.

E.2.3 The number of footwear pairs to be selected from any lot shall depend on the size of the lot and shall be in accordance with Columns 1 and 2 of Table 9.

## E.3 METHODS OF SELECTION

E.3.1 Footwear to be selected from the lot shall be chosen at random. In order to ensure the randomness of selection, a random number table specified in SLS 428 shall be used.

**TABLE 9 - Scale of sampling  
and permissible number  
of defectives**

No. of footwear pairs in the lot  (1)	Sample size  (2)	Permissible number of defective pairs for major defects  (3)	Permissible number of defective pairs for minor defects  (4)
Up to 50	13	0	1
51 " 100	20	1	1
101 " 300	32	1	2
301 " 500	50	2	3
501 " 1000	80	3	5
1001 " 3000	125	5	7
3001 and above	200	7	10

*NOTE - The AQL values for the sampling plans corresponding to the permissible number of defectives given in Columns 3 and 4 are 1.5 and 2.5, respectively.*

**E.3.2** When the footwear pairs in the lot are packed in a number of cases, the sample cases to be selected at random shall be as given in Table 10. From each of the sample boxes, approximately equal number of footwear pairs shall be selected at random to give the required sample size prescribed in Table 9.

TABLE 10 - Number of cases to be included in the sample

Lot size (No. of cases) (1)	Sample size (2)
Up to 03	All
04 " 10	04
11 " 20	05
21 " 30	08
31 " 40	11
41 " 60	15
61 " 80	21
81 " 100	27
101 and above	30

#### E.4 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

##### E.4.1 Visual and tactile examination

##### E.4.1.1 General

The lot shall be first subjected to detailed visual and tactile examination. The defects usually observed on such examination have been broadly divided into two classes, namely, major defects and minor defects, in order to facilitate sampling inspection. The list of defects as classified in Table 8, is not exhaustive but covers those which are commonly met with during inspection.



#### **E.4.1.2 *Inspection for major defects***

The sample size for this examination is given in Column 2 of Table 9. All the selected footwear pairs shall be examined for major defects (see Table 8). A defective footwear under this clause shall be one which contains one or more of major defects and it may or may not show minor defects. A pair is termed defective if one or both of the constituent footwear are defective. The number of defective footwear pairs shall not exceed the permissible number given in Column 3 of Table 9 if the lot is to be accepted under this clause.

#### **E.4.1.3 *Inspection for minor defects***

The lot which passes the test under E.4.1.2 shall be subjected to scrutiny for minor defects (see Table 8). The sample size is the same as in E.4.1.2. These sample pairs may be drawn from among those found satisfactory under E.4.1.2 along with the required number of fresh pairs to give the prescribed sample size. Under this clause a defective footwear may contain one or more of minor defects but shall not show any major defect. The number of defective pairs found on this examination shall not exceed the permissible number given in Column 4 of Table 9.

#### **E.4.2 *Physical and destructive tests***

**E.4.2.1** The lot which passes the visual and tactile examination under E.4.1 shall be subjected to these tests. For dimensional requirements of components specified in 4.1.2 and Table 5, colour fastness (see 5.5) pinking test (see Table 1), and corrosion resistance for eyelets (see 4.1.5), the sample size is given in Column 2 of Table 11. For physical tests on rubber components, strength of bond between face

fabric and backing fabric (see 4.1.1), peeling strength of attachment (see 5.4) and ageing (see 5.6) the sample size is given in Column 3 of Table 11.

**E.4.2.2** The footwear pairs for the above tests shall be selected from among those pairs which have passed the visual and tactile examination under E.4.1. These pairs shall then be opened up and tested.

**E.4.2.3** The lot shall be declared as satisfactory if all the selected pairs pass the prescribed tests.

**TABLE 11 - Scale of sampling for physical and destructive tests**

No. of footwear pairs  (1)	Sample	Size
	Dimensional requirements, colour fastness, pinking test, corrosion resistance  (2)	Rubber components and test for attachment properties  (3)
Up to 100	1	1
101 " 300	2	1
301 " 500	2	2
501 " 1000	3	2
1001 and above	3	3

## **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.