

**TAMILNADU TEXTBOOK AND EDUCATIONAL SERVICES CORPORATION,**  
**CHENNAI – 6.**

**R.C.No.995/Pur-1/2020**

**Corrigendum for Procurement of SHOES for the year 2020-2021**

1) The revised schedule of Sale period of tender document, submission of Tender and opening of Tender are as follows:-

Sl. No.	Article	RC.No.	Tender Notice on	Pre Bid meeting held on	Sale period of Tender document	Last date & Time for submission	Tender opening
1	Shoe	992/PUR-1/2020	26.03.2020	20.05.2020 at 11.00 am	30.06.2020 upto 05.00 p.m.	01.07.2020 upto 02.30 pm	01.07.2020 upto 03.00 pm

2) Shoes Technical specification revised as follows:

**PVC UPPER/ PVC SOLE- SHOE**

**Specification for Boys & Girls School Shoe for Tamil Nadu Text Book and Educational Services Corporation (Sizes 4 to 9)**

Shoe Sizes:

S. No	Age (years)	Standard/Class	Boys Shoe Size	Girls Shoe Size
1	11-12	6-7	4-5	4-5
2	13-14	8-9	6-7	6-7
3	15-16	9-10	8-9	8-9

**A. Upper – (Raw material test for Boys and Girls shoe)**

**Material: PVC Coated polyester fabric (Woven )- Colour : Black**

S.NO	Properties Required	Test Method	Specification
1	GSM, g/m <sup>2</sup>	IS: 1964: 2001 / ISO 3801: 2017 / SATRA TM 28: 1994	Min 850
2	Thickness, mm	SATRA TM 27: 2018	2.0±0.2
3	Breaking strength, N/mm	ISO 1421: 2016 Method-1 / SATRA TM 29: 2017	Min 10 (Tighter and Stretch Direction)
4	Elongation at break, %	ISO 1421: 2016 Method-1 SATRA TM 29: 2017	Min 7 for Tighter Direction Min 15 for Stretch Direction
5	Tear strength, N	IS 7016 Part 3, Sec 1 Method B: 2017 / ISO 4674-1: 2016 Method B	Min 30 (Tighter and Stretch Direction)
6	Flexing Resistance at 20°C ( Vamp Flexing method) Dry at 1,00,000 flexes Wet at 50,000 flexes	ISO 5423: 2019 Annex-B / SATRA TM 25:2018	No crack No crack
7	Needle perforation strength N/mm	ISO 17697:2016 Method A /	Min 3.5

**B. Lining: Vamp, Quarter and Counter Lining (Raw material test for Boys and Girls)**

**Material: Black colour non allergic knitted mesh fabric (nylon or polyester) sandwiched with foam (PU or EVA )**

S.NO	Properties Required	Test Method	Specification
1	Thickness, mm Fabric with foam,	SATRA TM 27: 2018	Min 3.0
2	Abrasion Resistance (Martindale Method) Dry- 25,600 cycles Wet- 6,400 cycles	ISO 17704:2019 / SATRA TM 31: 2014	No Hole Formation No Hole formation
3	Tear Strength, N	IS 7016 Part 3, Sec 1 Method B: 2017/ ISO 4674-1: 2016 Method B	Min 15
4	Colour fastness to rubbing Dry 10 Rubs Wet 10 Rubs	ISO 20433:2017 IS 766:1988 / SATRATM 67:2017	Gray Scale Rate Min Grade 3 Min Grade 3

**C. In-sock Lining (Raw material test for Boys and Girls)**

**Material: Black colour non allergic knitted mesh fabric (nylon or polyester) sandwiched with foam (PU or EVA )**

S.NO	Properties Required	Test Method	Specification
1	Thickness, mm Fabric with Foam	SATRA TM 27: 2018	Min 3.0
2	Abrasion Resistance (Martindale Method) Dry- 25,600 cycles Wet- 6,400 cycles	ISO 17704:2019 / SATRA TM 31: 2014,	No Hole Formation No Hole formation
3	Colour fastness to rubbing Dry 10 Rubs Wet 10 Rubs	ISO 20433:2017 / IS 766:1988 / SATRATM 67:2017	Gray Scale Rate Min Grade 3 Min Grade 3

**D. Binding/Piping (Raw Material test for Girls Shoe)****Material: Nylon or Polyester braided tape, colour: Black**

S.NO	Properties Required	Test Method	Specification
1	Thickness, mm	SATRA TM 27: 2018	0.6±0.2
2	GSM	IS: 1964: 2001 / ISO 3801: 2017 / SATRA TM 28: 1994	Max 200
3	Width, mm	Measurement	16.0±0.2

**E. Lace: (Raw Material test for Boys shoes)****Material -Black colour, Round Nylon/Polyester having tips bound with plastics**

S.NO	Properties Required	Test Method	Specification
1	Breaking strength, N	SATRA TM 94:2018	Min 200
2	Tag strength, N	SATRA TM 175:2004	Min 120
3	Colour Fastness to water	ISO 11642:2018 / SATRA TM 335:2018	Gray Scale Rate Min Grade 3
4	Lace to lace abrasion	ISO 22774:2004 Method 1 / SATRA TM 154: 2018	No damage to the lace at 5000 cycles
5	Diameter of the lace, mm	Measurement	3.0±0.5
6	Length of the lace, cm Size 4& 5 Size 6-9	Measurement	Min 70 Min 75

**F. Eyelet: (Raw Material test for Boys shoes)****Material –Rust proof Black enameled Aluminium eyelet**

S.NO	Properties Required	Test Method	Specification
1	No. of eyelet Size 4 & 5 Size 6-9  Eyelet Diameter	4 each side 5 each side  4.0±0.5mm	Visual Measurement
2	Corrosion resistance	ISO 22775:2014 Method 2 / SATRA TM 310:1992 Method 2	Grade 4 and above

**G. Counter stiffener: (Raw material test for Boys and Girls Shoe)****Material-Thermoplastic stiffener**

S.NO	Properties Required	Test Method	Specification
1	Thickness, mm	SATRA TM 27: 2018	1.4±0.2

**H. Thread: (Raw material test for Boys and Girls)****Material- Nylon /Polyester or Blended thread having ticket no 40/3(Top thread)and 60/2 (Bobin Thread), Colour: Black**

S.NO	Properties Required	Test Method	Specification
1	Breaking strength, kg	ISO 2062:2009 / SATRA TM 74:1994	Min 2.5
2	Elongation at break,%	ISO 2062:2009 / SATRA TM 74:1994	15-30

**I. Velcro fastener: (Hook and Loop) (Raw Material test For Girls shoe)****Material–Nylon**

<b>S.NO</b>	<b>Properties Required</b>	<b>Test Method</b>	<b>Specification</b>
1.	Width, mm	Measurement	20±1
2	Peel strength, N/mm Initial After 5000 cycles Wear	ISO 22777:2014 / SATRA TM 123: 2018	Min 0.10 Min. 0.08
3	Shear strength, kPa Initial After 5000 cycles Wear	ISO 22777:2014 / SATRA TM 123: 2018	Min 75 Min 65

**J. Loop- Metal (Raw Material test for Girls shoes)**

<b>S.NO</b>	<b>Properties Required</b>	<b>Test Method</b>	<b>Specification</b>
1.	Width of loop, mm	Measurement	22±1
2.	Loop Strength, N	SATRA TM 151: 1999	Min 200
3	Corrosion resistance	ISO 22775:2014 Method 2 / SATRA TM 310:1992 Method 2	Grade 4 and above

**K. Out Sole: (Product / Raw material test for Boys and Girls shoes)****Material-Poly Vinyl Chloride Sole, Colour Black**

S.NO	Properties Required	Test Method	Specification
1	Thickness, mm Forepart (With cleat) Heel (With Cleat) Cleat height	Measurement	Min 10.0 Min 20.0 Min 2.5
2	Hardness, Shore A	IS 13360 :2013, Part 5 Sec. 11 / ISO 868: 2018 SATRA TM 205:2017	70±10
3	Density, g/cc	IS 3400: 2014 Part 9, ISO 2781:2018 / SATRA TM 134:2010	0.70-0.95
4	Flexing Resistance, (Bata belt method) At 50,000 flexes	ISO 16177:2012 / SATRA TM 133: 2017	No crack at flexing area
5	Abrasion resistance,mm <sup>3</sup> ( Relative volume loss)	IS 3400, 2018, part 3 ISO 4649:2017 / SATRA TM 174: 2016 Method 1	Max 350

**L. Bond strength (Product test for Boys and Girls shoe)**

S.NO	Properties Required	Test Method	Specification
1	Sole bond strength, N/mm	ISO 17708:2018 / SATRA TM 411: 1992	Min 4.0 for other than stitched sole Min 3.0 for material tear

**M. Whole shoe flexing (Product test for Boys and Girls shoe)**

S.NO	Properties Required	Test Method	Specification
1	Whole shoe flexing At 1,00,000 flexing	SATRA TM 92:2016	No damage to shoe components and no sole open

**N. Slip resistance of footwear (Product test for Boys and Girls shoe)**

S.NO	Properties Required	Test Method	Specification
1	Co-efficient of friction (COF) Quarry Tiles Dry Wet	SATRA TM 144: 2011	Min 0.3 Min 0.3

**O. Attachment strength (Product test for Girls Shoe)**

S.NO	Properties Required	Test Method	Specification
1	Attachment strength of strap and metal loop, N	SATRA TM 181: 2017	Min 150
2	Peel strength, N/mm Initial	SATRA TM 123: 2018 ISO 22777:2014	Min 0.10
3	Shear strength, kPa Initial	SATRA TM 123:2018 / ISO 22776:2014	Min 75

**P. Screening of harmful chemical substances present in the PVC Shoe-**

PVC shoe and components shall comply Harmful chemical substances present as per  
**IS 17011: 2018 – Table 1**

**Q. Acceptance for Non-Destructive test for shoes**

S.No	Property	Remarks
1	Aesthetic appearance	Very good/ good/poor
2	Clean feather line	Very good/ good/poor
3	Colour matching as per sample	Very good/ good/poor
4	Flexibility of shoe	Very good/ good/poor
5	Quality of stitch	Very good/ good/poor

**Note:** Non-destructive test does not indicate the quality of the shoes.

## **R. Design and manufacture guide for shoe**

The design of shoe shall be oxford model (eyelets as mentioned in 'F' S.No.1)

The shoe shall be made on last on size 4 and above having fitting of 'G' reference of Indian Standard no. 1638: 1969.

The upper shall be closed with lock stitching. The number of stitches shall be 3-4 stitches per centimeter. Round point needle shall be used for stitching. All the loose ends of the threads shall be secured. The upper shall be lasted by string lasting method.

The collar padding of the upper shall be PU foam with minimum width of 15 mm to give comfort to the wearer.

The sole attachment shall be Direct Injected Molding Process with adequate anti-skid resistance tread pattern, sole shall not include continuous lateral tread patterns

Ladies shoe strap should be single strap going through metal loop, reversing and fastened with Velcro (metal loop to be on inside and Velcro to be outside of the shoe)

Weight of the shoe shall be a maximum of 750 grams/pair for sizes 6 to 9 and 550 grams/pair for sizes 4 & 5.



**Raw materials to be submitted along with tender sample for testing (Table A-P) for each boys and girls**

S.No	Property	Remarks
1.	PVC coated polyester fabric - Colour: Black	1 Meter x 1 Meter
2.	Lining: Black colour non allergic knitted mesh fabric (nylon or polyester) sandwiched with foam (PU or EVA)	1 Meter x 1 Meter
3.	In-sock Lining: Black colour non allergic knitted mesh fabric (nylon or polyester) sandwiched with foam (PU or EVA)	1 Meter x 1 Meter
4.	Binding/Piping Material: Nylon or Polyester braided tape, colour: Black	1 meter
5.	Lace: Black colour, Round Nylon/Polyester having tips bound with plastics	20 pairs
6.	Eyelet –Rust proof Black enameled Aluminium eyelet	15 no's
7.	Counter stiffener: Thermoplastic material	A4 Size
8.	Thread: Nylon /Polyester or Blend thread having ticket no 40 / 60, Colour: Black	1 Cone each
9.	Velcro –Nylon (Hook and Loop)	2 meter
10.	Loop- Metal	15 Nos
11.	PVC Sole / Full Shoe: Colour Black	5 Pairs
12.	Screening of Harmful Chemical substances	2 Pairs
Sample to be submitted separately for boys and girls		
<b>Duration for raw material and product testing for tender samples- 15 working days</b>		

**Pre-Inspection tests (To be conducted on product)**

S.No	Test to be conducted	Sample requirement
1	Thickness, mm Forepart /Heel /Cleat height	Five pairs of shoes (Sample to be submitted separately for boys and girls)
2	Hardness, Shore A	
3	Density, g/cc	
4	Flexing Resistance, Flexes ( Bata Belt method)	
5	Abrasion resistance,mm <sup>3</sup>	
6	Sole bond strength, N/mm	
7	Co-efficient of friction (COF)	
8	Attachment strength of strap and metal loop, N ( Girls shoe only)	
9	Peel strength, N/mm (Initial ) ( Girls shoe only)	
10	Shear strength, kPa ( Initial ) ( Girls shoe only)	
11	Lace breaking strength, N( Boys Shoe only)	
12	Lace to eyelet abrasion, cycles ( Boys shoe only)	
13	Harmful Chemical substance present in shoe	
<b>Duration of pre Inspection testing 10 working days</b>		

### **Post-Inspection tests (To be conducted on product)**

<b>S.No</b>	<b>Test to be conducted</b>	<b>Sample requirement</b>
1.	Whole shoe flexing , flexes	Three pairs of shoes (Sample to be submitted separately for boys and girls)
2.	Hardness, Shore A	
3.	Density, g/cc	
4.	Abrasion resistance,mm <sup>3</sup>	
5.	Sole bond strength, N/mm	
6.	Attachment strength of strap and metal loop, N ( Girls shoe only)	
7.	Peel strength, N/mm (Initial ) ( Girls shoe only)	
8.	Shear strength, kPa (Initial ) ( Girls shoe only)	
9.	Lace breaking strength, N( Boys Shoe only)	
10.	Harmful Chemical substance present in shoe	
<b>Duration of Post Inspection testing 6 working days</b>		

### **Sample collection procedure for pre inspection:**

Four pairs sample of every lot representing 10,000 pairs of shoes (boys & girls). Balance quantity, if anything above 5000 pairs, another sample will be collected for laboratory test

### **Sample collection for post inspection:**

Every pair of post delivered footwear received from TNTB& ESC for laboratory testing represents a lot of 20,000 pairs.

### **Manufacturing cost for PVC upper &PVC Outsole**

Approximately Rs. 160 to 175 for sizes 4 to 9
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### **Product Warranty:**

Manufacturer should mention the warranty period for the shoe supplied for about 6-8 months.

### **Packing:**

- ❖ Each pair of shoes shall be wrapped in tissue paper and put in a separate cardboard carton.
- ❖ Each carton shall be marked with the size and fitting of the shoes.

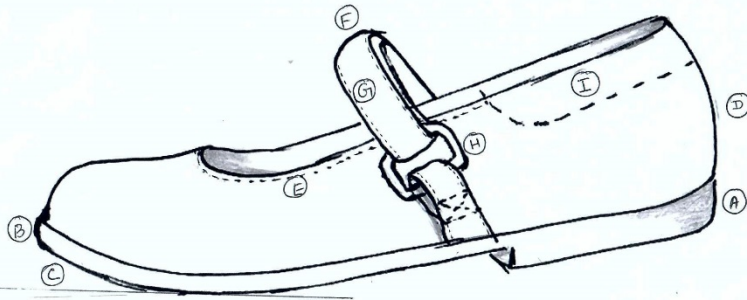
## MODEL SHOE

### Boys Oxford School Shoe



(Figure is for reference only)

### Girls School Shoe



(Figure is for reference only)

### Guideline for manufacturing – School shoes (Boys)

Reference	Boys School Shoes						
		Size 4	Size 5	Size 6	Size 7	Size 8	Size 9
A	Heel height, mm (minimum) Excluding sole wall thickness	20	20	20	20	20	20
B	Forepart thickness, mm (minimum) Excluding sole wall thickness	10	10	10	10	10	10
C	Toe spring, mm (minimum)	8	8	8	8	8	8
D	Back counter height, mm (minimum)	53	55	55	57	57	59
E	No. of Stitches per cm,	3-4	3-4	3-4	3-4	3-4	3-4
F	No. of Eyelets	4	4	5	5	5	5
G	Length of Lace –cm (Round lace), minimum	70	70	75	75	75	75
H	Collar Foam (width in mm)	15	15	15	15	15	15
I	Insole length (reference : IS 1638)	245.5	254.0	262.5	271.0	279.0	288.0
J	'G' Fitting Ball Girth (reference : IS 1638)	221.0	227.0	233.0	239.0	245.0	251.0

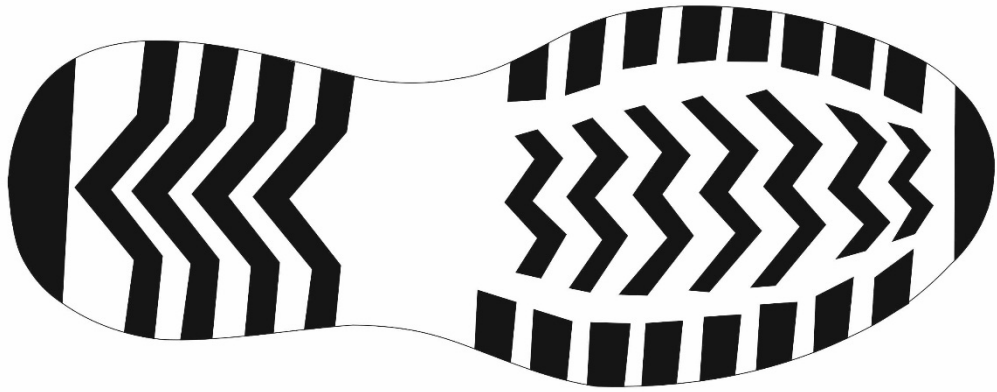
**Guideline for manufacturing – School shoes (Girls)**

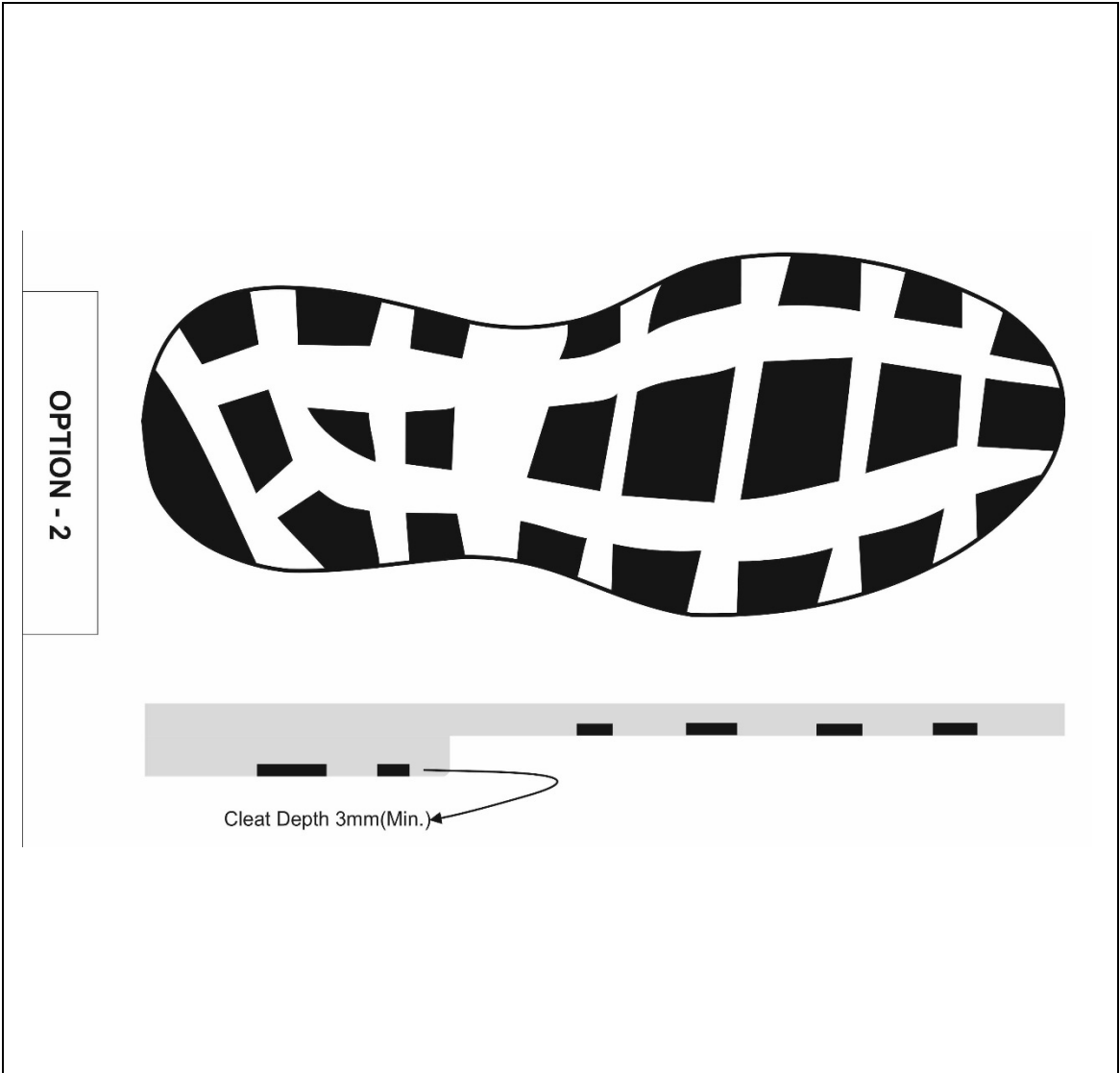
Reference	Girls School Shoes						
		Size 4	Size 5	Size 6	Size 7	Size 8	Size 9
A	Heel height, mm (minimum) Excluding sole wall thickness	20	20	20	20	20	20
B	Forepart thickness, mm (minimum) Excluding sole wall thickness	10	10	10	10	10	10
C	Toe spring, mm (minimum)	8	8	8	8	8	8
D	Back counter height, mm (minimum)	53	55	55	57	57	59
E	No. of Stitches per cm,	3-4	3-4	3-4	3-4	3-4	3-4
F	Strap width – mm	20	20	20	20	20	20
G	Velcro Width – mm	20	20	20	20	20	20
H	Metal loop (D – Ring) width mm	22	22	22	22	22	22
I	Insole length (reference : IS 1638)	245.5	254.0	262.5	271.0	279.0	288.0
J	'G' Fitting Ball Girth (reference : IS 1638)	221.0	227.0	233.0	239.0	245.0	251.0

# MODEL SOLE

## SCHOOL SHOE SOLE DESIGN FOR BOYS & GIRLS

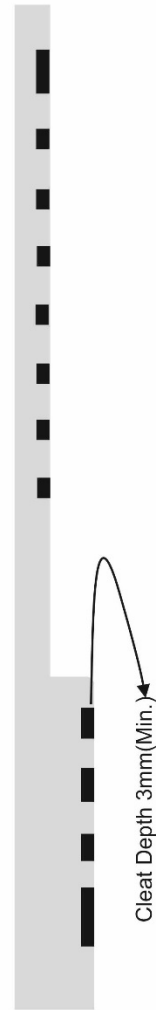
OPTION - 1





**MODEL SOLE**

**SCHOOL SHOE SOLE DESIGN FOR BOYS & GIRLS**



**OPTION - 3**



## Machineries requirement

<b>School shoes (PVC Upper &amp; PVC Sole)Boys</b>	<b>School shoes (PVC Upper &amp; PVC Sole)Girls</b>
<ol style="list-style-type: none"><li>1. Clicking machine</li><li>2. Sewing machine</li><li>3. Strobel sewing machine</li><li>4. Eyeleting machine</li><li>5. PVC Direct Injection machine (critical machine)</li></ol>	<ol style="list-style-type: none"><li>1. Clicking machine</li><li>2. Sewing machine</li><li>3. Binding machine</li><li>4. Strobel Sewing machine</li><li>5. PVC Direct Injection machine (critical machine)</li></ol>

# Critical machine means that machinery without which the process of shoe making cannot be completed.

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