

Pls find attached Revision 02 of Leather Safety Shoe for the year 2016. This is for your kind information and necessary action.

The following are the changes made and incorporated in Revision 2.

- 1.) Colour of the bottom sole (both densities) shall be black in colour . Clause 5.3
- 2.) Clause 4.3 removed
- 3.) Sketch corrected with the requirement "SOFT LEATHER LINING INSIDE ANKLE PORTION"
- 4.) A sentence added as "A soft leather lining shall be provided only in the ankle portion" in Clause 3.18.

BHEL:: BAP: RANIPET**TECHNICAL SPECIFICATION/CHECK-LIST FOR LEATHER SAFETY SHOE WITH DOUBLE DENSITY POLY-URETHANE SOLE**

Sl.No	DESIGN PARAMETER	TECHNICAL REQUIREMENT	VENDOR TO CONFIRM/SPECIFY/TEST CERTIFICATE REQMT	OFFERED	DEVIATION, if any.
1	APPEARANCE & DESIGN				
1.1	Design	Low Ankle Safety Shoe designed for maximum safety and comfort.	Vendor to confirm		
1.2	Weight	Weight of a pair of Size 8 shoe shall be 1000 grams (-50 grams/+25 grams)	Vendor to confirm		
2	PROCESS				
2.1	Manufacturing Process	Manufactured by Direct Injection Molding process without using nails.	Vendor to confirm		
3	UPPER LEATHER OF THE SHOE				
3.1	Material	Good quality grain leather (Cow/buffalo)	Vendor to confirm		
3.2	Colour	Brown	Vendor to confirm		
3.3	Thickness	1.5 mm to 1.8 mm	To confirm by Test Certificate		
3.4	Tensile Strength(minimum)	21 MPA or 210 kgf/cm ² (as per IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.5	Elongation at break	45 to 75% (as per IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.6	Stitch Tear Strength (min)	80 kg/cm thickness (IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.7	Distension and Strength of grain	Extension at Crack, min 7 mm and at bursting, min 10 mm (as per IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.8	Flexural Endurance (bally)	1,00,000 flexes without cracking of the grain (IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.13	Heat Resistance	To pass the test as in Appendix-A of IS-5677:1986 Clause 3.5	To confirm by Test Certificate		
3.14	Colour fastness to rubbing Crocking test -Dry test	Good (as per IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.15	Colour fastness to rubbing Crocking test-Wet test	Good (as per IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.16	Tongue Tear Resistance (min)	40 Kg /cm thickness (as per IS-5677:1986 Clause 3.5)	To confirm by Test Certificate		
3.9	Solvent extractable substances (% by mass)	3.0 to 7.0 (as per IS-5677:1986 Clause 3.6)	To confirm by Test Certificate		
3.10	Water soluble matter (% by mass),max	3.5 (as per IS-5677:1986 Clause 3.6)	To confirm by Test Certificate		
3.11	Chromium content as Cr ₂ O ₃ (%by mass), min	4.0 (as per IS-5677:1986 Clause 3.6)	To confirm by Test Certificate		
3.17	pH of water solubles	Not below 3.3 (as per IS-5677:1986 Clause 3.6)	To confirm by Test Certificate		
3.18	Upper shell lining	Inside of the upper shell shall be provided with good cushioning and cambrelle lining or textile lining as a sweat absorbing arrangement. A soft leather lining shall be provided only inside the ankle portion.	Vendor to confirm and specify the lining material		
4	INSOLE				
4.1	Material	Good Quality non-woven based material	Vendor to confirm and specify the lining material		
4.2	Thickness	minimum 3 mm (+/-0.2 mm)	To confirm by Test Certificate		
5	BOTTOM SOLE				
5.1	Material	Flexible Poly-urethane	Vendor to confirm		
5.2	Relative Density	Double Density	To confirm by Test Certificate		
5.3	Colour	Black (both densities)	Vendor to confirm		
5.4	Thickness	IS15298(Part2)2011 Clause 5.8.1	To confirm by Test Certificate		

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5.5	Tear Strength	IS15298(Part2)2011 Clause 5.8.2	To conform by Test Certificate		
5.6	Abrasion Resistance	IS15298(Part2)2011 Clause 5.8.3	To conform by Test Certificate		
5.7	Flexing Resistance	IS15298(Part2)2011 Clause 5.8.4	To conform by Test Certificate		
5.8	Hydrolysis Test	IS15298(Part2)2011 Clause 5.8.5	To conform by Test Certificate		
5.9	Inter layer bond strength	IS15298(Part2)2011 Clause 5.8.6	To conform by Test Certificate		
5.10	Resistance to fuel oil	IS15298(Part2)2011 Clause 5.8.7	To conform by Test Certificate		
5.11	Shore hardness	55 to 65 A	To conform by Test Certificate		
5.12	Anti-static (Electrical properties)	IS-15298(Part2)2011 Clause 6.2.2	To conform by Test Certificate		
5.13	Slip Resistance	IS-15298 Part-1:2015((ISO 20344:2011) Clause 5.11	To conform by Test Certificate		
6	TOE CAP				
6.1	Material	Steel	Vendor to confirm		
6.2	Shape and Dimension	Type 2 as per IS-5852:2004 Clause 5.1	To conform by Test Certificate		
6.3	Performance Test	shall retain a minimum clearance of 22 mm (as per Clause 5.2 of IS-5852:2004)	To conform by Test Certificate		
6.4	Finish	IS-5852:2004 Clause 5.3	To conform by Test Certificate		
6.5	Rust Prevention	Rust prevention required	To conform by Test Certificate		
7	THREAD				
7.1	Material	Kevlar of resistance to burn	Vendor to confirm		
7.2	Properties	2 twist, oil, acid, chemical proof, non-flammable	Vendor to confirm		
8	LACES				
8.1	Material	Cotton or Nylon	Vendor to specify		
8.2	Length	630 mm	Vendor to confirm		
8.3	Diameter	6 mm	Vendor to confirm		
9	EYELETS				
9.1	Material	Brass or Aluminium	Vendor to specify		
9.2	Inner diameter	to suit the lace diameter	Vendor to confirm		
9.3	Outer diameter	10 mm to 12 mm	Vendor to confirm		
9.4	Number of eyelets	3 nos on each side	Vendor to confirm		
10	DIMENSION	As per the drawing given.	Vendor to confirm		
11	SAMPLE	A pair of Size 8 shoe (Non-returnable) along with the offer.	Vendor to confirm		
12	TEST CERTIFICATE	Test certificate has to be obtained from CLRI or FDDI or any accredited laboratory of CLRI/FDDI. Test certificate has to be submitted along with sample and also during supply and it shall contain our Tender reference / PO No.	Vendor to confirm		
13	MARKING	Each shoe shall have the following identification marks (1) Size (2) Vendor's identity (3) Month & Year of Manufacturing (4) ISI marks (5) "Anti-Static" and Anti-Slip"	Vendor to confirm		
14	INSPECTION	Inspection will be carried out at your works with reference to the accepted sample and test report.	Vendor to confirm		

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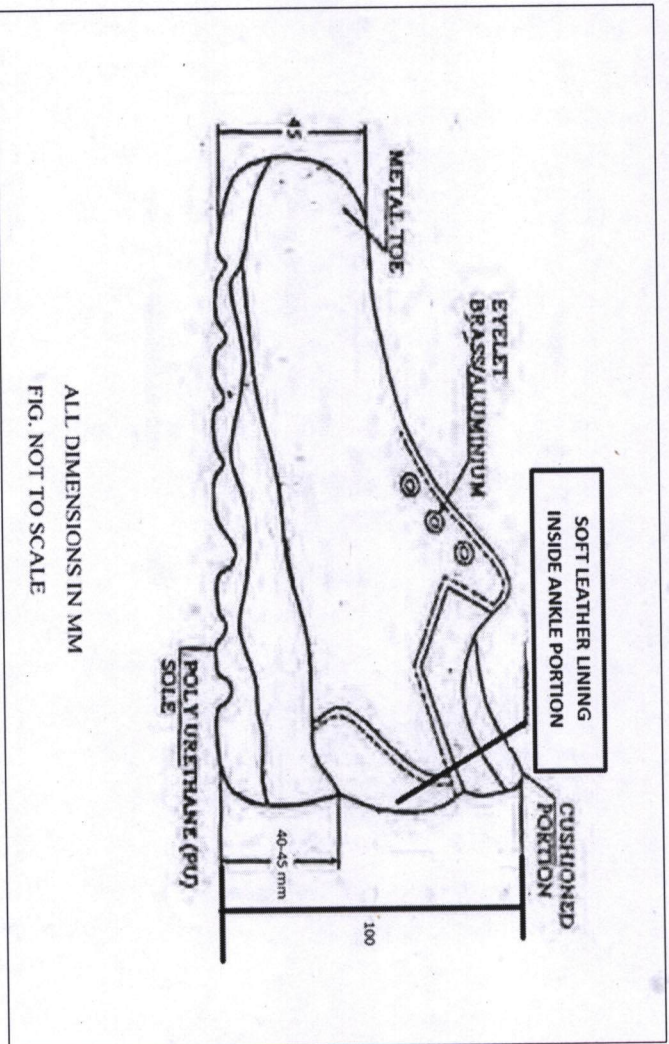
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15	PACKING	Good quality cardboard box, with one pair extra lace and a environment friendly carry bag. Separate indication/cover for identifying polycarbonate toe cap shoes.	Vendor to confirm		
16	GUARANTEE CERTIFICATE	Guarantee certificate has to be given for any manufacturing defects along with the consignment from the date of receipt at our Stores for free replacement within six months.	Vendor to confirm		



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