Laboratory	**TUV SUD South Asia Private Limited, 2nd Floor, Ambur Trade Centre, M.C. Road, Ambur, Tamil Nadu**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**TC-5488** ***(In lieu of T-1973 & T-1974)*** **Page 1 of 4**
Validity	**02.05.2017 to 01.05.2019** **Last Amended on --**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection

CHEMICAL TESTING

I.	**LEATHER**			
1.	**Leather & Its Products, Footwear**	Color Fastness to Crocking - Crock meter	ASTM D 5053-03	Qualitative Grade: 1 to 5
		Color Fastness to Rubbing - Veslic	ISO 17700 (Method A), ISO 11640	Qualitative Grade: 1 to 5
		Color Fastness to Perspiration	ISO 11641	Qualitative Grade: 1 to 5
			ISO 17700 (Method C)	
		Color Fastness to Water	ISO 11642	Qualitative Grade: 1 to 5
		Color fastness to Migration into PVC	ISO 15701	Qualitative Grade: 1 to 5
		Color Fastness to Water Spotting	ISO 15700	Qualitative Grade: 1 to 5

Amit Kumar
Convenor

N. Venkateswaran
Program Director

Laboratory	**TUV SUD South Asia Private Limited, 2nd Floor, Ambur Trade Centre, M.C. Road, Ambur, Tamil Nadu**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Certificate Number	**TC-5488** ***(In lieu of T-1973 & T-1974)***	**Page 2 of 4**	
Validity	**02.05.2017 to 01.05.2019**	**Last Amended on --**	

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection

MECHANICAL TESTING

I.	**LEATHER AND LEATHER PRODUCTS**			
1.	**Leather & Its Products, Footwear**	Breaking Strength (Grab)	ASTM D 2208	10 N to 2500 N
		Elongation	ASTM D 2211	0 to 500 %
		Tensile strength Elongation	NF EN 13522	1 N/mm² to 150 N/mm² 0 to 500 %
		Tensile strength/Elongation	ISO 20344	
			ISO 3376	
		Tensile Strength	ASTM D 2209	
		Tear strength(Silt)	ASTM D 2212	10 N to 1000 N
		Tear strength (single edge)	ASTM D 4704 NF EN 13571 ISO 3377 – 1	
		Tear strength (Double edge)	ISO 20344 ISO 3377 -2	
		Adhesion of Finish	ISO 11644	0.5 to 100 N/10mm
		Heel Attachment Strength	SATRA TM 113	10 to 2000 N
		Top Piece Attachment Strength	BS 5131 - 5.9	10 N to 2000 N
		Strength of Buckle Fastening Assemblies	BS 5131 Section 5.11	10 N to 2500 N
		Breaking Strength of Laces	BS 5131 Section 3.7	10 N to 2000 N
		Sole Bond Peeling Strength	BS 5131 Section 5.4	1 N/mm to 100 N/mm
			ISO 20344	
			ISO 17708	
		Adhesion of Stuck-On	BS 5131 Section 5.1	Qualitative

Laboratory **TUV SUD South Asia Private Limited, 2nd Floor, Ambur Trade Centre, M.C. Road, Ambur, Tamil Nadu**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-5488** ***(In lieu of T-1973 & T-1974)*** **Page 3 of 4**

Validity **02.05.2017 to 01.05.2019** **Last Amended on --**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		and Moulded-On Soles – Toe/Heel		1 kg to 100 kg
		Bursting Strength(Ball) / Grain Crack	ISO 3379	0 .1 kg to 80 kg 0.1 mm to 15 mm
		Upper Flexing Resistance – Bally Method	ASTM D 6182	Qualitative (1 to 999999 Cycles)
			ISO 5402-1	
			NF EN 13512	
			ISO 20344	
		Water Penetration – Bally Penetrometer Method	ISO 5403-1	10 minutes- 24 hours 0.1 % to 300 %
			ISO 20344	
		Water Penetration – Maeser Method	ASTM D 2099	1 to 999999 Cycles 0.1 % to 300 %
			ISO 5403-2	
		Water Vapour Permeability	ISO 14268	0.1 mg/cm²/hr to 50 mg/cm²/hr
			ISO 17699	
			ISO 20344	
			BS EN 13515	
		Water Vapour Absorption	ISO 17699	0.1 mg/cm² to 100 mg/cm²
			ISO 20344	
			BS EN 13515	
		Water Vapour Coefficient / Number	ISO 14268	Qualitative (0.1 to 500)
			ISO 20344	
		Sole Abrasion Resistance – Drum Method	ASTM D 5963-04	Qualitative 1 mm^3 to 900 mm^3
			BS 903 A9 Method A	
			ISO 4649, NF EN 12770	
		Abrasion Resistance – Martindale Method	NF EN 13520	Qualitative (1 to 999999 Cycles)
			ISO 20344	
		Abrasion Resistance of Shoe Laces	BS 5131 Section 3.6	Qualitative (1 to 999999 Cycles)

Amit Kumar
Convenor

N. Venkateswaran
Program Director

Laboratory	**TUV SUD South Asia Private Limited, 2nd Floor, Ambur Trade Centre, M.C. Road, Ambur, Tamil Nadu**	
Accreditation Standard	**ISO/IEC 17025: 2005**	
Certificate Number	**TC-5488** ***(In lieu of T-1973 & T-1974)***	**Page 4 of 4**
Validity	**02.05.2017 to 01.05.2019**	**Last Amended on --**

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Whole Shoe Flexing	SATRA TM 92	Qualitative (1 to 999999 Cycles)
		Whole Shoe Water Penetration	SATRA TM 77	Qualitative (1 to 999999 Cycles)
		Sole Flexing – Bennewart	DIN 53543	Qualitative (1 to 999999 Cycles) 0.1 to 10 mm
			ISO 17707, ISO 20344	
		Heat stability / Dry Heat Resistance of Leather	ISO 17227	Qualitative 0.5 % to 50 %
		Resistance to Ageing	DIN EN 12749	Qualitative
		Break/Pipiness	ASTM D 2941	0 to 8
			BS 5131 Section 3.5	
		Grain Crack Resistance (Leather Sole)	ASTM D 6075	4.5 to 68
			ISO 3378	
		Density	ISO 2781 (Method - A)	0.1 mg/m^3 to 5 mg/m^3
		Hardness (Shore A)	ASTM D 2240, DIN 53505	10 to 90
			ISO 868	
		Thickness	ASTM D 1813, ISO 2589	0.1 mm to 8 mm
		Footwear Last Size and Fit Measurements for Footwear Fit Mark	LAB_P(L)_SOP_004	0.1 mm to 380 mm
		Closed Type of Footwear Size and Fit Measurements for Footwear Fit Mark	LAB_P(L)_SOP_005	0.1 mm to 380 mm
		Open Type of Footwear Size and Fit Measurements for Footwear Fit Mark	ISO 9407	0.1 mm to 380 mm
2.	**Leather & its Products, Footwear & Leather**	Stitch Tear Strength	ASTM D 4705	10 N to 1000 N
		Needle Perforations	NF EN 13572 (Method A)	1 N/mm to 100 N/mm
		Seam Strength	BS 5131 Section 5.13	1 N/mm to 100 N/mm
			NF EN 13572 (Method B)	

Amit Kumar
Convenor

N. Venkateswaran
Program Director