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**Accreditation No: LAB 022**

**Awarded to**

**Textile Testing International**  
**A division of Total Testing Solutions Inc.**  
**347-S, Quaid-e-Azam Industrial Estate, Kot Lakhpat, Lahore-54770**  
**Pakistan**

The scope of accreditation is in accordance with the standard specifications outlined in the following page(s) of this document. The accredited scope shall be visible and legible in areas such as customer service, sample-receiving section etc and shall not mislead its users.

The accreditation was first time granted on **13-05-2006** by Pakistan National Accreditation Council.

The laboratory complies with the requirements of **ISO/IEC 17025:2005**.

The accreditation requires regular surveillance, and is valid until **08-08-2021**.

The decision of accreditation made by Pakistan National Accreditation Council implies that the organization has been found to fulfill the requirements for accreditation within the scope.

The organization however, itself is responsible for the results of performed measurements/tests.

**PAKISTAN NATIONAL ACCREDITATION COUNCIL**

30-12-2019  
Date

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Director General

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### Testing Laboratory.

Accreditation Scope of Textile Testing International, a division of “Total Testing Solutions Inc.”, 347-S, Quaid-e-Azam Industrial Estate, Kot Lakhpat, Lahore-54770.

Permanent laboratory premises

Materials/Products tested	Testing field (e.g. environmental testing or mechanical testing)	Types of test/ Properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/ Internal method reference
<b>Textiles</b>	Physical	Yarn number by skein method (Yarn count)	ASTM D1907/D1907M-12
	Physical	Twist in yarn (TPI)	ASTM D1422/D1422M-13
	Physical	Yarn strength	ASTM D2256/D2256M-10 (2015) ISO 2062 : 2009
	Physical	Warp & weft count (Ends /picks)	ASTM D3775-17 BS EN 1049-2:1994 ISO 7211-2:1984
	Physical	Mass per unit area	ASTM D3776/D3776M-09a (2017) BS EN 12127:1998
	Physical	Yarn number - short length specimen	ASTM D1059-17
	Physical	Abrasion Resistance - Martindale a) Specimen break down b) Mass loss c) Appearance change	ASTM D4966-12 (2016) BS EN ISO 12947-1:1998 BS EN ISO 12947-2:2016 BS EN ISO 12947-3:1998 BS EN ISO 12947-4:1998
	Physical	Pilling resistance (Martindale)	ASTM D4970/D4970M-16 BS EN ISO 12945-2:2000
	Physical	Pilling resistance (Random tumble)	ASTM D3512/D3512M-16
	Physical	Pilling resistance (ICI pilling)	BS EN ISO 12945-1:2001 EN ISO 12945-1:2000 ISO 12945-1:2000

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<b>Textiles</b>	Physical	Bursting strength	ASTM D3786/D3786M-18 BS EN ISO 13938-1:1999
	Physical	Tear strength (Elmendorf)	ASTM D1424-09 (2013) BS EN ISO 13937-1:2000
	Physical	Tear strength (Tongue-single rip)	ASTM D2261-13 (2017) ISO 13937-2:2000
	Physical	Tear strength (Wing shaped)	BS EN ISO 13937-3:2000
	Physical	Tensile strength	ASTM D5034-09 (2017) ASTM D5035-11 (2015) BS EN ISO 13934-1:2013 BS EN ISO 13934-2:2014
	Physical	Seam slippage	ISO 13936-1:2004 ISO 13936-2:2004
	Physical	Failure in sewn seams	ASTM D1683/D1683M-17 (2018)
	Physical	Stretch properties of fabrics woven from stretch yarns	ASTM D3107-07 (2019)
	Physical	Stiffness of fabrics by the circular bend procedure	ASTM D4032-08 (2016)
	Physical	Flammability of apparel & clothing textiles	ASTM D1230-17 16 CFR 1610
	Physical	Water repellency: spray test	AATCC 22:2017 BS EN ISO 4920:2012
	Physical	Absorbency of textiles	AATCC 79-2018
	Physical	Oil repellency: hydrocarbon resistance Test	AATCC 118:2013
	Physical	Soil release: oily stain release method	AATCC 130:2018
	Physical	Vertical Wicking	AATCC 197:2018

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<b>Textiles</b>	Physical	Colorfastness to crocking / rubbing	AATCC 8:2016 ISO 105-X12:2016
	Physical	Color fastness to perspiration	AATCC 15:2013 ISO 105-E04:2013
	Physical	Color fastness to light (Xenon arc)	AATCC 16.3:2014 ISO 105-B02:2014
	Physical	Color fastness to laundering: accelerated	AATCC 61:2013 ISO 105-C10:2006 ISO 105-C06:2010
	Physical	Color fastness to water spotting	AATCC 104:2014 ISO 105-E07:2010
	Physical	Color fastness to sea water	AATCC 106:2013 ISO 105-E02:2013
	Physical	Color fastness to water	AATCC 107:2013 ISO 105-E01:2013
	Physical	Color fastness to dry cleaning	AATCC 132:2013 ISO 105-D01:2010
	Physical	Color fastness to non-chlorine bleach in home laundering	AATCC 172:2016
	Physical	Color fastness to sodium hypochlorite bleach in home laundering	AATCC 188:2017
	Physical	Color fastness to chlorine bleach (Spot test)	AATCC TS-001
	Physical	Color fastness to non-chlorine bleach (Spot & Soaking)	AATCC TS-001
	Physical	Color fastness to phenolic yellowing	ISO 105X-18:2007
	Physical	Dimensional changes after home laundering	AATCC 135:2018 (Modified) AATCC 150:2018 (Modified) BS EN ISO 3759:2011 BS EN ISO 5077:2008 BS EN ISO 6330:2012
Physical	Appearance after home laundering	AATCC 143-2018 ISO 15487:2018	

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<b>Textiles</b>	Physical	Skewness changes/garment twisting	AATCC 179-2019
	Physical	Bow and skew in woven and knitted fabrics	ASTM D 3882-08 (2016)
	Physical	Spirality after laundering	ISO 16322-1:2005 ISO 16322-2:2005 ISO 16322-3:2005
	Chemical	Fiber analysis: Qualitative	AATCC 20-2018
	Chemical	Fiber analysis: Quantitative	AATCC 20A-2018 ISO 1833-1:2006 ISO 1833-2:2006 ISO 1833-3:2006 ISO 1833-4:2006 ISO 1833-6:2007 ISO 1833-7:2006 ISO 1833-8:2006 ISO 1833-10:2006 ISO 1833-11:2006 ISO 1833-12:2006 ISO 1833-16:2006
	Chemical	pH	AATCC 81-2016 ISO 3071:2005
	Chemical	Formaldehyde	AATCC 112-2014 BS EN ISO 14184-1:2011 BS EN ISO 14184-2:2011
	Chemical	Aromatic amines from azo colorants	BS EN ISO 14362-1:2017 BS EN ISO 14362-3:2017
	Chemical	Phthalate content-Tetrahydrofuran method	ISO 14389:2014 CPSC-CH-C1001-09.4
	Chemical	Extractable heavy metals from fabrics	DIN EN 16711-2:2016
<b>Textile/Leather</b>	Chemical	Chlorinated phenols	LFGB B 82.02-8
<b>Metals</b>	Chemical	Nickel release	BS EN 1811:2011+A1:2015

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<b>Metal Products</b>	Chemical	Total lead in children's metal products (including jewelry)	CPSC-CH-E1001-08.3 Acid Digestion Method (ICP-OES / AAS)
<b>Non-Metal Products</b>	Chemical	Total lead in children's non-metal products	CPSC-CH-E1002-08.3 Acid Digestion Method (ICP-OES / AAS)
<b>Paint / Surface Coating</b>	Chemical	Lead in paint & surface coatings	CPSC-CH-E1003-09.1 Acid Digestion Method (ICP-OES / AAS) 16 CFR 1303
<b>Plastics</b>	Chemical	Cadmium content	BS EN 1122:2001
<b>Toys</b>	Chemical	Migration of certain elements	BS EN 71-3:2019
<b>Toys</b>	Physical	Torque test, Tension test, Sharp Point, Sharp edge, Small parts	ASTM F 963-2017 16 CFR 1500.50, 51, 53 16 CFR 1500.48, 16 CFR 1500.49 16 CFR 1501
<b>Leather/Footwear /Gloves</b>	Physical	Abrasion resistance	BS EN 388:2016 (6.1)
	Physical	Blade cut resistance	BS EN 388:2016 (6.2) ISO 13997:1999 ASTM F 2892-15
	Physical	Tear resistance	BS EN 388:2016 (6.3)
	Physical	Puncture resistance	EN 388:2016 (6.4)
	Physical	Anti-static properties	BS EN 344, ISO 20344:2011
	Physical	Toe impact test	EN ISO 20344:2011
	Physical	Glove sizing, Dexterity/ Protective gloves-general requirements and test methods	BS EN 420:2003+A1:2009
	Physical	Thickness	ISO 2589:2016 (IULTCS/IUP 4), SLP 4
	Physical	Tensile strength & percentage extension	ISO 3376:2011 (IULTCS/IUP 6), SLP 6
	Physical	Tear load (Single edge tear)	ISO 3377-1:2011 (IULTCS/IUP 40-1), SLP 40
	Physical	Tear load (Double edge tear)	ISO 3377-2:2016 (IULTCS /IUP 8), SLP 7

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<b>Leather/Footwear /Gloves</b>	Physical	Distension and strength of surface (Ball burst method)	ISO 3379:2015 (IULTCS/IUP 9)
	Physical	Abrasion resistance using a rotating cylindrical drum device	ISO 4649:2017
	Physical	Water resistance of flexible leather	ISO 5403-1:2011 (IULTCS/IUP 10-1)
	Physical	Flex resistance - Flexometer method	ISO 5402-1:2017 (IULTCS/IUP 20) SATRA TM 55
	Physical	Flex resistance - Vamp flex method	ISO 5402-2:2015 SATRA TM 25
	Physical	Water vapor absorption	EN 420:2003+A1:2009 ISO 20344:2011
	Physical	Water vapor permeability	ISO 14268:2012 (IULTCS/IUP 15) ISO 20344:2011 EN 420:2003+ A1:2009
	Physical	Softness	ISO 17235:2015 (IULTCS/IUP 36)
	Physical	Abrasion resistance	ISO 17704:2004 ISO 20344:2011
	Physical	Out Sole Flex resistance	ISO 17707:2005 ISO 20344:2011
	Physical	Resistance of footwear to flexing	SATRA TM 92
	Physical	Rapid Sole adhesion test	BS 5131:1990 SATRA 404
	Physical	Color fastness to light	ISO 105 B02:2014 SATRA TM 160
	Physical	Color fastness to cycles of to-and-fro rubbing	ISO 11640:2018 (IULTCS/IUF 450) SATRA TM 167
	Physical	Color fastness to perspiration	ISO 11641:2012 (IULTCS/IUF 426)
	Physical	Color fastness to water	ISO 11642:2012 (IULTCS/IUF 421)
	Physical	Color fastness of small samples to solvents	ISO 11643:2009 (IULTCS/IUF 434) SLF 434
	Physical	Color fastness to water spotting	ISO 15700:1998 (IULTCS/IUF 420)
	Physical	Color fastness to migration into polymeric material	ISO 15701:2015 IUF 442

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	Physical	Color fastness to machine washing	ISO 15702:1998 (IULTCS/IUF 435)
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<b>Leather/Footwear /Gloves</b>	Physical	Color fastness to mild washing	ISO 15703:1998 (IULTCS/IUF 423)
	Physical	Color fastness to crocking	ISO 20433:2012 (IULTCS/IUF 452) SLF 452
	Physical	Colour fastness to Water or perspiration	SATRA TM 335
	Chemical	pH	EN ISO 4045:2018 (IULTCS/IUC 11), SLC 13, EN 420, ISO 20344
	Chemical	Chromic oxide content	ISO 5398-3:2018 (IULTCS/IUC 8-3)
	Chemical	Organotin	ISO/TS 16179:2012
	Chemical	Dimethyl fumarate (DMFu)	ISO/TS 16186:2012
	Chemical	Dimethyl formamide (DMFa)	ISO/TS 16189:2013
	Chemical	Chlorinated phenols	ISO 17070:2015 (IULTCS/IUC 25)
	Chemical	Extractable metals	ISO 17072-1:2019 (IULTCS/IUC27-1)
	Chemical	Total metal contents	ISO 17072-2:2019 (IULTCS/IUC 27-2)
	Chemical	Chromium (VI) content	ISO 17075-1,3:2017, (IULTCS/IUC 18-1), SLC 22, EN 420, ISO 20344
	Chemical	Formaldehyde (Spot Test)	Lab Developed Method
	Chemical	Formaldehyde content (HPLC method)	ISO 17226-1:2018 (IULTCS/IUC 19-1)
	Chemical	Formaldehyde content (colorimetric method)	ISO 17226-2:2008 (IULTCS/IUC 19-2), SLC 23
	Chemical	Aromatic amines from azo colorants	ISO 17234-1:2015 (IULTCS/IUC 20-1) ISO 17234-2:2011 (IULTCS/IUC 20-2)

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<b>Petroleum Products</b>	Chemical	Flash & fire points - Cleveland open cup	ASTM D 92-18
	Chemical	Flash point - Pensky-Martens closed cup	ASTM D 93-18
	Chemical	Kinematic viscosity	ASTM D 445-18
<b>Petroleum Products</b>	Chemical	Acid number	ASTM D 974-14
	Chemical	Base number	ASTM D 2896-15
<b>Water/Waste Water</b>	Chemical	pH	APHA 4500 H <sup>+</sup> B
	Chemical	Conductivity	APHA 2510 B
	Chemical	Hardness	APHA 2340 C
	Chemical	Alkalinity	APHA 2320 B
	Chemical	Chloride	APHA 4500 Cl <sup>-</sup> B
	Chemical	Heavy Metals (Pb, Cd, Hg, As, Sb, Fe, Ni, Cu, Cr, Mn, Zn)	APHA 3030, 3111, 3120 (ICP-OES, FAAS)
<b>Soil</b>	Chemical	Total heavy metals	EPA 3052

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