

<b>Laboratory</b>	<b>Northern India Textile Research Association, Sec-23, Raj Nagar, Ghaziabad, Uttar Pradesh</b>		
<b>Accreditation Standard</b>	<b>ISO/IEC 17025: 2005</b>		
<b>Discipline</b>	<b>Mechanical Testing</b>	<b>Issue Date</b>	<b>04.10.2016</b>
<b>Certificate Number</b>	<b>T-0853</b>	<b>Valid Until</b>	<b>03.10.2018</b>
<b>Last Amended on</b>	<b>09.12.2016</b>	<b>Page</b>	<b>1 of 4</b>

<b>S. No.</b>	<b>Product / Material of Test</b>	<b>Specific Test Performed</b>	<b>Test Method Specification against which tests are performed</b>	<b>Range of Testing / Limits of Detection</b>
<b>I.</b>	<b>TEXTILE MATERIAL</b>			
<b>1.</b>	<b>Fiber</b>	Length (Cotton)	IS 233 (Part 4): 1978 Amd. 1 & 2 ASTM D-5867 -2012	7 mm to 50 mm 7 mm to 50 mm
		Uniformity Ratio (Cotton)	IS 233 (Part 4): 1978 Amd. 1 & 2 ASTM D-5867-2012	30 % to 70 % 30 % to 80 %
		Strength (Cotton)	IS 3675: 1966 Amd. 1 & 2 ASTM D-5867-2012	5 g/tex to 50 g/tex 5 g/tex to 50 g/tex
		Elongation (Cotton)	ASTM D-5867-2012	2.0 % to 20 %
		Cotton Fineness (Micronair value)	ASTM D-5867-2012 IS 3674: 1966	2.0 to 8.5 microgram/inch (µg/inch) 2.0 to 8.5 (microgram/inch)
		Maturity coefficient (Cotton)	IS 236: 1968	0.4 to 1.0 Mature fibre % - 20 to 90 Half Mature fibre % -10 to 50 Immature fibre % - 10 to 50
		Trash (Cotton)	IS 4871: 1968	0.1 % to 30 %
		Diameter (Wool Fiber)	IS 744: 2000	15 micron to 40 micron
		Fiber Length (Manmade Fiber)	BISFA-1972 IS 10014 (Pt-1): 1984 Amd. 1	5.0 mm to 300 mm

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	<b>Fiber</b>	Fiber Denier (Manmade Fiber)	IS 10014 (Pt-2): 1981 (RA 1999) Amd. 1, 2 and 3	0.5 den to 200 den
		Fiber Tenacity (Manmade Fiber)	ASTM D-3822-14	2 g/den. to 300 g/den.
<b>2.</b>	<b>Yarn</b>	Linear density	IS 1315: 1977 Amd. 1	1.0 NeC to 130 NeC
		Lea Strength	IS 1671: 1977	18.1 kgf to 190.9 kgf (40 lb to 420 lb)
		Single Thread Strength	IS 1670: 1991 ASTM D-2256/2256 M:2010	1 N to 100 N (100 g to 10,000 g) 1 N to 100 N (100 g to 10,000 g)
		Single Thread Elongation % (Gauge length) 500mm	IS 1670: 1991 ASTM D 2256/2256M : 2010	2.0 % to 100 % 2.0 % to 100 %
		Unevenness	ASTM D-1425/1425M-2009	4 % to 30 %
		Twist of Single Yarn	IS 832 (Pt 2) :2011 ISO 2061: 1995 ASTM D-1422/1422M:2013	200 TPM to 2000 TPM (5 TPI to 50 TPI) 200 TPM to 2000 TPM (5 TPI to 50 TPI)
		Twist of Double Yarn	IS 832 (Pt 1): 2011 ISO 2061 :1995 ASTM D-1423-2002 (RA 2008)	200 TPM to 2000 TPM (5 TPI to 50 TPI) 200 TPM to 2000 TPM (5 TPI to 50 TPI)

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3.	Fabric	Width	IS 1954: 1990 (RA 2002)	10 cm to 200 cm
		Ends/Picks	IS 1963: 1981 (RA 2004)	5 cm to 100 cm
		Mass per unit area/ unit length	IS 1964: 2001 Method-A	30 GSM to 3000 GSM
		Thickness	IS 7702: 2012	0.1 mm to 10 mm
		Tensile Strength	IS 1969 (Part 1): 2010	(50 N to 4000 N) 5 Kg to 400 Kg
		Elongation at break	IS 1969 (Part 1): 2010	1 % to 100 %
		Tear Strength	IS 6489: 1993 (RA 1999)	0.5 Kg to 12 Kg (5 N to 120 N)
		Bursting Strength	IS 1966 (Part 1): 2009	1 Kg/cm <sup>2</sup> to 31 Kg/cm <sup>2</sup> (100 kPa to 3000 kPa)
		Resistance to Pilling (Pill Box Method)	IS 10971 (Pt 1): 2011 ISO 12945-1: 2000	(1 to 5) Grade
Resistance to Pilling (Modified Martindale Method)	IS 10971 (Pt 2): 2011 ISO 12945-2 :2000 ASTM D-4970/4970M-2010	(1 to 5) Grade		

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<b>II. LEATHER &amp; LEATHER PRODUCTS</b>				
1.	Leather	Tensile Strength	IS 5914: 1970 (RA 2014)	20 Kg/cm <sup>2</sup> to 400 Kg/cm <sup>2</sup> 200 N/cm <sup>2</sup> to 4000 N/cm <sup>2</sup>
		Elongation at break %	IS 5914: 1970 (RA 2014)	10 % to 100 %
		Thickness	IS 5914: 1970 (RA 2014)	0.1 mm to 10 mm

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