Laboratory	**The Synthetic and Art Silk Mills Research Association (Sasmira), Sasmira Marg, Worli, Mumbai, Maharashtra**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Mechanical Testing**	**Issue Date**	**27.11.2015**
Certificate Number	**T-0763**	**Valid Until**	**26.11.2017**
Last Amended on	**-**	**Page**	**1 of 5**

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I.	**TEXTILE MATERIALS**			
1.	**Fibers**	Staple length for manmade fibres	IS 10014 (Part 1): 1984 (RA 2004) Method A	10 mm to 300 mm.
		Staple length of Fiber	ASTM D 5103: 2012	10 mm to 300 mm
		Linear density of single fibres	ASTM D 1577: 2012 Option C	0.27 D to 9 D
		Tensile strength of single fibre	ASTM D 3822/D3822M: 14 ISO 5079: 96	1 g to 500 g
		Tensile strength of fiber	IS 235: 1989 (RA 2000)	1 g to 500 g
		Crimp frequency of staple fibre	ASTM D 3937: 2012 Option 1	Upto 5 crimps/cm.
2.	**Yarn**	Linear density of yarns	IS 1315: 1977 (RA 1999) IS 7703 (Part 1) (RA2002) ASTM D 1907/D1907M: 12 ISO 2060: 95	50 D to 1000 D (10 Ne to 100 Ne)
		Count of yarn removed from fabrics	IS 3442: 1980 (RA 2004) ASTM D 1059-01/ ASTM ISO 7211-5: 84	5 Ne to 150 Ne 35 D to 1000 D
		Crimp of yarn removed from fabrics	IS 3442: 1980 (RA 2004) ISO 7211-3: 84	0.5 % to 100 %
		Twist in yarn	IS 832 (Part 1& Part 2): 1985 (RA 2011) ASTM D 1423: 08	400 TPM to 4000 TPM 10 TPI to 100 TPI

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	Yarn	Twist of yarn removed from the fabric	ASTM D 1422/ D1422M: 13 ISO 7211-4: 84	400 TPM to 4000 TPM 10 TPI to 100 TPI
		Single yarn- breaking load And elongation at break	IS 1670: 1991 (RA 2002) ASTM D 2256 / D2256M: 10	1 N to 100 N 1 % to 100 %
		Breaking strength of filament yarn (single yarn)	IS 7703 (Part 2): 1990 (RA 2002)	1 N to 100 N
		Lea strength of yarns spun on cotton system (CSP)	IS 1671: 1977 (RA 2004)	200 N to 1800 N (45 lbf to 400 lbf)
3.	**Fabrics**	Breaking load and elongation of woven textile fabrics	IS 1969 (Part 1): 1985 (RA 2009) ASTM D 5035-11 ISO 13934-1: 2013	0.1 KN to 50 KN 5 % to 100 %
		Puncture resistance Index CBR	ASTM D 4833: 07 ASTM D 6241: 09 ISO 12236: 06	10 N to 10 kN
		Pilling resistance of fabrics	IS 10971 (Part 1): 1984 (RA 2011)	Qualitative (Grade 1 to 5)
		Length and width of woven fabrics	IS 1954: 1990 (RA 2002) ASTM D 3774: 2012 ISO 22198: 06 ASTM D 1907/D1907M: 12 ISO 2060: 95	1 cm to 200 cm
		Thickness of woven and knitted fabrics	IS 7702: 1975 (RA 2012) ASTM D1777 (RA 2011)	0.1 mm to 4 mm.

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	Fabrics	Mass per unit length and mass per unit area in woven fabrics	IS 1964: 2006 Method A ASTM D 3776 D3776M: 2013 Option C ISO 7211-6: 84 Method A	20 gsm to 2000 gsm
		Threads per unit length in woven fabrics	IS 1963: 1981 (RA 2004) ASTM D 3775: 12 ISO 7211-2: 84	10 /cm to 250 /cm (25 /inch to 635 /inch)
		Recovery from creasing of textile fabrics	IS 4681: 1981 (RA 2004)	20° to 160°
		Stiffness (Bending Length)	ASTM D 1388: 14 Option A	0.1 cm to 8 cm
		Grab Strength	ASTM D 5034: 2013 ISO 13934-2: 14	100 N to 2000 N
		Tear Strength – Single Rip	ASTM D 2261: 13 ISO 13937-2: 2000 ASTM D 5733: 95	100 N to 1000 N
		Failure in Sewn Seams of Woven Fabrics	ASTM D 1683: 11a	10 N to 1000 N
		Seam Slippage and Seam Strength	ISO 13936-1: 2004 ISO 13935-2: 2014	10 N to 1000 N
		Bursting Strength and Bursting Distension of Fabrics: Diaphragm Method	IS 1966 (Part 1): 1975(2009) ASTM D 3786 /3786M: 13 ISO 13938-1: 1999	5 kg/cm^2 to 60 kg/cm^2
		Drape Coefficient	IS 8357: 1977 (RA 2004)	Upto 100%

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4.	**Nonwovens**	Tensile Strength(Grab Method)	ISO 9073-18: 2007	100 N to 1000 N
5.	**Fabric / Coated Fabric**	Width of Coated Fabric	IS 7016 (Part 1): 1982 (RA 2008)	1 cm to 200 cm
		GSM of Coated Fabric	IS 7016 (Part 1): 1982 (RA 2008)	20 gsm to 2000 gsm
		Breaking Strength and Elongation of Coated Fabric in Newtons (N) (Strip Test)	IS 7016 (Part 2): 1981 (RA 2008)	10 N to 5000 N 1 % to 100 %
		Tearing Strength(Tongue Tear) of Coated Fabric in Newtons (N)	IS 7016 (Part 3): 1981 (RA 2008) Method A1	10 N to 2500 N
		Tearing Strength(Single Rip) of Coated Fabric in Newtons (N)	IS 7016 (Part 3): 1981 (RA 2008) Method A2	10 N to 2500 N
		Resistance to flexing	IS 7016 (Part 4): 1981 (RA 2008) Method B	Qualitative (Grading Scale 0 to 3)
6.	**Fabric / Wovens**	Air Permeability	ASTM D 737: 12 ISO 9237: 95	50 l/dm^2/min to 1500 l/dm^2/min
7.	**Fabirc / Non Woven**	Air Permeability	ISO 9073-15: 07	
8.	**Fabric / Technical Textile**	Abrasion Resistance (Martindale)	ASTM D 4966: 12 ISO 12947 (Part 1 to 4): 2002	Upto1,00,000 Cycles
		Taber Abrasion Resistance	ASTM D 3884: 13	Qualitative (Grade 1 to 5) Cycles 50 to 9999

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	Fabric / Technical Textile	Apparent Opening Size	ASTM D 4751: 12	75 µ to 850 µ
		Thermal Resistance	ASTM D 1518: 14	1 Tog to 12 Tog
		Breaking Strength By Wide Width Method % Elongation	ASTM D 4595: 11 ISO 10319: 08	200 N to 1500 N 10 % to 100 %
		Tensile Strength (Grab Method) Elongation	ASTM D 4632: 08	100 N to 1000 N
		GSM of Geotextile	ASTM D 5261: 10	20gsm to 2000 gsm
		Trapezoid Tear Strength	ASTM D 4533: 11	100 N to 1000 N
9.	**Rope**	Breaking Strength of Rope	IS 7071 (Part 4): 1986 (RA 2004) (Method A & B)	500 N to 100 kN

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