

NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION, GHAZIABAD
CHEMICAL QUALITY EVALUATION (CQE) LABORATORY

S. No.	Nature of Test (Test Parameter)	Commonly used Test Method
(A) Colour Fastness to		
1.	i) Light (Xenon Arc) - Upto 20 FDU	IS: 2454, ISO 105-B02, DIN 54004, BS-1006, AATCC-16H
	ii) Light (Xenon Arc)	ISO 105-B04
2.	i) Washing (Laundering)	IS/ISO 105 C10 A(1), B(2), C(3), D (4) and E(5), AATCC-61
	ii) Washing (Laundering)	IS/ISO 105 C10 (After 04 washing)
	iii) Washing (Laundering)	ISO 105 CO6, AATCC-61 (1A to 5A)
3.	Crocking/ Rubbing (Dry & Wet)	IS : 766, ISO 105 -X12, AATCC-8
4.	Water	IS :767, ISO 105-E01, AATCC-107
5.	Perspiration	IS : 971. ISO105 E04, AATCC-15, DIN 54020
6.	Dry Cleaning	IS : 4802, ISO 105 D01, AATCC-132
7.	Hot Pressing / Sublimation	IS : 689, IS:975, AATCC-133
8.	Sea Water	IS: 690, AATCC-106, ISO105 E02,
9.	Organic Solvent / Water Spotting	IS : 688, AATCC104, AATCC-157, JISLO853, ISO-105 E07
10.	Wet Scrubbing	IS : 11908
11.	Shampooing	IS : 11969
12.	Chlorinated Water/ Hypochlorite Bleach	IS :762, IS :4803, ISO 105-E03, DIN 4019, AATCC-162
13.	Non-chlorine Bleach/ Hydrogen peroxide Bleach	IS :763, ISO 105 NO.1&2, AATCC-3, AATCC-101
(B) Fibre Composition		
14.	Qualitative Analysis	IS :667/AATCC-20
15.	i)Quantitative Analysis - Binary Mixture - Binary Mixture - Quantitative analysis of complete Socks - Extra Each Component (Fibre)	IS :3416, , IS:9889, AATCC-20A, BS: 4407, IS:2006, IS:2005, IS :3421 As per IS methods
	ii) Flax, Jute etc.	Internal method
(C) Dimensional Change to		
16.	Hand Washing	ISO 6330
17.	Domestic Washing	ISO 6330

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	(Horizontal drum & Agitator type machine)	
18.	Automatic Home Laundering (Machine wash)	IS : 1299, AATCC-135, AATCC-150, ISO 5077
19.	Relaxation Shrinkage/ Shrinkage or Elongation	IS 2977, IS : 665
20.	Shrinkage when Heated	IS : 11248, IS : 11815
21.	Appearance After Laundering/Hand Wash	AATCC-124, AATCC-88, AATCC-143
22.	Dry & Wet Shrinkage for Polyester sewing thread	IS : 9543
23.	Skewness	AATCC-179, ASTM-D3882
24.	Fabric Wrinkle Recovery	AATCC-128
(D) Water, Chemical & Oil Repellent/Resistance		
25.	Bundesman /Shower	IS : 392
26.	Cone Test	IS : 7941
27.	Spray Test	IS : 390, AATCC-22, ISO-4920
28.	Hydrostatic Pressure Head Test	IS: 7016 (PART-VII), AATCC-79, ASTM D4772
29.	Water resistance: Hydrostatic pressure test	AATCC 127/EN ISO 20811
30.	Water resistance: Impact penetration test	AATCC 42
31.	Water Vapour Transmission Test	ASTM E-96, CAN-4.2-49
32.	Wettability of cotton/ Absorbency (By drop test)	IS : 2349, AATCC-79
33.	Oil Repellency (Hydrocarbon)	AATCC-118
34.	Buoyancy Test	IS : 3040
35.	Moisture Management Test	AATCC 196
36.	Penetration by liquid chemical	IS 15758 (Part 3)/EN ISO 6530
(E) Colour Measurement		
37.	Assessment of Total Colour difference (ΔE)	AATCC:173, AATCC Evaluation Procedure- 7
38.	Whiteness/Yellowness/Brightness Index Evaluation Comparasion	Computer colour matching system
39.	Comparison of strength of Dyestuff Powder Strength	Solvent soluble dyes using spectrophotometer
40.	Reflectance Value & Curve	Computer colour matching system
41.	Presence of optical Brightener	U.V. Light
42.	Optical Brightening Agent	UV -Spectrophotometer

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	(OBA) Active Content	
(F) General Parameters		
43.	pH Value of Aqueous Extract	IS : 1390, ISO-3071, AATCC-81
44.	Water Soluble Matter	IS : 3456
45.	Scouring Loss (i) Mild & Sever method (ii) Solvent method	IS : 1383 IS : 2360
46.	Ether Soluble/ Solvent soluble Matter	IS : 4390
47.	Barium Activity Number	IS : 1689
48.	Desizing of Fabrics	IS :1383
49.	Residual starch on bleached fabric	IS : 1967
50.	Ash Content	IS : 199
51.	Moisture Content	IS : 199, ASTM D2654
52.	Solid Content	IS : 199
53.	Ionic Nature	Solvent
54.	Active Content	Solvent
55.	Oligomer Content	Solvent Extraction
56.	OilContent/Wax Content/Spin Finish	Solvent Extraction
57.	Raw Wool Fibres (Scouring Loss, Oil & Fat Content, Vegetable Matter , Ash Content)	IS :1349
58.	Chloride content of textile material	IS : 4202
59.	Sulphate content of textile material	IS : 4203
60.	Wetting Agent	Wetting Efficiency Comparison by DRAVE'S method
61.	Proofing Content	IS 6803
(G) Chemicals (Purity/Strength)		
62.	Ordinary Chemicals	As per BIS standard/Analytical books
63.	Sodium Hypochlorite (i) Available Chlorine (ii) Available Chlorine & Sodium Hydroxide	
64.	Acetic Acid	
65.	Sodium Chloride	
66.	Sodium Hydrosulphite	
67.	Hydrogen Peroxide	
68.	Hydrochloric Acid	
69.	Sulphuric Acid	

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70.	Sodium silicate -Na ₂ O -SiO ₂	
71.	TiO ₂	
72.	Silicon (Oil Content)	IS :14742
(H) Dye Identification & Printing Assistance		
73.	Identification of Dyes on textile material	IS : 4472
74.	Comparison of Dyestuff Strength Test (By Dyeing)and Evaluation by CCM	Dyeing Technique manual
(I) Flame, Heat, Electric & Thermal Resistance		
75.	Pre-treatment after 05 washes before FR test	IS 15370-2A/ISO 6330-2A
76.	Heat resistance	ISO 17493 (180°C)
77.	Flame spread – Face ignition	IS 15758 (Part 4)/ISO 15025: 2000 (A) /BS 5867/BS 5438-1A
		BS 5438-2A
		BS 5438-3A
78.	Flame spread – Edge ignition	IS 15758 (Part 4)/ISO 15025: 2000 (B)/BS 5867/BS 5438-1B
		BS 5438-2B
		BS 5438-3B
79.	Impact of spatter (up to class-2)	ISO 9150
80.	Electrical resistance	EN 1149-2
81.	Convective heat	IS 15758/(Part 1)/ISO 9151
82.	Radiant heat	IS 15758 (Part 2)/ISO 6942
83.	Molten Aluminium Splash - up to D1 -up to D2 -up to D3	ISO 9185
84.	Molten Iron Splash -up to E1 -up to E2 -up to E3	ISO 9185
85.	Contact Heat –Heating cylinder	ISO 12127
86.	Sweating guard hot plate test -Thermal Resistance (Rct) -Water vapour resistance (Ret)	ISO 11092 (Ret can also be tested as per ASTM F 1868 Part B)
87.	Limiting Oxygen Index -Fabric	IS 13501/ASTM D 2863/ NCD 14510

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	-Nonwoven, plastic, wood etc	
88.	Vertical Flammability test - IS 15061 - IS 11871/ BS 5438	IS 15061 Annex B/11871 Method A
89.	Inclined Flammability Test	IS : 11871 Method-B/ASTM D1230/ AATCC-33
90.	Horizontal Flammability Test	IS 15061 Annex A/FMVSS 701
91.	Methenamine Tablet test	BS 6307/ASTM D 2859/NFPA 101
92.	Cigarette test (Source zero)	BS 5852
93.	Small Flame test (Source-1)	BS 5852
94.	Fire test -NFPA 701 Method 1 -NFPA 701 Method 2	NFPA 701
95.	Thermal Protective Performance Test (TPP /HTP)	NFPA-2112, ISO 17492, NFPA 1971, NFPA 1981, ASTM F 2700, ASTM 2703 (For contact & Space both)
96.	Surface Flammability Test	ISO 5658-2/ IMO A 653
97.	Heat resistance	Hot Air Oven
98.	Humidity Resistance	Humidity chamber
(J) High Visibility Clothing		
99	Colour performance – Chromaticity coordinates and luminance factor (Normal state)	IS 15809/BS EN 20471
100	Colour performance – Chromaticity coordinates and luminance factor (After Xenon test)	IS 15809/BS EN 20471
101	Photometric for retro-reflective material (Normal state) -Chromo city -Retero reflection	IS 15809/BS EN 20471
102	Photometric for retro-reflective material (After exposure to Abrasion, Flexing, Temperature variation, Washing, Cold fold, Dry cleaning, Rainfall)	IS 15809/BS EN 20471
(K) Automotive Textiles		

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103	Color Fastness to Light (Xenon Arc) - One sample - For two samples - More than three samples	GME 60292/SAE J 1885/TSL 3600 G/ TSL 0601 G/MS –300-35/AATCC 16 H/JASO M 403-83/HES D 6601/JASO M 346/EDS-T-7415/GM 9538P
104	Colour definition (XYZ & L a b Values)	Using CCM
105	Abrasion Resistance (Taber Type) Abrader Wheel (CS-10, H-18, H-22 & H-38) Upto 1000 Cycles Upto 1500 Cycles Upto 2000 Cycles	SAE J1530 – A, SES N 3246, JASO 403, SAE J948, MS 300-32 SES N 3298
106	Flammability	SAE J 369, FMV SS 302, SES N 3245 HES D-6003, JASO M 313, GM 9070P MS 300-8
107	Smell (Dry & Wet Condition)	TSL 3505G, TSM 0505 G
108	Smell (40C- 95% RH X 400 HRS)	TSL 3505G
109	Odor property	HES D6507/MS 300-32/FMLT 131-01
110	Fog Test -Fog Number -Fog Percentage -Attached mass	TSL 3608G/MS 300-54/TSM 0503G/ EDS T 7694, FLTM BO 116-03/SAE J 1756
111	Colour Fastness to Crocking /Rubbing	FLTM BN 107-01/JASO M 313 EDS-T-7643
112	Dimensional change by Moisturing/ Immersion shrinkage	HES D 6506/JASO M 313-83 MS 300-32/FLTM BN 105-01
113	Dimensional Stability against Humidity	MS 300-32
114	Dimensional Change by Heating	HES D 6506/FLTM-BN-105-01
115	Water Resistance/Repellency	HES D 6506/Ms 300-32
117	Resistance to Bleeding	AN 101 –01
116	Resistance to Bleeding	AN 101 –01
117	Resistance to Heat	(100 ⁰ c for 8 Hrs.)
118	Resistance to Humidity	(40 ⁰ C- 95% RH for 8 hrs.)
119	Steaming in Auto-Clave	(100 ⁰ C for 1 hr.)
120	Colour fastness to Crocking	TSL 3600 G/BN 107-01/FLTM BN 107-01/MS 300-32

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121	Soil Resistance (Oil, Water and drop)	Automotive standard
(L) Microbiology Related Test		
Anti Bacterial Evaluation test		
122	Antimicrobial Finishes on Textile materials: Assessment -Staphylococcus aureus ATCC No 6538 -Klebsiella pneumonia ATCC No 4352	AATCC 100
123	Antimicrobial Activity Assessment of Textile Materials: Parallel Streak method	AATCC 147
124	Antimicrobial Activity Assessment of new carpet i. Qualitative assessment ii. Quantitative assessment	AATCC 174
125	Antibacterial activity assessment of textile materials: Agar plate method	AATCC 90
126	Determination of antibacterial activity of textile product	ISO 20743
127	Measurement of antibacterial activity on plastics and other non-porous surface	ISO 22196
128	Determination of antibacterial activity of textile product- Agar diffusion plate test	ISO 20645
129	To evaluate the antibacterial efficacy of antibacterial finished textile product	JIS L 1902
130	To determine the resistance to dry bacterial penetration	IS 16548, ISO 22612
Antifungal Evaluation		
131	To determine the degradability of textile materials-Part-1	AATCC 30- Part-1
132	To evaluate the susceptibility of textile specimen against fungal Chaetomium globosum-Part-2	AATCC 30- Part-2

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133	To evaluate the susceptibility of textile specimen against fungal like Aspergillus niger.- Part-3	AATCC 30- Part-3
134	Standard practice for determining resistance of synthetic polymeric materials to fungi	ASTM G 21
135	Detection of mildew /rot proof-ness	MIL-STD-810 F Method 508.5.1
(M) Medical Textiles Related Test		
136	Synthetic Blood Penetration - Fabric - Coverall - Shoe cover	ISO16603: 2004/IS 16546: 2016/ (Procedure A, B, C- upto 3.5kPa, D-upto 3.5kPa)OR ASTM F 1670/F1670M-17a
137	Resistance to penetration by synthetic blood/ Splash resistance for surgical mask	IS 16289 Annex D, ASTM F 1862, ISO 22609
138	Differential pressure, mm H ₂ O/cm ² for surgical mask	IS 16289: 2014, Annex C, EN 14683:2019, Annex C
139	Flammability for surgical mask	16 CFR 1610

Note:

Tests are being carried out as per IS, ASTM, DIN, ISO, JASO, BS, AATCC, EN, HONDA, HES, SES, NES, GM, KIA Standards, Defence, DGS&D, UIC and any other method as per the party's request.

Chemical Quality Evaluation (CQE) lab may also create facilities of tests other than above as per the requirement of parties.

Before sending the sample, please ensure that sample selected represents the lot.

For further necessary details please contact NITRA labs.