

Tests	
FIBRE TESTING	
Moisture Content by Oven Drying	
Trash Content in Cotton Shirley Analyser or Trash Separator [IS:4871]	
Fibre Maturity by Caustic Soda Method [IS:236]	
AFIS Test (For Neps, Short Fibre %, etc.) [ASTM D:5866]	
High Volume Instrument (HVI) Test [ASTM D:5867]	
☐ Up to 5 samples	
☐ For every additional sample [extra]	
Mean Length and Distribution by Single Fibre Measurement (BISFA) [ISO:6989] cut length	
Mean Length and Distribution by Single Fibre Measurement (BISFA)	
Fibre Length of fibre removed from yarn	
Staple Length by Comb Sorter - Array Method: Manmade fibres	
Breaking Strength and Elongation at Break (Single Fibre) (Conditioned or Wet) [ISO:5079], [ASTM D:1577]	
Tenacity and Extension at Break (Single Fibre) (Conditioned or Wet) (Includes Charges for Denier) [ISO:5079] [ASTM D:1577]	
Arcs per Centimetre [ASTM D:3937]	
Fibre Hollowness [by SEM]	
Denier of fibre [ASTM D:1577]	
Shrinkage in Boiling Water	
Shrinkage in Hot Air [ASTM D:5104]	
Percent Over length Fibre [ISO:6989]	
Presence of Undrawn Fibres [by SEM]	
Fibre Diameter / Linear Density (Projection Microscope) per fibre type	
YARN TESTING	
Moisture Content by Oven Drying	
Yarn Number with CV% [IS:1315], [ASTM D:1907] [ASTM D:1059]	
Lea Strength with CV% [IS:1671], [ASTM D:1578]	
CSP with CV%	
	[IS:1315] & [ASTM D:1907] [ASTM D:1059]
RKM, Elongation and their CV%	[IS:1670] & [ASTM D:2256]
Single Yarn Strength and Elongation with CV% (Flat Multifilament on Instron) [IS:1670], [ASTM D:2256]	
Strength of Yarn Removed from Fabric [IS:1670], [ASTM D:2256]	
☐ Warp/Weft	
Loop Yarn Strength	
☐ From yarn package	
☐ Removed from fabric	
Single Yarn Twist [IS:832-1999], [ASTM D:1422]	
Resultant Ply Yarn Twist [IS:832-1999], [ASTM D:1423]	
Cords and Cables Twist	
Twist of filament yarn – HT	
Twist of yarn removed from the fabric [IS:832], [ASTM D:1422 / 1423]	
☐ Each Yarn	
Single and Doubling Twist in Two Fold Yarn [or] Single yarn twist in two fold yarn	
Twist Balance	
Evenness of Yarn with Imperfections and Hairiness [ASTM D:1425], [ISO:16549]	
Identification – Yarn Type	
☐ Carded or Combed (from woven fabric)	
☐ Carded or Combed (from knitted fabric)	
☐ Texturised or Non Texturised (one direction)	
☐ Ring Spun or Rotor Spun (one direction)	
Shrinkage in Boiling Water or Dry Heat [ASTM D:2259]	
Number of Filaments in Multifilament Yarn	
Length of Yarn on Spool	
Yarn Diameter on Projection Microscope	
Yarn Co-efficient of Friction (Yarn to Metal) [ASTM D:3108]	
winding on cone	

FABRIC TESTING
Moisture Content by Oven Drying
Length and Width [IS:1954], [ASTM D:3774]
Only length
Only width
Mass per Unit Length [IS:1964], [ASTM D:3801]
Mass per Unit Area [IS:1964], [ASTM D:3801]
Thickness of Fabric [ASTM D:1777], [ISO:9863 Part I], [IS:7702]
Thread Density (Ends and Picks) [IS:1963], [ASTM D:3775]
Yarn Number (Warp and Weft) [IS:3442], [ASTM D:3883]
☐ With Added Matter (as such)
☐ For additional colour and type of yarn(multicolour)
Crimp of Warp and Weft Yarn [IS:3492]
Weave Diagram - upto 16 x 16 = 32 Threads/Repeat
Type of Weave
Percent of Texturised Yarn in Woven Fabric
Spacing Between Threads (On Travelling Microscope)
Breaking Load and Elongation [IS:1969], [ASTM D:5034], [ASTM D:5035], [ISO:13934 Parts I & II]
Tear Resistance of Woven Fabric by Falling Pendulum Method (Elmendorf) [IS:6489], [ASTM D:1424], [ISO:13937 Part I]
Tear Resistance of Woven Fabric by Double Rip or Single Rip Method or Wing Rib Method or Trapezoidal Method [IS:7016 Part III], [ASTM D:2261],
Diaphragm Bursting Strength of Fabric (Mullen) without distension [IS:1966]
Crease Recovery Test [IS:4681], [ISO:2313]
☐ Initial (conditioned)
Stiffness (Cantilever Test) – Bending Length [IS:6490], [ASTM D:1388]
Flexural Rigidity [IS:6490], [ASTM D:1388]
Drape Co-efficient [IS:8357]
Air Permeability Test
☐ Per pressure [IS:11056], [ASTM D:737]
Pilling Propensity [IS:10971], [BS:11], [ISO:12945 Part I]
(i) Pill Box Tester – Up to 18,000 Cycles
(ii) Martindale pilling – 1000 cycles
(iii) Random Tumble Pilling – 30 min [ASTM D:3512]
(iv) Martindale Pilling [ISO 12945]
Abrasion Resistance Testing
(i) Martindale Tester [ASTM D:4966], [ISO:12947 Part II]
☐ Up to 20,000 Rubs
☐ Each additional 10,000 rubs or part thereof
(ii) Flat Abrasion / Flex Abrasion [IS:12673], [ASTM D:3885 / 3886]
☐ 1000 Cycles
☐ 2000 Cycles
☐ 3000 Cycles
☐ 4000 Cycles
☐ 5000 Cycles Up to Break
Seam Breaking Strength [ASTM D:434], [ASTM D:1683] / Seam Slippage
Stretch & Set
Fabric Defect Analysis - Minimum Charges (Additional Charges Depend on Work Involved)
Scanning Electron Micrographs
☐ Longitudinal View of Fibres/Yarns
☐ Cross-section View of Fibres/Yarns
☐ Birefringence
☐ Measurement of Images – Extra for every additional image [beyond 16 images]
☐ Hollowness (%)

Terry Towel Analysis [IS:7056]
▢ Count of Warp, Weft, Pile Yarns
▢ Construction - Warp, Weft, Pile (EPI, PPI)
▢ Breaking Strength (Warp and Weft)
▢ Terry Ratio (Warp to Pile Length Measurement)
▢ Pile Height
▢ Absorbency [drop method]
▢ Absorption % [Water retention] [EDANA Method]
▢ Tuft withdrawal strength / Loop withdrawal strength / Loop slippage for bath towel
Bonding Strength of Bonded Fabric [for application of adhesive extra charges as applicable] [IS:7016 Part IV]
Skewness Test or Bowness [ASTM D:3882]
Pore Size (Dry Sieving) [ASTM D:4751]
Water Permeability per pressure [ASTM D:4491]
Thermal Shrinkage
FLAMMABILITY TESTING
General Appareil
Ease of ignition of vertically oriented specimen [BS EN ISO 6940]
Flame spread properties of vertically oriented specimen
▢ BS EN ISO 6941
▢ DIN EN ISO 6941
▢ BS EN 1103
UK night wear safety regulation
▢ BS 5438 / BS 5722 Test 1
▢ BS 5438 / BS 5722 Test 2
▢ BS 5438 / BS 5722 Test 3
Curtain, Drapes and Blinds
Ignitability of vertically oriented specimen [BS EN 1101]
Flame spread properties of vertically oriented specimen [BS EN 1102]
Personal Protective Clothing
Limited flame spread [EN 532 / ISO 15025]
For limited flame spread
▢ BS 5438: 1976 Test 1
▢ BS 5438: 1976 Test 2
▢ BS 5438: 1976 Test 3
Limiting Oxygen Index -IS:13501/[ASTM D: 2863]
Vertical Flame Test -IS: 11871 /BS:3119/NFPA 1975/NFPA2112
Horizontal FLAMMABILITY-IS15061/ASTM D:5132/FMVSS/SUZUKI
45C Inclined Flammability-16CFR1610/ASTM D:1230/IS:11871(B)
Carpet Flammability-ASTM D 2859/16 CFR 1630/ISO:6925/BS6307
Vinyl Coated Fabric Flammability:IS:1259
Flammability Of Plastics
Vertical Burning Test(Charges inclusive of Oven conditioning)
▢ UL 94(VO.V1.V2)/ASTM D 3801/IEC 60695-11-10(B)/ISO:1210(A)
▢ UL 94(VTM)/ASTM D:4804/ISO:9773(Non Rigid samples)
▢ UL 94(5V)/ASTM 5048/IEC 60695-11-20
▢ UL 94HB
▢ UL VI
Horizontal Burning test (Wing Top Method)_ASTMD :4986/ISO :3582/ISO 9772
Horizontal Burning test -UL94HB/ISO:1210(A)/ASTM D :635/IEC:60695-11-10(A)
Toxicity index Test as per NCD 1409
Smoke Visibility Test as per UIC 564.2-Appendix-15
SPECIAL & POLYMER TESTING @ [@ - In case of Special / specific Testing, rates may vary for samples depending upon special testing conditions or actual machine run time]
X- ray Diffraction
▢ Fibre Orientation Angle (Per Peak)
▢ Material Identification (By Comparison with Standards)
UV Protection Factor [AATCC-183] [EN 13758]
Surface Tension – drop volume method (or) contact angle method
EMI Shielding Effectiveness [ASTM D 4935]
F.T.I.R. Spectroscopy – scan only

▣ Material Identification (Using Standard Library)
▣ Material Finish Identification after Extraction
Static Charge Properties
▣ Total Charge Developed and Half Decay Time [ASTM D:4238]
▣ Surface Resistivity [ASTM D:257]
▣ Volume Resistivity
Particle Size Analysis
Thermal Analysis
▣ Thermo Gravimetric Analysis [TGA]
RT -> 350OC @ 10OC per min
RT -> 350OC @ 5OC per min
Above 350OC, per each 100OC @ 10OC per min or part of it [extra]
Material Identification [TGA / DSC]
Copper wire
▣ Differential Scanning Calorimetry (DSC)
▣ 350 - 350O or part of it @ 10O per min
▣ 350 - 350O @ 5O per min
▣ Below ambient on lower side per 10OC [extra]
▣ Above 350OC, per 50OC or part of it [extra]
Gel Permeation Chromatography (GPC) for Molecular Weight Distribution
▣ Water as Mobile Phase
▣ Organic Solvent as Mobile Phase [THF or Chloroform]
▣ For PET using HFIP as Solvent
▣ If only one sample, additional charges to the above will be charged.
Melt Spinning Experiments (For 1 kg Material)
Refractive Index of Liquids (Abbe's Refractometer)
surface energy
Contact Angle
MICROBIOLOGY TESTING @ [@ - In case of special / specific Testing, rates may vary for samples depending upon special testing conditions or actual machine run time]
Antibacterial Activity of Fabrics, Assessment of Textile Materials – Parallel Streak Method [AATCC:147]
Determination of antibacterial activity of antibacterial finished products including nonwovens [ISO-20743]
Assessment of Antibacterial Finishes on Textile Materials [AATCC:100]
Antimicrobial Activity Assessment of Carpets [AATCC:174] (Qualitative)
Antimicrobial Activity Assessment of Carpets [AATCC:174] (Quantitative)
Antimicrobial Activity Assessment of Carpets [AATCC:174] (Antifungal)
Evaluation of Antimicrobial activity of Textile
▣ By ASTM: E 2149 Method [with one organism]
▣ By ASTM: E 2149 Method [for every additional organism]
Evaluation of Antimicrobial activity of Textile
▣ By JIS L 1902 Method [Bacteriostatic activity] – untreated is required
Fungi Resistance [ASTM C:1338] – 30 days test
Resistance of materials to fungi [MIL-STD-810F]
EN ISO 20645
Antifungal Activity, Assessment on Textile Materials
▣ Evaluation of rot resistance of cellulose containing textile material coming in contact with soil [AATCC:30 – Method II]
▣ Agar plate with Aspergillus niger [AATCC:30 – Method III]
▣ Determination of fungistatic effectiveness of treatment to control mildew and fungal growth on textile by Humidity Jar Method [AATCC:30– Method IV]
▣ Cellulosic 14 days
▣ Noncellulosic 28 days
Bioburden testing of textiles [ISO 11737] - Total bacterial count & Total fungal count
Anaerobic growth-Qulitative
▣ Detection of E.coli
▣ Detection of Salmonella
▣ Detection of S.aureus
▣ Detection of Ps.aeruginosa
Bacteriological Examination of water [IS:1622] - Total bacterial count & Total fungal count
▣ Detection of Coliforms [MPN Method] [IS 1622]
▣ Detection of E.coli [IS 1622]
▣ Detection of S.aureus (Optional)
▣ Detection of Ps.aeruginosa (Optional)

Evaluation of Bacterial Filtration Efficiency of Medical Textiles [In-house Test Method]	
Standard practice for determining resistance of synthetic polymeric materials to Fungi [ASTM G:21]	
Methods for testing cotton fabrics for resistance to attack by micro-organism by Humidity Chamber Method [IS:1389]	
Antibacterial activity (Agar diffusion plate test) – Qualitative [ISO:20645]	
Detection of Antibacterial activity of fabrics – Agar Plate Method [AATCC-90]	
JIS Z 2801:2000 for Paints / Films [Treated & Untreated Sample Required]	
Antimicrobial Activity [AATCC 174 (Qualitative)]	
Antimicrobial Activity [AATCC 174 (Quantitative)]	
Antifungal Activity [AATCC 174]	
ECO-PARAMETERS TESTING	
Free formaldehyde [ISO:14184 - part 1]	
Release formaldehyde [ISO:14184 - part 2]	
Chlorophenol	
▣ PCP or TECP or TCP	
▣ PCP + TECP + TCP	
▣ OPP	
Pesticides [EPA 8081, 8151,8141]	
▣ Organo chlorine	
▣ Organo phosphorous	
▣ Others	
▣ Total pesticide residue	
Aryl amines [EN 14362:2012 parts I & III]	
Phthalates [CPSC-CH-C1001] , [ISO 14389]	
Chlorinated organic carriers [EPA 8121] , [DIN 54232]	
Poly chlorinated biphenyls (mono chloro to deca chloro) [DCDMA]	
Hexachloro benzene [GC MS]	
Allergenic disperse dyes [DIN 54231]	
Glyoxal content [MBHT/ Spectro photometric]	
Organo tin [DIN ISO 17353] , [ISO 16179]	
Polycyclic Aromatic Hydrocarbon (PAH) [EPA 8100] , [EN 17132]	
Nickel Release [EN 12472]	
Metal Content by ICP-OES	
▣ Per metal	
▣ Up to 10 metals	
▣ 11 – 30 metals	
▣ 31 – 70 metals	
Spectro photometric evaluation of dyes/optical whitener	
▣ Water soluble	
▣ Solvent soluble	
Analysis of organic compounds by	
▣ GC-FID (Area normalization)	
▣ GC-FID (Quantitative analysis)	
▣ GC-MS {NIST library search report}	
Perfumery analysis by GC-MS (with printouts)	
Biphenol analysis by GC-MS on packing material	
TLC analysis	
HPLC analysis PDAD/RID/FLD (Per analysis)	
Triclosan/ Bis phenol A / BHT	
TESTS FOR OEKOTEX-100	
For Textile	
Free formaldehyde	ISO 14184-I/J LAW 112
Extractable heavy metals(11 metals)	EN 16711-2,ISO 11885
Total metals (2 metals) Pb,cd	DIN EN 16711-1 ,ASTM E 1613
Hexavalent Chromium	ISO 17075
Chlorinated phenols (Total 10)	ISO 17070
Phthalates (Total 10)	CPSC-CH-C1001
Organo tin compounds (Total 4)	DIN ISO 17353
Ortho phenyl phenol	By GC MS (In house)
Cleavable Arylamines (Total 24)	EN 14362 -1&3
Allergenic disperse dyes(Total 12)	DIN 54231
Polycyclic aromatic hydrocarbon(Total 17)	EPA 8100

Solvent residues(NMP,DMAc,DMF)	By GC MS (In house)
Chemical residue (DMFu)	By GC MS (In house)
Pesticides (Total 36)	EPA8081,8151,8141
Chlorinated carrier (Total 17)	EPA8121
Surfactants(OP,NP,OPEO,NPEO) *	ASTM 7065/ISO 18254
Per fluorinated compounds(PFOA,PFOS) *	EPA 3550
pH value	ISO 3071
Colour fastness to water	ISO 105-E01
Colour fastness to perspiration	AATCC-15
Colour fastness to Rubbing	ISO 105-X12
Colour fastness to saliva	DIN 53160
Determination of odours	SNV 195651
For Dyes & Auxillaries	
Free formaldehyde	IS 16522 (By HPLC)
Total metals (9 metals)	EN 16711-2,ISO 11885
Hexavalent Chromium	IS 17338
Chlorinated phenols (Total 10)	ISO 17070
Phthalates (Total 10)	CPSC-CH-C1001
Organo tin compounds (Total 4)	DIN ISO 17353
Ortho phenyl phenol	By GC MS (In house)
Cleavable Arylamines (Total 24)	EN 14362 -1&3
Allergenic &Carcinogenic dyes(Total 12)	DIN 54231
Polycyclic aromatic hydrocarbon(Total 17)	EPA 8100
Solvent residues(NMP,DMAc,DMF)	By GC MS (In house)
Chemical residue (DMFu)	By GC MS (In house)
Chlorinated Benzene & Toluene(Total 17)	EPA8121
Surfactants(OP,NP,OPEO,NPEO) *	ASTM 7065/ISO 18254
Per fluorinated compounds(PFOA,PFOS) *	EPA 3550
Tests for GOTS	
2.4.14 TECHNICAL QUALITY PARAMETER	
Colour fastness to Rubbing(Dry & Wet)	ISO 105 X12
Colour fastness to Perspiration(ac&Ak)	ISO 105 E04
Colour fastness to light	ISO 105 B02
Colour fastness to Saliva	DIN 53160-1
Colour fastness to washing	ISO 105-C06 A1S
Dimensional change on washing (one industrial wash)	ISO 6330
2.4.15 LIMIT VALUES FOR RESIDUE IN GOTS GOODS	
Alkylphenol(NP,OP) Alkyl phenol ethoxylate (NPEO,OPEO) *	DIN EN ISO 18254-1 , DIN ISO 18218/LCMS
Banned Amines(Aryl amines) (24)	EN 14362 I & III GC MS/HPLC
AOX *	ISO 9562
Allergenic & carcinogenic Dyes (12)	DIN 54231; HPLC
Formaldehyde	Japanese Law 112,or ISO-14184-1
Glyoxal	MBHT/UV SPECTROPHOTOMETER
pH value	IS 3390
Chlorophenols(PCP,TCP,TeCP) (10)	DIN EN ISO 17070
OPP(o-Phenylphenol)	In house/ GC-MS
Pesticides(36)	EPA 8081,8151,8141
Extractable Heavy Metals(11 metals)	DIN EN ISO 16711-2 & ISO 11885 (ICP-OES)
Hexavalent Chromium	DIN EN ISO 105-E04 /ISO 17075
Total heavy metal (Cd, Pb)	DIN EN 16711-1 & ISO 11885(ICP-OES)
Organotin compounds(4) DBT, TBT, DOT, TrpHT	DIN ISO 17353 GC MS
PFOS & PFOA *	EPA 3550C/ LC/MS
Phthalates(12)	CPSC-CH-C1001-09.3/ISO 14389
Polycyclic Aromatic Hydrocarbons(17)	EPA 8100

2.4.16 Limit values for residues in additional fibre materials & accessories		
Banned Amines(Aryl amines) (24)		EN 14362 I & III GC MS/HPLC
Allergenic & carcinogenic Dyes (12)		DIN 54231
Formaldehyde		Japanese Law 112,or ISO-14184
Glyoxal		MBHT/UV SPECTROPHOTOMETER
pH value		IS 3390
Chlorophenols(PCP,TCP,TeCP) (10)		DIN EN ISO 17070
Pesticides(36)		EPA 8081,8151,8141
Extractable Heavy Metals(8 metals)		DIN EN ISO 16711-2 & ISO 11885 (ICP-OES)
Hexavalent Chromium		DIN EN ISO 105-E04 /ISO 17075
Total heavy metal (Cd, Pb)		EPA 3050B
Organotin compounds(4)		DIN ISO 17353
Phthalates(12)		CPSC-CH-C1001-09.3 / ISO 14389
Polycyclic Aromatic Hydrocarbons(17)		EPA 8100
Nickel Release		EN 1811/ EN 12472
2.3 General requirement for input chemicals		
Dyes & pigments		
AP(NP,OP) &APEO (NPEO,OPEO) *		DIN EN ISO 18254-1 & DIN ISO 18218-1
Chloro phenols (10)		DIN EN ISO 17070
Formaldehyde		IS 16522
Heavy metals (as per ETAD) 16 metal		EN 16711-1 & EN ISO 11885
Azo dyes releasing aryl amines		EN 14362 I & III
AOX *		ISO 9562
Organo tin (4)		DIN ISO 17353
PAH		EPA 8100
Bis phenol A		By GC MS (In house)
Phthalates		CPSC-CH-C1001-09.3 / ISO 14389
PFOA &PFOS *		Extraction in solvent LC/MS (In House)
Fish toxicity (LC-50)		OECD 203
BOD		OECD 301
Auxiliary chemicals		
AP(NP,OP) &APEO (NPEO,OPEO) *		DIN EN ISO 18254-1 , DIN ISO 18218/LCMS
Chloro phenols (10)		DIN EN ISO 17070
Formaldehyde		IS 16522
Heavy metals (as per ETAD)		EN 16711-1 & ASTM E 1613
AOX *		ISO 9562
Organo tin (4)		DIN ISO 17353
PAH (17)		EPA 8100
Bis phenol A		By GC MS (In house)
Phthalates(12)		CPSC-CH-C1001-09.3
PFOA &PFOS *		Extraction in solvent LC/MS (In House)
Fish toxicity (LC-50)		OECD 203
BOD		OECD 301
CHEMICAL TESTING		
Blend Analysis (Binary)		
□ Each Additional Fibre		
Fibre Identification by Chemical Method		
Polyester fibre -dope dyed or not		
Identification of Finish in Fabric [FTIR Method]		
Total Size on Yarn/Fabric		
Residual Starch on Bleached Fabric		
Starch Content by Tegewa Method		
Fats/Waxes/Spin Finish / Oil Content		
Ionic Nature of Spin Finish		
Phenolic Yellowing Test		
Oligomer Content (Solvent Extraction)		

Water Soluble Matter in Fabric
Scouring Loss in Grey and Finished Fabric
Chloride Content
Sulphate Content
Sulphate Content of Solids by ASTM
Dyeing Trials (without evaluation) (<i>Max. fabric size 10 g</i>)
▣ Reactive dye
▣ Vat dye
▣ Disperse Dye
Printing Trials (<i>Max. fabric size 12" * 12"</i>)
▣ Reactive Dye
▣ Disperse Dye
▣ Pigment Dye
Colour Stripping and Redyeing (<i>Max. fabric size 10 g</i>)
pH of Aqueous Extract
Ash Content
Barium Activity Number
Cloud Point
Cuprammonium Fluidity Test [IS:244]
Identification of Class of Dye on Textile Material (per class) [IS:4472]
Absorbency of Fabric
▣ Drop Test on Woven Fabric [IS:2349], [AATCC:79]
▣ Absorption % [EDANA:10.4.02]
Liquid absorption capacity %for sanitary napkin (ISO 9073-6)
Readymade garment spirality-machine wash (AATCC 179)
Dimensional Changes in Fabric
▣ After one industrial wash – ISO:15797
▣ Repeated machine wash [minimum 5 wash or above] per cycle [single wash]
▣ Machine Wash at 95OC [single wash]
▣ Machine Wash – IS: 1299
▣ Machine Wash – ISO: 6330
▣ Machine Wash – for fabric top load -AATCC: 135 [with 3 washes]
▣ Machine Wash – for garment top load -AATCC: 150 [with 3 washes]
▣ Machine Wash – for residual shrinkage-AATCC 135
▣ Relaxation Shrinkage [IS:2977]
Mercerising wetting agent(AATCC 43)
Wrinkle recovery of fabrics(AATCC:128)
Titanium Dioxide Content in Polyester Fibre
Titanium Dioxide Purity
Copper or Zinc Content in Proofed Material (IS:6803)
Cone Test [IS:7941]
Spray Test [IS:390], [AATCC:22]
Oil Repellency Test [AATCC:118]
Oil repellency (as per DMSRDE Specification)
Pressure Head Test [AATCC 127]
Pressure Head Test [IS:391]
Aqueous liquid repellency (water/alcohol solution resistance test) [AATCC:193]
Water vapour transmission [ASTM E:96]
Coating content of coated fabrics
Bundesmann Water Repellency Test [IS:392]
Smoothness Appearance Rating [AATCC:124]
Stain Release Test [AATCC:130]
Proofing Content
Honeydew quantitative
COLOUR FASTNESS TESTING
Colour Fastness To Light (Xenon Lamp) – IS/ISO Method
▣ Up to Blue Wool Standard 4
▣ Blue Wool Standard 5
▣ Blue Wool Standard 6
▣ Blue Wool Standard 7
▣ Blue Wool Standard 8

Colour Fastness to Xenon Exposure [AATCC 16C]
☐ 20 AFU
☐ 40 AFU
☐ 80 AFU
☐ 100 AFU
☐ Every Additional 100 hours or part thereof
Colour Fastness to Washing Test No. 1 to 3 [ISO 105-C03]
Colour Fastness to Washing Test No. 4
Colour Fastness to Washing Test No. 5
Colour Fastness to Washing Test No. 3 [Repeated 4 times]
Colour Fastness to Washing Test No. 5 [Repeated 4 times]
Colour Fastness to Sodium Hypochlorite/ H2O2 / Bleaching / Chlorine Water
Colour Fastness to Water [ISO 105-E01]
Colour Fastness to Water – AATCC Method
Colour Fastness to Dry Heat / Sublimation at one temperature
Colour Fastness to Hot Pressing [IS:689], [ISO:105-X11]
Colour Fastness to Rubbing [IS:766], [ISO:105-X12]
Colour Fastness to Dry Cleaning [IS:4802], [ISO:105-D01]
Colour Fastness to Saliva [DIN:53160]
Colour Fastness to Perspiration – IS/ISO method
Colour Fastness to Perspiration – AATCC method
Colour Fastness to Mercerisation
Colour Fastness to Laundering: Home and Commercial [AATCC:61], [ISO:105-C06]
Colour Fastness to Sea Water [IS:690], [ISO:105-E02]
Colour fastness to organic solvents
Colour fastness to Acids & Alkalis [AATCC 6]
Colour fastness to burning gas
TESTING OF SIZING INGREDIENTS
Analysis of starch powder
☐ Moisture content [Oven Method]
☐ Ash content
☐ Starch content
☐ Viscosity at (Redwood No.1 seconds) 75OC
☐ pH
☐ Cold water soluble matter
Carboxy Methyl Cellulose
☐ Moisture content [Oven Method]
☐ Active content
☐ Degree of substitution
☐ Viscosity (Brookfield)
Polyvinyl Alcohol
☐ Moisture content [Oven Method]
☐ Ash content
☐ Viscosity (Brookfield)
☐ Degree of Hydrolysis
☐ pH
Acrylic size
☐ Solids content [Oven Method]
☐ Active content
☐ Viscosity (Brookfield)
Tallow
☐ Moisture & Volatiles [Oven Method]
☐ Ash content
☐ Acid value
☐ Total fatty matter content
☐ Sap value
☐ Iodine value
☐ Unsap matter content
☐ Melting point
China Clay/French Chalk
☐ Moisture content (Oven method)

Loss on ignition
Grit content
Iron content (AAS method)
Gelatin
Moisture content [Oven Method]
Ash content
Nitrogen content (Kjeldhal method)
Viscosity (Brookfield)
Sodium Alginate
Moisture content [Oven Method]
Ash content
Active content
Viscosity (Brookfield)
TESTING OF AUXILIARIES
Sequestering Agent/Chelating Agent (Calcium & Magnesium)
Sequestering Agent for Iron
Enzyme Activity
Alpha Amylase or cellulase enzyme
Wetting Agent
Solid content [Oven Method]
Active content
Drave's Test
Foaming property
Wetting agent for Mercerisation
Wetting Efficiency
Surface Tension
Hydrogen Peroxide Stabilizer
Stabilizing Power (by titration)
Whiteness of bleached fabric
Scouring cum Bleaching Agent
Comparison with conventional method
Whiteness of bleached fabric
Absorbency (drop test)
Detergency Power Using Soiled Cloth [IS:5785 Part IV]
Defoaming Power
Levelling / Retarding Agent - Application in Dyeing and Evaluation of colour measurement
Dye fixing agent
Solid content [Oven Drying]
Active content
TESTING OF FINISHING CHEMICALS
Polyvinyl Acetate
Solid content
Active content
Application by pad-dry-cure method (Max. fabric size 12" * 12")
Resin
DMDHEU content (by nitrogen estimation method)
Solid content
Application by pad-dry-cure method (Max. fabric size 12" * 12")
Free Formaldehyde in Resin [Titration Method]
Softeners
Solid content
Application by pad-dry/exhaust
Oil content
Silica content
Application by pad-dry-cure method (Max. fabric size 12" * 12")
Dyeing in Soft overflow Machine / Jet Dyeing Machine

TESTING OF WATER

pH
Dissolved Solids (strands solid %)
Suspended Solids
Chloride
Sulphate
Mg Hardness
Ca Hardness
Total Hardness
Conductivity
Turbidity
Alkalinity / Acidity
Silica Content
Fe Content
Cu Content
Mn Content
No2 Content
No3 Content
COD
BOD after 3 days / 5 days (including COD)

TESTING OF FUELS

Analysis of coal
▣ Moisture content [Oven Method]
▣ Ash content
▣ Calorific Value Using Bomb Calorimeter
Furnace Oil/Thermic Fluid
▣ Moisture and volatiles [Oven Method]
▣ Viscosity, cst
▣ Acid value
▣ Flash point (above ambient)
▣ Flash point (below ambient)
▣ Suspended matter
▣ Viscosity Index
Moisture by Azeotropic Distillation

TESTING OF CHEMICALS FOR PURITY

Percent Purity of:
▣ Acids
▣ Alkalis
▣ Hydrogen Peroxide
▣ Sodium Chlorite
▣ Sodium Chloride
▣ Sodium Silicate
▣ Sodium Hydrosulphite
▣ Sodium Sulphide
▣ Sodium Sulphite
▣ Sodium Nitrite
▣ Sodium Sulphate
▣ Sodium Acetate
▣ Magnesium Chloride
▣ Magnesium Sulphate
▣ Diammonium Phosphate
▣ Resist Salt
▣ Rongalite
▣ Formaldehyde
▣ Glycerine
▣ Lime
▣ Ferrous Sulphate
▣ Alum
▣ Available Chlorine in Sodium Hypo-chlorite Solution
▣ Titanium Dioxide (on powder)
▣ Titanium Dioxide (on fibre)

Purity of Sodium Hexa Meta Phosphate (Acid digestion followed by specto analysis)
Phosphate content (Acid digestion followed by specto analysis)
Formaldehyde content in dyes and auxiliaries [HPLC Method]
COLOUR MEASUREMENT
Colour Measurement (L, a, b values) or Reflectance/Whiteness
Colour Measurement (L, a, b values) of Powder
Colour Difference (K/S, Delta E) Sample vs. Standard
Chromaticity diagram after measurement (marine light)
Absorbance of dilute solution of water soluble dyes per dye
Whiteness index of powder sample
Active content of OBA/FBA on cellulose (water soluble) using UV visible absorbance spectrophotometer
Active content of OBA/FBA on synthetics (solvent soluble) using UV visible absorbance spectrophotometer
Gloss Test
MISCELLANEOUS TESTING
Moisture and volatiles content (oven drying method)
Moisture content (vacuum drying over P2O5)
Moisture content (by Azeotropic Distillation)
Pentachlorophenyl laurate (PCPL)
Degree of curing (OST92-0903-78)
Preparation of film (sizing paste), Thickness & Tensile Strength and Elongation
Application of size on yarn for Strength and Elongation
Application of size on yarn for Weavability study
Application by pad-dry-cure method (Max. fabric size 12" * 12")
Copper corrosion test
Chlorite test - <i>Appendix D of IND/TC/0048 (C)</i>
Hydro test - <i>Appendix C of IND/TC/0048 (C)</i>
Levelling test - <i>Appendix B of IND/TC/0048 (C)</i>
Melting Point (Capillary Method)
Boiling Point
Specific Gravity
Viscosity: Brookfield LVT [only measurement]
Viscosity: Red Wood
Resin Content [OST 92-0903-78]
Wicking Test
Polymer Content
EXPOSURE / AGEING CONDITION CHARGES
Heating (Electrical Oven)
▣ 100oC for 24 hours
▣ 70oC for 168 hours
▣ 105-110 C up to 100 hours
▣ Every Additional 10 hours or part thereof
SUPPLY OF CHEMICALS / GADGETS
Cuprammonium Solution (Per Litre)
Fluidity Tube (Calibrated) (Per Tube)
Viscosity Cup (Calibrated) (Per Cup)
Viscometer Jacket (Per Jacket)
Calibration of Viscosity Cup (Per Cup) / Fluidity Tube (Per Tube)
OTHER TECHNICAL TEXTILES
MEDICAL TEXTILES
Splash Resistacne
Differential Pressure Test
Resistance to Synthetic Blood Pertration Test
COTTON WOOL PADS
Acidity or Alkalinity [Methyl Orange / Phenolphthalein]
pH at 26OC
Absorbency Sinking Time
Water Holding Capacity
Water Soluble Substance
Ether Soluble Substance
Sulphated Ash

Fluorescence
Bio burden Test (4 Organisms) [BAM JS. 2001]
Drying Rate [67 + 2% R.H. & 27 + 2OC Temp.]
I. THREADS (ABOVE 2000 D)
Tensile Strength
II. NARROW FABRIC
Hook & Loop
▯ Peel Strength [IS 8156]
▯ Shear Strength [IS 8156]
Seat Belt Strength
Tape / Webbing Strength & Elongation
Hot Water Shrinkage of Webbing
Tensile Strength & Elongation
Belt for Lift [J635590]
III. CONVEYOR BELT UPTO 12 MM THICK (DUMBEL
Ply adhesion strength
Thickness of cover and belt
Full thickness tensile strength and elongation
Troughability
IV. NYLON ROPES UPTO 12 MM
Tensile Strength for ropes / cordages [IS: 7071]
Tensile Strength for braided nylon cords [IS: 4227 / IS: 7071]
Diameter of Rope [IS: 7071]
Linear Density [IS: 7071]
V. COMPOSITES
Glass Composites
Flexural Strength
Lap Shear Strength [ASTM D: 5868]
Glass Composites / Mats
Thermal Conductivity [ASTM C: 518]
Mass per square metre [ASTM D: 3776 / ISO: 3801 E]
Tensile Strength [ASTM D: 5035]
Thickness [ASTM D: 1777]
Density
Other types of Composites
Tensile properties of polymer matrix composite materials [ASTM D:3039]
Carbon fibre reinforced fabric-unidirectional laminates [DIN EN 2561]
Compressive properties of polymer matrix composite materials [ASTM D:3410]
Compressive properties of rigid cellular plastics [ASTM D:1621 / BS EN ISO 844]
Short beam strength of polymer matrix composite materials (ILSS) [ASTM D:2344]
VI. GLASS ROVING / FABRICS
Mass per square metre [IS: 5746 Part 1]
Yarn Number [IS: 5746 Part 1]
Thickness [ASTM D: 1777]
Breaking Strength & Elongation at Break [ISO: 3341 / IS: 5746-1]
pH of Aqueous Extract
Glass Content
Twist in glass roving
VII. RIGID PANEL
Ultimate Tensile Strength [ASTM D:3039]
Compressive Strength or Compressive Modulus [ASTM D:695]
Izod Impact (Joules per cm) [ASTM D:256]
Flexural Strength or Flexural Modulus [ASTM D:790]
Cutting Charges – extra
VIII. TURF REINFORCEMENT MATS
Mass per Unit Area of Turf Reinforcement Mats [ASTM D6566]
Tensile Properties of Turf Reinforcement Mats [ASTM D6818]
IX. WEBBING & BELTS
Breaking force test of belt [J635590]
Strength & elongation of webbing, tape & Braided materials [ASTM D 6775]

X. TECHNICAL TEXTILES & PLASTICS
Tensile properties of paper & paper boards [ASTM D 828]
Flexural properties of Plastic & insulating materials [ASTM D 790]
Tensile Properties of Plastics [ASTM D 638]
Tensile strength & elongation-Rubber, plastic coated fabrics [ISO 1421]
Compressive properties of rigid plastics [ASTM D 695]
IZOD Impact resistance of plastics [ASTM D 256]
Tensile properties of thin plastic sheeting [ASTM D 882]
Tensile strength of carbon fibre laminates [DIN EN 2561]
Thermal insulation properties [ASTM C 518 / IS 3144]
COATED FABRICS
Mass per square metre [IS: 7016]
Thickness [IS: 7016]
Tensile Strength & Elongation [IS: 7016]
Tongue Tear Strength [IS: 7016]
Single Rib Tear Strength [IS: 7016]
Bonding Strength Bonded / Coated [IS: 7016]
Application of Adhesive [IS: 1259]
Water Vapour Transmission [ASTM E: 96 by Gravi Test Instrument]
Identification of Coating by FTIR
Taber up to 300 cycles
▣ CS10 Wheel
▣ Other Wheels
Hydrostatic Pressure Heat Test
Basic Fabric Properties
Removal of Coating
Identification of Fibres
Yarn Count
Threads/Inch
Martindale Abrasion
▣ Up to 20,000 rubs [ASTM D:4966 / ISO:2947 Part II]
▣ Each additional 10,000 rubs or part
Pliability
Blocking Test
Gelling Test
Flexing Test [Dematia Method]
▣ Up to 50,000 Cycles [IS: 7016 Part V / IS: 1259]
▣ Every Additional 50,000 Cycles
Flammability
Limiting Oxygen Index [ASTM D: 2863]
Vertical Flame Test [IS: 11871 Method A]
Horizontal Burning Rate [IS: 15061]

TECHNICAL TEXTILES TESTING
FILTER FABRICS
I. FILTER FABRICS [WOVEN TYPE]
Mass per square metre [ASTM D: 5261 / ASTM D: 3776 / ISO: 9864 / IS: 14716]
Thickness [ASTM D: 5199]
Thread Density [ASTM D: 3775 / IS: 1963]
Yarn Number [IS:3442 / ASTM D:3883]
Tear Resistance (Trapezoid Strength) [ASTM D: 4533 / IS: 14293]
Grab Strength [ASTM D: 4632 / ISO: 13934-2]
Water Permeability [ASTM D: 4491 / BS: 6906-3 / IS: 14324 / ISO: 11058]
Air Permeability [ASTM D: 737]
Pore Size by Porometer [ASTM D: 6767]
Apparent Opening Size [ASTM D: 4751]
Ball Bursting Strength [ASTM D:3787]
Diaphragm Bursting Strength [ASTM D: 3786 / IS: 1966]
Breaking Strength & Elongation [ASTM D: 5035 / DIN EN ISO: 13934 -1]

Mesh Count (By Microscope)
Acid Treatment
Alkali Treatment
Pressure Head (hydro head or water resistance) [AATCC 127]
II. FILTER FABRICS [NONWOVEN TYPE]
Mass per square metre [ASTM D: 5261 / ASTM D: 3776 / ISO: 9864 / IS: 14716]
Thickness [ASTM D: 5199]
Tear Resistance (Trapezoid Strength) [ASTM D: 4533]
Breaking Strength / Grab Strength [ASTM D: 4632]
Water Permeability [ASTM D: 4491 / BS 6906-3 / IS: 14324 / ISO: 11058]
Air Permeability [ASTM D: 737]
Pore Size by Porometer [ASTM D: 6767]
Apparent Opening Size [ASTM D: 4751]
Ball Bursting Strength [ASTM D:3787]
Diaphragm Bursting Strength [ASTM D: 3786 / IS: 1966]
GEOTEXTILES
I. WOVEN GEO-FABRICS
Mass per square metre [ASTM D: 5261 / ASTM D: 3776 / ISO: 9864 / IS: 14716]
Tensile Strength & Elongation (Warp and Weft) [ASTM D: 5035 / IS: 1969]
UV Resistance Exposure to Light Moisture & Heat in Xenon Arc Type Apparatus [ASTM D: 4355 / BS EN: 12224 / GRI: 155]
Tensile Strength (Before & After Exposure UV Xenon Arc) [ASTM D: 5035]
Trapezoid Tear (Warp & Weft) [ASTM D: 4533]
Index Puncture Resistance [ASTM D: 4833]
Apparent Opening Size [ASTM D: 4751]
Water Permeability [ASTM D: 4491 / BS: 6906-3 / IS: 14324 / ISO: 11058]
Grab Tensile Strength & Elongation [ASTM D: 4632]
Ball Bursting [ASTM D: 751 / D: 3787]
Thickness [ASTM D: 5199]
Cone Drop Test [EN: 918 / ISO: 13433] (Dynamic Puncture Test)
Seam Strength [ASTM D: 4884 / ISO: 10321]
Pore Size by Porometer [ASTM D: 6767]
Abrasion Resistance [ASTM D: 4886]
Tensile Strength (Before & After by ASTM D: 5035)
CBR Puncture Strength [ASTM D: 6241] [ISO:12236]
Asphalt Retention Test [ASTM D: 6140]
Pull out resistance in soil [ASTM D:6706 / DIN EN 13738]
Chemical resistance (acid & alkali) of geotextiles [DIN EN 14030]
Deterioration of geotextiles from outdoor exposure [ASTM D:5970]
Resistance to oxidation [ISO 13438]
II. NONWOVEN GEO-FABRICS
Mass per square metre [ASTM D: 5261 / ISO: 9864]
Wide Width Tensile Strength Machine Direction & Cross Direction [ASTM D: 4595 / EN ISO: 10319]
Grab Breaking Load Machine Direction & Cross Direction [ASTM D: 4632]
Thickness [ASTM D: 5199]
Ball Bursting Strength [ASTM D:3787]
Diaphragm Bursting Strength [ASTM D: 3786]
Index Puncture Resistance [ASTM D: 4833]
Trapezoid Tear Strength [ASTM D: 4533]
Cone Drop Test (Dynamic Puncture Test) [EN: 918 / ISO: 13433]
Static Puncture Strength (CBR Puncture Strength) [ASTM D: 6241 / BS EN ISO: 12236]
Apparent Opening Size [ASTM D: 4751]
Pore Size by Porometer [ASTM D: 6767]
Water Permeability of Filter [ASTM D: 4491 / BS: 6906 / ISO: 11058]
Seam Strength [ASTM D: 4884 / ISO: 10321]
Abrasion Resistance [ASTM D: 4886]
Pull out resistance in soil [ASTM D:6706 / DIN EN 13738]
Chemical resistance (acid & alkali) [DIN EN 14030]
Deterioration from outdoor exposure [ASTM D:5970]
UV Resistance by Xenon arc lamp [ASTM D:4355]
Hydraulic transmissivity using a constant head [ASTM D:4716]
Resistance to oxidation [ISO 13438]

III. PVD BAND DRAIN		
Width		
Weight per Linear Metre		
Tensile Strength & Elongation (Wide Width) [ASTM D: 4595]		
Water Permeability of Filter [ASTM D: 4491 / BS: 6906]		
Thickness of Composite [ASTM D: 5199]		
Tensile Strength of Core [ASTM D: 4595]		
Grab Strength & Elongation at Break for PVD Filter [ASTM D: 4632]		
Trapezoid Tear for Filter Component only [ASTM D: 4533]		
IV. GEO-MEMBRANE LINER		
Thickness [ASTM D: 5199]		
Density [ASTM D: 792]		
Tensile Strength [ASTM D: 6693]		
Tear Strength [ASTM D: 1004]		
Puncture Resistance [ASTM D: 4833]		
Pyramid puncture resistance [ASTM D:5494 / DIN EN 14574]		
Mass per square metre [ASTM D: 5261 / ISO: 9864]		
Carbon Black Content [ASTM D: 1603/ ASTM D 4818]		
Melt Flow Index [ASTM D: 1238]		
Environmental Stress Crack Resistance (ESCR) [ASTM D: 1693 / DIN EN: 14576]		
Stress Crack Resistance (ASTM D:5397)		
Tensile Strength by Wide Width Strip Method [ASTM D:4885]		
Air-oven ageing of polyolefin Geomembranes [ASTM D:5721]		
Integrity of seams produced using thermo fusion method for Reinforced Geomembranes by Strip Tensile Method [ASTM D:7747]		
Integrity of seams produced using thermo fusion method for Reinforced Geomembranes by Grab Method [ASTM D:7749]		
2% Secant Modulus of Polyethylene Geomembrane [ASTM D: 5323]		
Chemical resistance to liquids [ASTM D:5747]		
Resistance to oxidation [DIN EN 14575]		
Tensile strength before and after oxidation		
OIT-Normal Pressure ASTM D 3895		
OIT-High Pressure ASTM D 5885		
Heat ageing		
V. GEOSYNTHETIC CLAY LINER		
Mass per square metre [ASTM D:5993 / DIN EN 14196]		
Bentonite Swell Index [ASTM D: 5890]		
Grab Strength [ASTM D: 4632]		
Tensile Strength [ASTM D: 6768]		
Peel Strength [ASTM D: 6469]		
VI. GEO-GRID		
Tensile Strength & Elongation (Single Rib) [ASTM D: 6637 A]		
Tensile Strength & Elongation (Multi Rib) [ASTM D: 6637 B]		
Junction Strength [ASTM D:7737 / GG-2] for uniaxial geogrid		
Junction Efficiency [GG-2] for extruded geogrid only		
Carbon Black Content [ASTM D: 1603]for extruded geogrid only		
Melt Flow Index [ASTM D: 1238] for extruded geogrid only		
Mass per square metre [ASTM D: 5261 / ISO: 9864]		
Aperture Size & Number of ribs per metre		
VII. GEONETS		
Breaking force [ASTM D:7179]		
Resistance to Chemicals (acid & alkali)		
Compressive strength ASTM D 1621		
VIII. GEOCELLS		
Weld strength [ISO 13426 / BTRA developed method]		
Cell dimensions		
Entire section dimensions		
Cell height		
Cell wall Thickness		

IX. ROPE GABION		
Size of the Gabion		
Thickness of Rope		
Weight per Linear Metre		
Tensile Strength of Rope [IS: 7071]		
Identification of material of Rope [TGA / DSC]		
Tensile Strength (Before & After Exposure UV Xenon Arc) [IS:7071]		
Tensile Strength of Rope after Thermal Treatment (Heating)		
X. METAL GABION [ASTM D: 975]		
Size of the Gabion		
Diameter of Wire		
Tensile Strength of Wire		
GSM of zinc coating on wire		
Thickness of PVC coating		
XI. GEO-COMPOSITES		
Bond strength (Ply adhesion) [ASTM D:7005]		
Hydraulic transmissivity using constant head [ASTM D:4716]		
CBR Puncture Strength [ASTM D: 6241] [ISO:12236]		
Breaking force [ASM D:7179]		
Compressive strength ASTM D 1621		
NONWOVENS		
I. WADDING		
Mass per square metre [ISO: 9073 Part 1]		
Compressional Recovery [ASTM D: 6571 / Defense standard]		
Air Permeability [ASTM D: 737]		
Thermal Conductivity [ASTM C: 518]		
Compression and recovery of insulation of wadding [SAE J1352]		
Compression characteristics of cushioning materials [EDS-T-7650]		
II. COVER STOCK		
Mass [EDANA]		
Absorbency [EDANA]		
Liquid Strike through time [EDANA]		
Repeated Liquid Strike through time [EDANA]		
Wicking Rate [EDANA]		
Tensile Strength & Elongation [EDANA]		
III. FACE MASK		
Pore Size [ASTM D: 6767]		
Bacteria Filtration Efficiency [In-house Method]		
IV. INTERLINING		
Mass per square metre [ISO: 9073 Part 1]		
Thickness [EDANA]		
Tensile Strength & Elongation [ISO: 9073 Part 3]		
Heat Shrinkage		
V. ABSORBING / SHOULDER PADS		
Mass per square metre [EDANA]		
Thickness [EDANA]		
Absorbency [EDANA]		
VI. INSULATION PAD		
Mass per square metre [EDANA]		
Thickness [EDANA]		
Thermal Conductivity [ASTM C: 518]		
VII. CARPETS (NONWOVEN TYPE)		
Mass per square metre		
Thickness		
Compressional Recovery [BS: 4058]		
Durability		
Hexapod Tumbler Test		
Lisson Test [Treading Wheel test]		
Taber Wear Index [up to 300 cycles]		
☐ CS10 Wheel		
☐ Other Wheels		

Colour Fastness to Light up to 5 rating
Dimensional Stability
▣ Heat
▣ Water
Flammability at 450 [IS: 11871 B / 16 CFR 1610 / ASTM D: 1230]
Horizontal Burning Rate [FMVSS: 302 / IS: 15061]
Pill (Camphor / Methanamine) Test [IS: 5641 / ASTM D: 2859]
Tuft Withdrawal Strength (Piled Carpets)
Static Charge by Honestometer [ASTM D: 4238]
Surface Resistivity [ASTM D: 257]
Volume Resistivity [ASTM D: 257]