

Laboratory Shivmalhar Laboratories, A Division of Shivmalhar Technologies Pvt. Ltd., Plot No. 96, Perfect Co-Operative Housing Society, Pannase Nagar, Bhamti, Nagpur, Maharashtra

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-8079

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Validity 03.11.2018 to 02.11.2020

Last Amended on --

| Sl. | Product / Material of Test | Specific Test Performed | Test Method Specification against which tests are performed | Range of Testing / Limits of Detection |
|-----|----------------------------|-------------------------|---|--|
|-----|----------------------------|-------------------------|---|--|

CHEMICAL TESTING

| I. | TEXTILE (WOVEN & NON WOVEN) | | | |
|----|---|---|------------------------|----------------------------|
| 1. | Finished Fabric, Apparel/Garment, Made Ups | Identification of Textiles Fibers | IS 667 | Qualitative |
| | | Analysis of binary mixtures of protein fibres with certain other non-protein fibres | IS 2006 | 1 % to 100 % |
| | | Analysis of binary mixtures of polyester fiber with cotton or regenerated cellulose | IS 3416 | 1 % to 100 % |
| | | Analysis of textiles binary mixture of acrylics and certain other fibers methods | IS 3421 | 1 % to 100 % |
| | | Colour fastness of textiles materials to water | IS 767 | Qualitative (Grade 1 to 5) |
| | | Colour fastness of textiles materials to rubbing | IS 766 | Qualitative (Grade 1 to 5) |
| | | Colour fastness of textiles materials to Perspiration | IS 971 | Qualitative (Grade 1 to 5) |
| | | Colour fastness to washing with soap or soda | IS/ISO 105 (Part C-10) | Qualitative (Grade 1 to 5) |
| | | pH of Aqueous Extracts of fixative materials | IS 1390 | 1 to 14 |

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MECHANICAL TESTING

| I. | TEXTILE MATERIALS | | | |
|----|---------------------------------------|---|----------|--|
| 1. | Yarns | Breaking load and elongation of single strand | IS 1670 | 5 N to 450 N |
| | | Linear density of yarns spun on cotton system | IS 1315 | 10 ^s Ne to 80 ^s Ne |
| | | Yarn strength (spun on cotton system) | IS 1671 | 10 N to 2000 N |
| 2. | Woven Fabric | Twist in yarn | IS 832 | 5 twist/inch to 50 twist/inch |
| | | Length & width of woven fabrics | IS 1954 | 10 cm to 200 cm |
| | | Threads per unit length in woven fabric | IS 1963 | 10 threads/inch to 125 threads/inch |
| | | Tear resistance by the falling pendulum method | IS 6489 | 320 gm to 5400 gm |
| | | Creasing recovery angle | IS 4681 | 15° TO 360° |
| | | Pilling resistance of fabrics | IS 10971 | Qualitative (Grade 1 to 5) |
| | | Stiffness of fabrics-cantilever test | IS 6490 | Bending length: 1 cm to 8 cm |
| | | Breaking Load & Elongation of woven textiles material | IS 1969 | 100 N to 2400 N |
| 3. | Fabric (Woven & Non-Woven) | Mass per unit length & mass per unit area of fabric | IS 1964 | 5 g/m ² to 500 g/m ² |