

TEXTILE TESTING AND QUALITY CONTROL

Paper No : HSCT (304)

ES-3

Credits – 2+2=4

SEM – III(M.Sc. C.T.)

Marks : 50 + 50 = 100

Objective

- To develop and understanding of method and technique used to analyse textile fibre yarns and fabrics for end-use performance.
- To acquire knowledge and understanding of various structural properties of textiles and relate them to end use fabric performance and product.
- To familiarize students with the different testing equipments, their underlying principles and the international accepted standards, test methods and the language of measurement.
- To be able to analyse and interpret the result and predict the general textile testing.

Unit- 1 Introduction to Textile Testing

- Concept and scope
- Application areas
- Use of statistics in data management
- Sampling procedures

Unit- 2 Total quality management (TQM) approach in the field of Textiles & Clothing.

Unit-3 Standardization

- Standards for fabric performance.
- Organisations for Standardisation (National and International).

- Quality control of Textile products.
- Quality standards as applicable to various types of textiles (Garments, Yardage, knits, woven, carpets, processing, dyeing).

Unit-4 Properties of textiles at different stages of processing and their principle of measurement

- Fibres – length, fineness, evenness
- Yarn – strength, evenness, openness, load, elongation, crimp.
- Fabrics – strength, elongation, shrinkage, thickness, cover, air permeability, crease recovery, weight, comfort, stiffness, flammability, colour fastness.
- Garment Finishing – Colour fastness, shrinkage
- Concept of fabric faults as related to stages of manufacture and the remedies.

Practicals

1. Physical Testing of Textiles using appropriate standardized procedures

- Fibres – length, diameter, fineness
- Yarn – count, heaviness, twist, crimp, strength
- Fabric – Thread count, thickness, air porosity, abrasion, strength [Tensile Tear Bursting], water vapour permeability, cover, stiffness, drapability, crease recovery, pilling, abrasion.

2. Chemical Testing

- Identification of fibres.
- Binary Fabrics – Blend composition
- Shrinkage, water, oil repellency
- Sensitivity to various reagents.

3. Dyes

- a. Identification of dye class
- b. Colour Fastness

4. Mechanical Testing

- Seam Strength
- Identification of fabric weave, Thread count.

5. Inspection Of Final Garment

References

1. Booth, J.E.: Principles of Textile Testing – Newness Butter Worth London.
2. Billie, J. Collier and Helen H. Epps – Textile Testing and Analysis – Prentice Hall, New Jersey.
3. John, H. Skinkle – Textile Testing – Booklyn, New York.
4. Grover and Hamby – Hand book of Textile Testing and Quality Control, Wiles.
5. ISI Specification, BIS Specification.
6. ASTM Standards.