Learner's Guide :: 19

FIBRE TO FABRIC

<table>
<thead>
<tr>
<th>L.No</th>
<th>Title of Lesson</th>
<th>SKILLS</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Fibre to Fabric</td>
<td>Critical Thinking and Creative Thinking, Problem Solving and Decision Making</td>
<td>Importance and types of fibre and fabric</td>
</tr>
</tbody>
</table>

Summary

Fibre is the basic unit of fabric. Fibre may be long or short strands with a smooth structure. A fibre is a fine hair-like strand and is the basic unit of textiles from which yarns are made. From these yarns fabric is constructed.

Clothes are made out of fabrics. They cover the body, protect from adverse climates, enhance the personality and is an indication of the status of a person. Certain fabrics define religion and occupation e.g. a military uniform indicates that the person is a defence personnel. Fabric can be used to make upholstery, curtains etc. Fibre has to undergo various processes to become a yarn such as cleaning—to remove the unwanted material; carding—to arrange fibres in a parallel manner; combing—to separate short and long fibres; spinning and winding.

Weaving is interlacing of two sets of yarns—warp and weft, at 90° angles to each other. Straight yarns in a fabric are known as warp yarns and horizontal yarns are known as weft yarns. Along the length of the woven fabric, on both sides, end yarns are woven very densely and the portion is named selvedge. Knitting is the process of formation of loops of yarns and drawing of new loops through those formed previously (interlooping).

Principal Points

- Short length fibres are called staple fibres. They are measured in inches and centimetres e.g. cotton, wool and linen
- The long fibres are known as filaments and are measured in yards or meters e.g. silk and all man-made fibres
- Rayon is also called ‘artificial silk’. These fibres are thermoplastic in nature (heat sensitive)

Build Your Understanding

Silk is a natural, protein filament produced by silk worm. Silk is soft, fine, smooth, lustrous, warm and stronger than wool. Silk is known as the ‘Queen of fibres’. You have received a silk outfit. How will you determine whether the silk fabric is pure or artificial.
Did You Know?

The behaviour of the fibres on approaching the flame, in the flame, on burning by the flame and the residue left after burning can help to identify if the fibre is natural or man-made.

Burning test for identification of fibres

<table>
<thead>
<tr>
<th>Fibre</th>
<th>Near flame</th>
<th>Type of burning</th>
<th>Odour of burning</th>
<th>Residue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulosic Fibres</td>
<td>Catches fire easily</td>
<td>Continues to burn, bright flame, afterglow</td>
<td>Burning paper</td>
<td>Light, feathery, greyish-black smooth ash</td>
</tr>
<tr>
<td>Protein Fibres</td>
<td>Smoulder and burn</td>
<td>Slow flickering flame, sizzles and curl</td>
<td>Burning hair, feather</td>
<td>Silk: crisp dark ash</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wool: dark irregular crushable ash</td>
</tr>
</tbody>
</table>

Extend Your Horizon

Twists given to fibre strands for formation of a yarn can be either ‘S-twist’ (clockwise) or ‘Z-twist’ (anticlockwise). The quality and strength of yarn is affected by the number of twists per inch. Lesser the number of twists per inch, bulkier and less strong is the yarn. If there are more number of twists the yarn is finer and stronger.

Take a strand of the cloth you are wearing and untwist it to see if it is S-twist or Z-twist.

Evaluate Yourself

1. Your friend feels very hot in summers. He wants to know what fabrics would suit him in summers. Suggest two fibres and fabrics suitable for summers.
2. What kind of fibre and fabric will you select for your undergarments and why?
3. Your mother wants to buy new eco-friendly clothes. Suggest some fabrics that she can buy.

Maximize your marks

- Learn definitions
- Diagrams can help in understanding and memorising various techniques
- Learn the tables given in the chapter

CLASSIFICATION OF YARNS

- YARNS
  - Simple
    - Single strand used for lightweight and fine fabrics
  - Novelty
    - Ply/multi-strand for suiting, knitting
    - Knotted, loop, slub and feather yarn

What’s Important to Know?

Extend Your Horizon