Fabric Finishing and Laundry (Major Core)

B.A. V Semester (NEP 2020)

Unit II

Dyeing of Fabric

Methods of Dyeing

1) Bale Dyeing:

This is a low cost method to dye cotton cloth. The material is sent without scouring or singeing, through a cold water bath where the sized warp has affinity for the dye. Imitation chambray and comparable fabrics are often dyed this way.

2) Batik Dyeing:

This is one of the oldest forms known to man. It originated in Java. Portions of the fabric are coated with wax so that only un-waxed areas will take on the dye matter. The operation may be repeated several times and several colors may used for the bizarre effects. Motifs show a mlange, mottled or streaked effect, imitated in machine printing.

3) Beam Dyeing:

In this method the warp is dyed prior to weaving. It is wound onto a perforated beam and the dye is forced through the perforations thereby saturating the yarn with color.

4) Burl or speck Dyeing:

This is done mostly on woolens or worsteds, colored specks and blemishes are covered by the use of special colored links which come in many colors and shades. It is a hand operation.

5) Chain Dyeing:

This is used when yarns and cloth are low in tensile strength. Several cuts or pieces of cloth are tacked end-to-end and run through in a continuous chain in the dye color. This method affords high production.

6) Cross Dyeing:

This is a very popular method in which varied color effects are obtained in the one dye bath for a cloth which contains fibers with varying affinities for the dye used. For example, a blue dyestuff might give nylon 6 a dark blue shade, nylon 6, 6 a light blue shade, and have no affinity for polyester area unscathed or white.

7) Jig Dyeing:

This is done in a jig, kier, vat, beck or vessel in an open formation of the goods. The fabric goes from one roller to another through a deep dye bath until the desired shade is achieved.

8) Piece Dyeing:

The dyeing of fabrics in the cut, bolt or piece form is called piece dyeing. It follows the weaving of the goods and provides a single color for the material, such as blue serge, a green organdy.

9) Random Dyeing:

Coloring only certain designated portions of the yarn. There are three ways of doing this type of coloring:

Skeins may be tightly dyed in two or more places and dyed at one side of the dye with one color and at the other side with another one. Color may be printed onto the skeins which are spread out on the blanket fabric of the printing machine.

Cones or packages of yarn on hollow spindles may be arranged to form channels through which the yarn, by means of air-operated punch, and the dyestuff are drawn through these holes by suction. The yarn in the immediate area of the punch absorbs the dye and the random effects are thereby attained.

10) Raw Stock Dyeing:

Dyeing of fiber stock precedes spinning of the yarn. Dyeing follows the degreasing of wool fibers and drying of the stock.

11) Solution Dyeing:

This is also called dope dyeing or spun dyeing; the pigment color is bonded-in in the solution and is picked up as the filaments are being formed in the liquor. Cellulosic and non-cellulosic fibers are dyed to perfection by this method. The colors are bright, clear, clean and fast.

12) Yarn dyed:

Yarn which has been dyed prior to the weaving of the goods; follows spinning of the yarn. It may be done in either partial immersion or total immersion of the yarn.

Process of Dyeing

The dyeing of a textile fiber is carried out in a solution, generally aqueous, known as the dye liquor or dye bath. For true dyeing to have taken place, coloration of fabric and absorption are important determinants.

Coloration:

The coloration must be relatively permanent: that is not readily removed by rinsing in water or by normal washing procedures. Moreover, the dyeing must not fade rapidly on exposure to light.

Absorption:

The process of attachment of the dye molecule to the fiber is one of absorption: that is the dye molecules concentrate on the fiber surface.

इंडिगो डाईंग

सबसे पुरानी डाईंग कला, इंडिगो डाईंग, अत्यधिक टिकाऊ और प्रकृति के अनुकूल है। अधिकांश डाई रंगों को पत्तियों, पेड़ की छाल और जामुन से निकाला जाता है। इंडिगो डाईंग की भारत में अपनी उत्पत्ति है क्योंकि यह वह जगह है जहाँ इंडिगो की खेती की जाती थी। कई रंगों को बनाने के लिए इंडिगो डाईंग का उपयोग किया गया है, जिनमें से नीला रंग सबसे कठिन है। भारत में, डाई पेस्ट को केक रूपों में ले जाया जाता है। इसलिए, उन्हें आसानी से घरों में भी कपड़े या कपड़ों को डाईंग के लिए भी इस्तेमाल किया जा सकता है।

बाटिक डाईंग

यह तकनीक, इंडोनेशिया, में उत्पन्न हुई है, मूल रूप से यह कपड़े पर लागू मोम-रोधी डाईंग तकनीक है। इस प्रक्रिया में, आपको मोम और डाई का उपयोग करना होगा। मोम को रंगे नहीं जाने वाले भागों को अलग करने के लिए उपयोग किया जाता है और डिज़ाइन में आवश्यक रंगों को जोड़ने के लिए डाई का उपयोग किया जाता है। बाटिक का भविष्य अन्य डाईंग कलाओं के साथ सुनहरा और संलयन हो सकता है जो इसे शानदार बना सकते हैं। इंडोनेशिया और उन सभी देशों ने जो इस डाईंग की पद्धति का उपयोग करते हैं, इस कला को संरक्षित करने और विकसित करने की दिशा में सही कदम उठाने की आवश्यकता भी है।