

Topic: TEXTILE AND CLOTHING

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Dyeing:

Dyeing is the methods of applying colour to white fabrics. **Dye is a substance which is fixed more or less permanently on the fabric which evokes colour.**

Types of Dyes: Dyes are classified according to hue produced, chemical class, method of application and the types of fibers to which they are applied. Some of the different dyes include:

1. Direct Dyes: Direct dyes are water soluble and are applied mostly to cellulosic fibers. These dyes are dissolved in water and salt is added to control the absorption rate of the dye by the fiber. Then the cloth which is to be dyed is immersed. Direct dyestuffs have relatively excellent light fastness and good colourfastness to sunlight.

2. Acid Dyes: Acid dyes are used on protein, acrylic and nylon fibers. They have no affinity for cellulosic fibers and are not suitable for fibers which are sensitive to weak acid solutions. They have excellent lightfastness and some have good colourfastness to dry cleaning and perspiration.

3. Basic Dyes: Basic or cationic dyes are excellent for colouring acrylic fibers. They are mostly used as “topping” colours to give brilliant colour effects on fabrics. Because of the variety of colour effects produced, it is successfully used on modified nylon and modified polyester.

4. Vat Dyes: Vat dyes have excellent colourfastness property and is suitable on all cellulosic fibers and man-made fibers. It is not suitable on protein fibers because of the alkaline bath which will damage the fibers. There is a wide choice of colours in vat dyes and they withstand hard wear and are fast colours.

5. Reactive Dyes: Reactive dyes are suitable for mostly all fibers cellulosic, wool, nylon, silk, acrylics, as well as blends. Bright colours with excellent wash fastness & colour fastness are obtained. Colour fastness to crocking, perspiration and fume fading are excellent.

Application of Dyestuffs There are four stages of manufacture in which colour may be applied to textile materials.

a) Solution: Pigments or dyestuffs are dispersed in the spinning solution where the fibers are manufactured. There are some difficulties in this process of obtaining colour on fabric.

b) Fiber Dyeing: Fibers are dyed in their loose state where the fibers are less tangled and dyed thoroughly. Fiber dyeing is expensive to produce. There is better penetration of the dye into the fiber which produces a higher degree of colour fastness on fabrics. Direct, sulphur, vat and developed dyes are used on cellulose fibers.

c) Yarn Dyeing: Yarns are dyed by three methods namely, skein dyeing, package dyeing and beam dyeing. Yarn dyeing is best adapted to large- quantity dyeing. Gingham, chambrays, denims and madras are dyed by this method. Vat dyes are mostly used as well as limited amount of other dyes.

d) Fabric Dyeing: Fabric dyeing consists of either piece dyeing the fabric or printing followed by an after treatment to fix the dye. Piece dyeing is nothing but most solid colour fabrics are dyed after the fabric has been completed. Fabrics made of cellulosic fibers, cotton; rayon and flax are most frequently piece dyed.