



TRINITY COLLEGE FOR WOMEN NAMAKKAL

DEPARTMENT OF COSTUME DESIGN & FASHION

**TEXTILE SCIENCE
ODDSEMESTER**

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WEAVING AND WOVEN FABRIC

INTRODUCTION

Out of the many innovative techniques that man has adopted from nature, weaving is one. It is a simple method of producing a net-like structure that is stable and durable. In order to achieve that, the process of weaving makes two sets of threads or yarns interlace with each other at right angles. Such an interlaced structure ensures strength and durability to the fabric, referred to as the woven fabric, which is produced. The nature of this interlacement can be varied on the basis of the frequency of interlacing points and their distribution over the plane of the fabric. These parameters determine the major properties of a woven fabric.

LOOM

The process of manufacturing a fabric from different sets of yarns is termed as weaving. It necessarily involves the interlacing of two sets of yarns at right angles to each other, termed as the warp and the weft yarns respectively. In order to achieve this, the machine that has been developed over the ages is known as the Loom. A loom traditionally used to be a wooden frame where the warp sheet will be laid down from one end to the other under tension. After the warp sheet is set, the weft yarn will be introduced one by one by allowing appropriate gaping in the warp sheet. The distribution of these gaps may be according to a predetermined interval, and the nature of these intervals determines the weave of the fabric being produced



BASICS MOTIONS OF LOOM

(i) Shedding: This is the operation that helps in opening up the warp sheet creating the gaps through which the weft yarns will pass. In order to do this operation, primitive looms had the wooden shafts that were lifted by hand or by leg-driven pedals, as in handlooms. In power looms, this is done with the help of electricity, and the shafts were cam-driven initially. But this hampered the loom productivity as well as the design size was limited. So, later on, developments have evolved the dobby and then the jacquard mechanisms for shedding. In dobby, the design size is larger, giving the weaver or designer an increased scope for design exploration.

(ii) Picking:

This is the operation in which the weft or the pick, also referred as the fill, passes through the open warp sheet. There are various methods of carrying the weft across the full width of the loom. In the most primitive way, a shuttle was used, which is a wooden missile-like structure with a weft pirn would carry the weft yarn inside it. The shuttle was mechanically thrown from one side to the other.

(iii) Beat-up:

This is a very important operation of the loom. After shedding and picking, the beat-up action is to ensure that the newly introduced weft is closely packed in the body of the fabric.

CLASSIFICATION OF WOVEN FABRIC

The nature in which interlacements occur between the warp and the weft is referred to as the weave of the fabric. Based on the different types of weaves that are possible, fabrics can be broadly classified into the following categories:-

- (i) Fabrics with plain weave.
- (ii) Fabrics with twill weave.
- (iii) Fabrics with satin weave.

SPECIFICATION OF WOVEN FABRICS

Like chemicals, a woven fabric also needs to be identified uniquely for easy understanding and communication. However, unlike the IUPAC system in chemistry, there is no hard and fast way of woven fabric nomenclature. The different fabrics are well known across the globe by their common names like muslin, poplin, denim, canvas, velvet, terry pile and many others.

Although these names are successfully used to communicate and refer to the different fabric in between a buyer and a seller in the same country, when one has to deal with cross country orders, sometimes there can be confusion. This is owing to the fact that in different parts of the world, the meaning of these common names can vary slightly or majorly.

THANK YOU

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