**Lecture 6: Plain Weave**

**Classification of Basic Weave:**

There are three types of basic weaves. They are as follows:

* Plain Weave
* Twill Weave
* Satin or Sateen Weave.

**Characteristics of Plain Weave:**

* Both sides of the weave are identical.
* It comprises a high production of the total output of woven fabric.
* The plain weave is made from all kinds of raw materials and yarns, i.e., Cotton, Linen, Jute, Man-made fibres both spun and continuous filament yarn.
* Thread interlacement is in alternative order.
* Each thread gives maximum amount of support to the adjacent threads.
* Texture is stronger and finer than any other structure.
* Friction as well as stress on warp yarn is reduced by *“Skip draft”.*

**Ornamentation of Plain Cloth:**

Ornamentation of Plain cloth can be done –

* By using extremely fine yarn, E.g. Muslin
* By using coarse yarn, E.g. Jute Hessian
* By using threads of different colors which are combined in check form.
* By using the threads on both warp and weft that may vary in color and count.
* By using *Fancy Slub* Yarn.
* By using two warp beam in different tension.
* By using different twisted yarn
* By using different textile materials.
* By using special shaped reed.

**Some Trade Names of Plain Cloth:**

* Muslin
* Linen
* Alpaca
* Taffeta
* Calico
* Long Cloth

**Classification of plain weave:**

A.

1. **Approximately square cloth**:

* Warp count = weft count.
* Thread density equal i.e. E.P.I. = P.P.I.
* Warp and weft faces are equal on both sides of the cloth.
* Warp crimp = weft crimp.
* Warp cover factor = Weft cover factor.

Fabric specification: 

Uses: Cheese cloth, surgical dressing, tracing cloth.

1. **Warp faced cloth:**

* Prominences of warp yarn are more than that of weft yarn.
* Finer warp yarn but coarser weft yarn.
* Warp crimp > Weft crimp.
* Fabric shrinkage to the warp.

Fabric specification: 

Uses: Gavadin, Terylene.

1. **Weft faced cloth:**

* Prominences of weft yarn are more than that of warp yarn.
* Finer weft yarn but coarser warp yarn.
* Weft crimp > Warp crimp
* Fabric shrinkage to the weft.
* Production cost of this fabric is high.

Fabric specification: 

Uses: Cotton lirnbric, cotton casement cloth etc.

**(B)**

1. Balanced cloth.
2. Unbalanced cloth.
3. **Balanced cloth:**

* Warp count = Weft count.
* EPI = PPI
* Warp and weft faces are equal on both sides of the fabric.

Fabric specification: 

* + 1. **Unbalanced cloth:**
       - EPI = PPI but warp count weft count.  
         Fabric specification: 
       - Warp count = weft count. But EPI PPI.  
         Fabric specification: 
       - Warp count Weft count; EPI  PPI.  
         Fabric specification: 

**Derivatives of Plain weave:**

**Plain Weave**

**Rib Weave**

**Matt Weave**

Regular Matt

Irregular Matt

Stitched Matt

Fancy Matt

Weft Rib

Warp Rib

Regular Warp Rib

Irregular Warp Rib

Regular Weft Rib

Irregular Weft Rib