KNOW TEXTILE PROCESSING SEQUENCES AND INDIAN TEXTILE PROCESSING SECTOR

1) Importance of Textile Processing

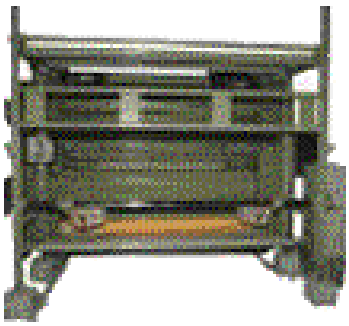
- **Presents the textile product in aesthetic and presentable form, suitable for marketing.**
- **Imparts functional properties to the textile product**
- **Realises multifold value addition (upto 120%).**
- **95% of the textile goods are processed in one form or other.**

The processing of textile goods involves the following steps :-

2) Various Processing sequences

- **Shearing and Cropping :-**

In woven fabric some loose and broken threads remain protruded/hang out of the surface of the fabric on account of broken ends/weak yarn. These loose threads give a shabby look to the fabric and interfere in the process of dyeing / printing of the fabric. They pick up colour from the dye bath / printing paste trough when the fabric is passing through such dye bath / trough and leave a deep impression in the shape and size of the loose thread, on the fabric when it is passing through the subsequent guide rolls / machine parts. This is an unaccepted damage to the dyed / printed fabric. **In the process of shearing / cropping the fabric is passed through shearing / cropping machine consisting of a set of spiral blades whereby such loose threads are cut and separated.** *Nowadays due to improved yarn quality and weaving technology problem of loose threads is almost absent and hence normally there is no necessity of performing the process of shearing / cropping.*

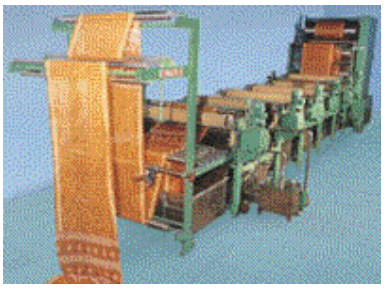


- **Singeing :-**

When a fabric is woven with poor quality fibres / fibres of short staple length, such fibres protrude from the surface of the fabric giving a fuzzy / hazy appearance. This effect also interferes in the process of dyeing /printing whereby protruded fibres pick up more dye / print paste. **Singeing is done on a singeing machine wherein fabric is passed at a high speed through effluent emanating from a set of burners.** Such singeing can be done on one phase or both the phases of the fabric. Quality of burners decides the cost of such singeing machines.

- **Desizing & Scouring:-**

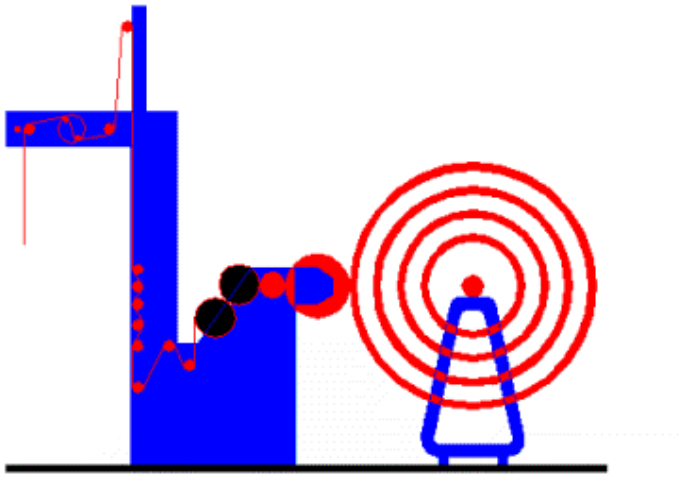
In order to withstand the stress and strain during the process of weaving, warp yarn is quoted with a sizing agent such as starch or a synthetic polymer. Once the fabric is woven, the size applied on the warp yarn has no purpose. Further, the size being hydrophobic in nature interferes in wet processing since all the dyes / chemicals are applied through water medium. The size is therefore required to be removed. **This process of removal of size from the fabric is known as Desizing.** Desizing is done by using machines of various technology depending on the technological status of the processing unit.



Cotton fibre contains natural impurities including wax, fat etc and some added impurities which are not removed during the process of desizing. This fat / wax etc being hydrophobic in nature interferes in the further wet processing. **The fat / wax etc can be removed in the process of scouring.** In case of cotton fabric, it is treated in alkaline conditions at boiling temperature and / or under pressure whereby saponification and emulsification makes such fats / waxes separated from the fibre. Process of scouring is also done for synthetic fabrics if size has been used but the process is not as drastic as in case of cotton fabrics. For wool fibres the process of scouring is done using detergent. In case of silk natural sericin gum is removed with the help of alkali and detergent in the process known as silk degumming. Depending on the nature of fibres the machines of appropriate technology are used in the process of scouring / degumming.

- **Bleaching :-**

  Bleaching is the process of discolouration. In respect of cotton / wool / jute fibres, it is done to destroy the natural yellowish / yellowish brown colour. In respect of synthetic fibre / fabrics it is done to improve the whiteness. Bleaching is done using various chemicals on different type of processing machines depending on the technological status of a processing unit.



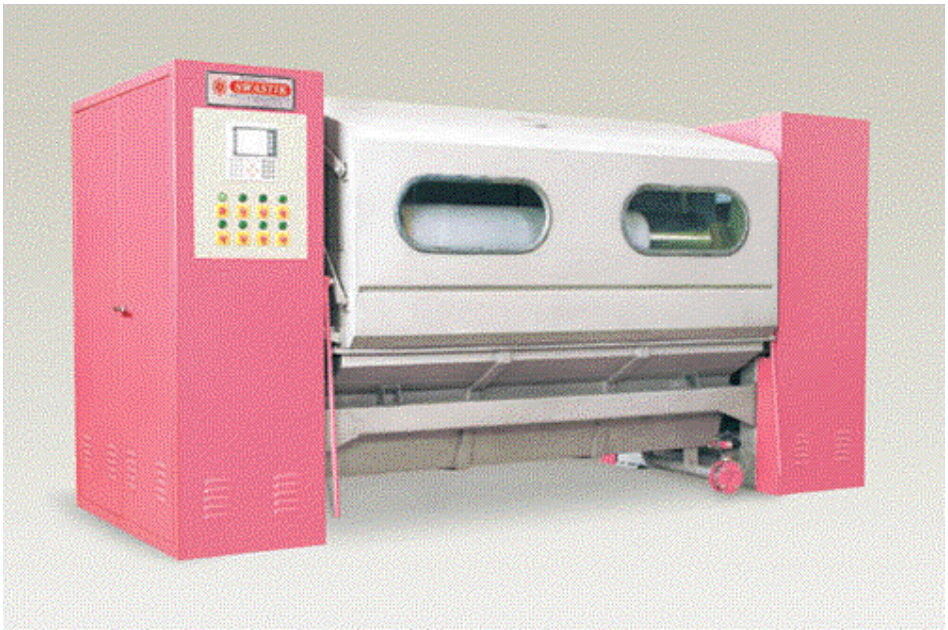
COLD PAD BATCH BLEACHING / DYEING RANGE.

- **Mercerising :-**

  Mercerising is carried out for cellulogic portion in blended fabric or for 100% cellulogic fabrics. It is carried out with caustic alkali or ammonia of specific concentration followed by washing under stretched conditions. The process brings in parallelisation of cellulogic molecules, on swelling of fibre to cylindrical form, resulting in lusture and increased dye affinity.

- **Dyeing :-**

  Dyeing is the process of colouration of fibres /fabrics. It presents the textile product in attractive colours. Dyeing is done with various class of dyes on various type of processing machines depending on nature of fibre, end use of the textile product and technological status of a dyeing unit.

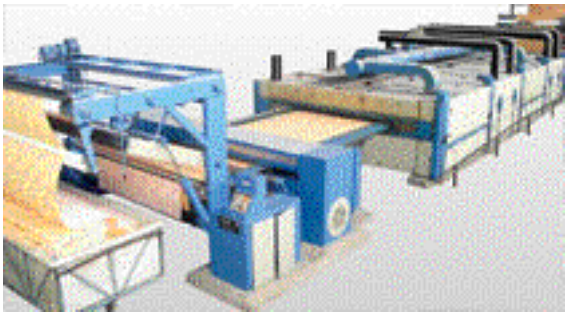


- **Printing :-**

  Printing is like local dyeing of a textile product. Colour is applied in the form of various motifs depending on the design. It presents the textile product in attractive colours and designs. Printing is also done on various machines depending on style of printing, method of printing, nature of fibre / fabrics and technological status of the processing unit.

- **Finishing :-**

  Finishing is done to impart functional properties to a textile product. This is done with the help of various chemical auxiliaries depending on the end use of textile product. Depending on the end use a textile product can be made soft, stiff, flame proof, water proof, stain, spill, oil, water, flame resistant etc. Depending on the end use, nature of the fibre / fabric and technological status of the unit, various type of processing machines are used in the process of finishing.



SEGMENTATION AND CLUSTERS

The Indian textile processing sector is highly fragmented. It can broadly be divided into following three segments :-

i) Processing facilities attached to composite textile mills **(Hi-Tech Segment) .**

ii) Non-SSI independent power processing units **(Medium to Advanced Technology)**

Clusters of Independent Power Processing Units			
Ichalkaranji,	Dombivili	Navi Mumbai	Tarapur
Bhiwandi	Surat	Ahmedabad	Ludhiana
Amritsar	Tirupur	Karur	Salem
Erode			

iii) Small scale processing units **(Hand operated / motor operated primitive technology locally fabricated / power operated low technology machines)**

Clusters of Processing Units having hand and / or country made mechanised machines / power operated processing machines			
Erode	Nagri (A.P.)	Pali (Raj.)	Balotra (Raj.)
Jetpur	Jodhpur	Jaipur / Sanganer	Sircilla (A.P.)
Tirupur*	Karur	Salem	

* Some clusters have both, category ii) & iii) type units

- **No. of Power Processing Units - Textiles Committee Census**

❖ **Total no. of power processing units (2005 census)**	2510
Composite	59
Semi-composite	167
Independent	2284
❖ **Technology Status (1999 census)**	
Modern Technology	227
Medium Technology	1775
Low Technology	322
❖ **Vintage (1995 census)**	
Pre 1980 period	19%
1981 – 85 period	9%
1986 – 90 period	21%
1991 – 95 period	27%
1996 – 99 period	22%