1.1Flow chart:

1.1.1 Flow chart of wet processing technology

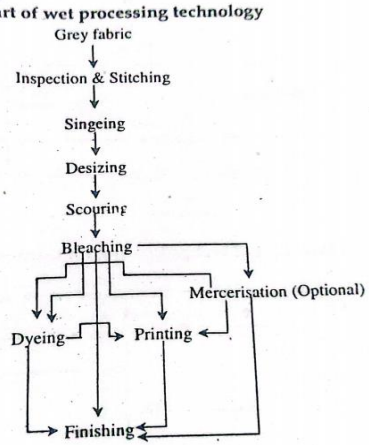
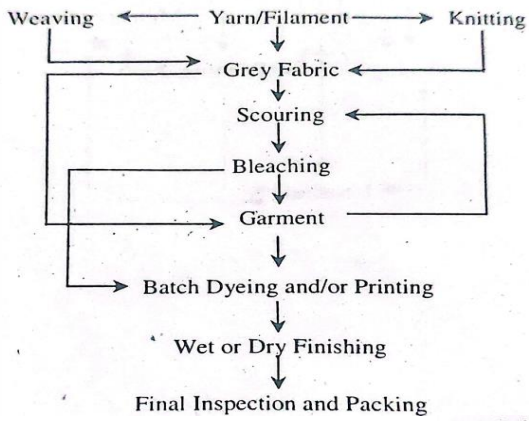


chart of wet processing for Garments:



3.2 Difference between soap and detergent:

Soap	Detergent
1. Soap is sodium or pottasium salt of higher fatty acids.	1. Detergent is sodium or pottasium salt of long chain benzene sulphuric acid or sodium salt of a long chain alkyl hydrogen sulphate.
2. Soaps are produced from natural oils and fats.	2. Detergents are produced from hydrocarbons of petroleum.
3. Soap can give effective cleaning action to soft water only.	3. Detergent can give to both soft and hard water.
4. Soap is generally used for cleaning agent in domestic purpose.	4. It is used in textile purpose such as finishing, dyeing, laundry mills etc.

3.6 Compare Plate, Roller & Gas singeing :

Plate Singeing	Roller singeing	Gas singeing
1. One side of fabric is singed.	1. One side of fabric is singed.	1. Both side of fabric is singed.
2. Uniform temp can not be maintained.	2. Uniform temp can not be maintained.	2. Uniform temp can be maintained.
3. Extra lusture produce, due to friction between	3. Extra lusture produce, due to friction between	3. No extra lusture is produced.

Source of water/type of water:

1. Rain water
2. Surface water
3. Subsoil water
4. Deep well water

3.12 Stripping:

If the textile goods become uneven dyeing and unsuitable for using, the colour has to be removed. The process is called stripping.

The colour can usually be removed -

- by boiling with sodium hydrosulphite,
- by bleaching with a solution of sodium hypochlorite containing 1 to 2 gm per litre of available chlorine, or
- by boiling with 1 to 2 percent of sodium chlorite which has been brought to a PH between 3 to 4 or acetic acid.

4.2 Types of singeing:

1. Plate singeing.
2. Roller singeing.
3. Gas/ Flame singeing.

4.2.1 Plate-Singeing:

The main parts of plate singeing:-

- Two copper plate &
- Fire clay.

Copper plates are set up on the fire clay which is heated with farness (gas and oil or oil jet).

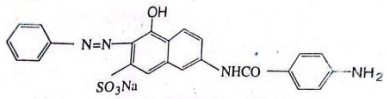
- At first the fabric opening with guide roller is passed over the plate with drawn roller.

3.4 Chemical Classification of Direct dye:

1. Azo derivatives:

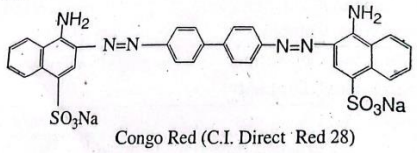
Most of the colors belonging to this class are sulphonated compounds.

a) Monoazo:



Diazoraine scarlet 5B(C.I. Direct Red 14)

b) Di-azo:



Congo Red (C.I. Direct Red 28)

1.4 Classification of hardness:

1. Temporary hardness.
2. Permanent hardness.

1. Temporary hardness: Temporary hardness is due to the presence of bi-carbonates of calcium and magnesium. This type of hardness is called temporary hardness. Because it can be removed by easy means like boiling. When temporary hard water is boiled, the carbonates decomposes with liberation of Carbon-dioxide and precipitation of the insoluble Carbonates which are reformed.

$$Ca(HCO_3)_2 \xrightarrow{\Delta} CaCO_3 \downarrow + CO_2 + H_2O$$

$$Mg(HCO_3)_2 \xrightarrow{\Delta} MgCO_3 \downarrow + CO_2 + H_2O$$

3.11 Cotton dyeing with Direct dye:

Typical recipe–

Wetting agent=1.0-2.0gm/L
Sequestering agent=1.0-2.0gm/L
Leveling agent=0.5-1.0gm/L
Direct dye→ x%
Soda ash → 1-5gm/L
Glauber or common salt –
5gm/L [for light shade]
10gm/L[for medium shade]
20gm/L [for dark shade]
PH→ neutral or slightly alkaline,
M:L→ 1:5-1:10
Temperature=90⁰-100⁰C
Time =60-90min.

Dyeing process:

The dyeing process is described below:

2.3. Fabric dyeing machine:

a. Jet dyeing machine
b. Jigger dyeing machine
c. Beam dyeing machine
d. Winch dyeing machine
e. High temp winch dyeing machine

2.1. Fiber dyeing (Loose stock form):

a. Conical pan loose stock dyeing
b. Annular cage for loose stock dyeing
c. Hussong loose cotton dyeing machine
d. Jagenburg dyeing
e. Clauder-Weldon dyeing