REF: TT/ SEPT.09/WK3

PREPARATORY CHEMICAL PROCESSING FOR POLYESTER

SINGEING

Singeing is a pretreatment for PET-cellulosic blend fabrics (not 100% PET fabric). The modern gas singeing machines have efficient and computer controlled burners, which can control the width, height, angle and intensity of the flames.

PROBLEMS:

Any uneven heat transfer is liable to cause variations in the setting of PET fibers, resulting
in uneven, dyeing of fabric.

- In singeing protruding PET fibers tend to form globules which are difficult to remove.
- The globules dye deeper shade than the original fiber, when dyeing is carried out by exhaust method.

REMEDIES:

Singeing as a pretreatment should only be carried out if the dyeing is to be done by continuous thermo sol method.

- Singeing effect, if one or more passages are given, can reduce the pilling effect on the fabric, leading to better usage and thus in such cases singeing acts as post treatment machine.

SETTING OF POLYESTER

In order to achieve good shape retention and to prevent the marking of running creases during wet processing, PET fibers and their blends must be stabilized. In other words, tensions within the fibers individually and in the fabric are leveled out by relaxation. Heat setting of PET is carried out at 1800C to have 0% residual shrinkage (natural shrinkage) and process of primary crystallization gets completed.

PROBLEMS:

- Measurement of surface temperature of fabric
- Speed uniformity in machine
- Non uniformity in setting effects for large run of fabrics
- Incomplete removal of residual shrinkage (0% shrinkage never achieved)
- Excessive shrinkage causes problems in subsequent processes

REMEDIES:

- Fabric surface temperature can be measured accurately and precisely using infrared sensing thermometers
- Residual shrinkage measurement in lab must be carried out (should not be more than 0.5%).
- Relaxation of fabric can be precisely achieved by over feed arrangement.

Modern hot air stenter be used for the accurate speed adjustment, measurement of humidity of air, overfeed, and all information available at finger tips