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Important Factors that Affect the Textile Finishing

Higher TDS Affects Finishing

Total dissolved solids: TDS depending on their nature generally cause harshness, coloration (Yellowing/dullening) and sometimes undesirable sensitivity to skin (presence of salts)

Hardness in Water

Where hard water is used it is necessary to determine that there is no bicarbonate hardness, as this will neutralize the slight acidity required where acidic conditions are required. The bicarbonate hardness will continue to be present even after normal ion exchange, unless properly designed hydrogen cycle and blending is included in the ion exchange treatment system. The calcium and magnesium permanent hardness is relatively less interfering in the case of cationic softeners, except that they are likely to cause harsh feel to the fabric. Mg and Ca hardness will generally precipitate anionic softeners. Non-ionic softeners are also not so much affected.
Absence of awareness of the influencing characteristics of the substrate on the finishing chemicals and or the process conditions would lead to unsatisfactory results.

Compatibility of different finishing chemicals

There are quite a number of factors making the chemicals/softeners used in a recipe mutually incompatible- the ionic characteristics, solubility, emulsion stability, pH conditions etc. Stabilizers used in an emulsion may be disturbed by 'new'/alternate additive in a recipe, thus cause break up of the emulsion.
When two or more finishing chemicals in a recipe is contemplated or when recipe is changed for reasons of non-availability of one of the components, it is desirable to check their mutual compatibility in the laboratory before administering in bulk.

Strength of the finishing agent

It is desirable to apply the recommended level of the softener. Commercial softeners/finishing agents come in different strengths and it is the active matter that is important. Some cases dilution needs to be done to a working concentration level from concentrated pastes/emulsions with the application level fixed.

Influence of moisture regain

Cotton regains 7 to 8% of moisture. This plays an important role in the feel of the fabric. Over dried fabrics tend to feel relatively harsh despite application of softeners. It is also

necessary to have satisfactory moisture regain before finishing by padding methods particularly resin finishes to facilitate better and even diffusion and penetration of the finish.

It is desirable to control the drying of the fabrics to moisture regain level using control instruments like Textometers in a stenter operation or cool tumbler in the drying of the garments. There are conditioning cycles in the drying operations in the modern machinery in the batch wise processes also - i.e. like in yarn drying.