FABRIC COMFORT

Miscellaneous:

FABRIC POROSITY:

- The percent of open space per unit volume of a fabric.
- Porosity 'h' of a fabric is defined as the ratio of open space to the total volume of porous material calculated from the measured fabric thickness and weight per unit area of fabric using the equation:
- Air permeability and porosity are very closely related properties, although the relationship is not so simple.

Pore volume:

Pore Volume (%) = (S-S') ×100 / S

Where

S= Specific gravity of fibres

S'= Apparent specific gravity of fabric

Apparent specific Gravity:

Apparent specific gravity of fabric = W / (1000 × t)

Where W: Mass per square meter (g/m^2)

t: thickness (mm)

Mass per unit Area:

- Sample size of 20 cm X 20 cm
- Obtain the mass of each specimen under the standard conditions
- Area measurement and cutting should be to an accuracy of 1%
- Express the mass per unit area in terms of an average mass in grams per one square meter or oz/sq. yd.
- Equipments: Scale, Scissor, Sample cutter, Weighing balance

Fabric Thickness:

- Thickness gauge measures the fabric thickness.
- The thickness value of most textile materials varies considerably depending on the pressure applied to the specimen at the time fabric thickness is taken.
- Pressure applied be specified when mentioning any thickness values.
- Also the textile material is resilient, the thickness reading will not be stable for the few seconds after putting the sample under thickness measurement gauge.

- Therefore it is essential to specify the normal pressure as well as time interval during the thickness measurement
- Porosity of fabric depends on the *compressibility* of fabric

Compressibility:

- Compressibility of fabric is defined as the extent of reduction in thickness with the application of normal pressure
- During compression, the space between the fibres is decreased until they eventually come into contact with one another. Thus porosity also changes.
- Logarithmic relationship (Pressure Vs. Thickness)
- Ability of a fabric to recover from compression is known as "compression resilience"
- Higher resiliency better retention of flow characteristics.

Digital Thickness Tester:

A Digital Thickness Tester is used to measure the gauge or thickness of a fabric which is directly correlated to fabric insulative properties, porosity, as well as a fabric's capacity to drape over a three dimensional form. The measure of fabric thickness is an essential element of a fabric's usefulness in product form.