**Flexural property**

The behavior which shows by textile material during bending is called flexural property.

 1. Flexural rigidity

 2.   Bending recovery

 3.   Bending modulus

**1. *Flexural rigidity*:** Flexural rigidity is the stiffness of a textile fiber. It can be defined as the couple needed to bend a fiber.

Mathematically,

Flexural rigidity = (1/4π) (ηET2/ρ)

 Where, η = shape factor,

E = specific shear modulus,

T =linear density (Tex),

 ρ = density (gm/cm3)

***Specific flexural rigidity*:** Specific flexural rigidity can be defined as the flexural rigidity of linear density.

Mathematically,

Specific flexural rigidity = (1/4π)(ηE/ρ)

Where, η = shape factor,

E = specific shear modulus,

ρ = density (gm/cm3)

**2. *Bnding recovery*:** The recovery from a given curvature is called bending recovery.

Say, nylon shows 100% recovery from small curvature of 15D, where it shows 20% recovery from large curvature.

Unit = N-m2/ Tex.

**3. *Shape factor*:** shape factor is a number that indicates the shape of a fiber. Shape is expressed by “η”.

If, η = 1, it indicates the shape of fiber is round.

If, η > 1, it indicates the shape of fiber is increased.

If, η < 1, it indicates the shape of fiber is decreased.