Crease

Crease: This is a fabric defect (undesirable property) evidenced by a break line or mark in a fabric generally caused by a sharp fold. Crease are a fold in a fabric introduced unintentionally. Crease appears when the fabric is distorted in such a manner that part of it is stretched beyond its elastic recovery. During creasing the upper surface of fabric goes on extension and lower surface goes on compression.

Crease Resistance: Crease is a fold in a fabric introduced on intentionally at some stage of processing and the resistance to creasing of textile material during use is known as crease resistance. The crease resistance of wool fibre is very good but for the cellulose material it is not good. Amongst the textile materials the order of diminishing crease resistance is wool, silk, acetate rayon, viscose, rayon, cup ammonium rayon, cotton, flax etc.

Crease recovery: It is the property of a textile material by which it can return to its former shape after being creased. The measure of crease resistance is specified quantitatively in terms of crease recovery angle. The crease recovery of a fabric can be increased by resin treatment.

Difference between crease resistance and crease recovery:

Crease Resistance	Crease Recovery
Crease resistance is such a property of fabric that resists fabric from creasing.	Crease recovery is a fabric property that indicates the ability of fabric to go back to its original position after creasing.
Crease resistance is generally measured by bending elasticity.	Crease recovery is the measure of crease resistance specified quantitatively in terms of crease recovery angle.
Crease resistance comes into play before the fabric is creased.	Crease recovery comes into play after the fabric has been creased.
Crease resistance resists the stretching and compression of molecular chain of fibre polymer.	By crease recovery property the stretched or compressed polymer chain comes back to normal position.

Advantages of Resin Treatments:

- Improved resistance to and recovery from creasing.
- Smooth drying properties after laundering.
- Durable effects may be imparted by intermediate mechanical treatment.
- Reduce laundry shrinkage.
- Increase dry tensile strength and greatly increased wet tensile strength of rayon.
- Improved fastness to washing and rubbing of most dyes.
- Decrease water-imbibition and more rapid drying.
- Improved handle and drape of fabrics.
- Increased weight.
- Increase resistance to distortion of fabrics with improved retention of garment shape and freshness.
- Improved resistance to slippage and fraying.
- Vehicle for modern flame-proofing.
- Increased resistance to photo-degradation and weathering.
- Increased resistance to rotting.

Disadvantages of Resin Treatments:

- Lower abrasion resistance for misapplication of the finish.
- Lower tearing strength for misapplication.
- Unpleasant odors under certain condition.

Methods of Measuring Crease Recovery

The Tootal test.
The Shirley crease recovery test.
Continental method.
The L.I.N.R.A sunray crease evaluator.

Shirley Crease Recovery Test:

Crease Recovery is measured quantitatively in terms of crease recovery angle.

Principle: A wrinkle-free rectangular specimen of prescribed dimension is folded in half and compressed under a load for a specified time. The load is then removed and the specimen is allowed to recover for the specified time. The amount of recovery is expressed as the angle between the limbs of the fold which is called the crease recovery angle.

Preparation of Test Specimens: Ten test specimens are cut from the fabric with a template, 2 inch long by 1 inch wide. Using a pair of scissors or blade with their longer side parallel to

warp and weft threads respectively the specimens cut in such a way that no two warp way specimens contain the same set of warp yarns and no two weft way specimens contain the same set of weft yarns. The specimens should not be cut from creased, bend or other deformed parts of the sample and also not from within 2 inches from the selvedges.
Since the moisture present in the fabric influences the results of the tests carried out after conditioning in the standard atmosphere.

Construction:

- The instrument consists of a circular dial, graduated in degrees along its periphery with an accuracy of 0.5 degree which carries the clamp for holding the specimen.
- Directly under the center of the dial is a knife edge and an index line for measuring the recovery angle.
- The scale of the instrument is engraved on the dial.
- Specimen clamp to hold one limb of the specimen in such a way that the fold lies in horizontal line on the axis of the circular scale.
- Leveling screw for leveling the apparatus.

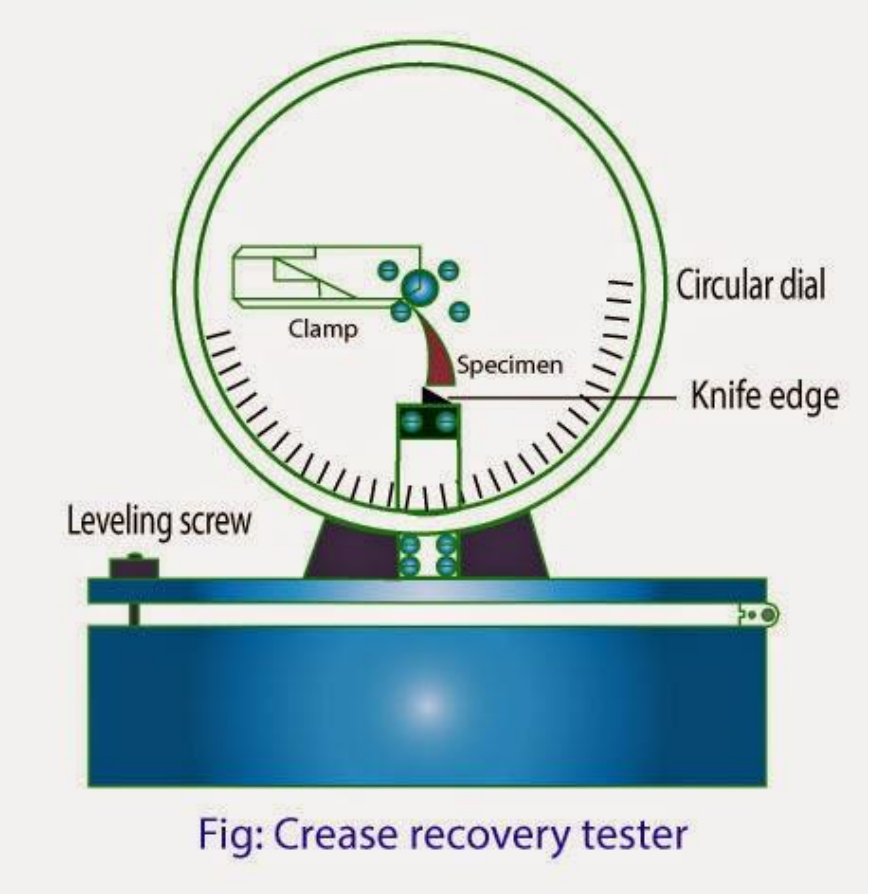

Fig: Crease recovery tester

Working Procedure:

1. A specimen is cut from the fabrics with a template 2 inch long by 1 inch wide.
2. The instrument is levelled with the help of levelling screws.
3. The specimen is folded gently end to end with its edges in one line, with the help of the tweezers. The edges should not be gripped more than 5 mm in the tweezers. The folded specimen is placed on the lower plate of the loading device and 2kg load is applied gently.
4. Half the number of test specimens, both warp and weft, should be folded face to face and other half back-to-back.
5. After 1 min the weight is removed and the specimen transferred to the fabrics clamp on the instrument and allowed to recover from the crease.
6. As it recovers, the dial of the instrument is rotated to keep the free edge of the specimen in line with the knife edge.
7. At the end of time period allowed for recovery, usually 1 min, the recovery angle in degrees is read on the engraved scale.
8. Warp and weft way recovery are reported separately to the nearest degree from the mean value of ten tests in each direction.
9. The test Should include the following:
   a) The types of fabric tested
   b) Number of tests performed
   c) Load Applied
   d) Time of creasing
   e) Time of recovery
   f) Mean crease recovery angle for Warp way specimen and Weft way specimen

Wrinkle: (Many says, same as crease)

Short and Irregular creases
Three dimensional creases
They form when fabric undergo double curvature.

Crease Mark: Crease mark are marks left in a fabric once caused by mechanical damage.

Causes of Crease:

Applied Pressure
Temperature Change
Relative Humidity Change
Poor Construction
Poor fitting garments

Factors of Crease:

Fibre Properties

Co-efficient of Friction (high inter fibre friction will not allow to reshape)
Bending Modulus
Bending Recovery

Fabric Construction

Yarn Construction
Types of weave/knit

Minimizing Crease:

- Using thick fibre
- Discouraging rapid change in Temperature and Relative Humidity
- By using flat seam during sewing
- Treating chemically during finishing