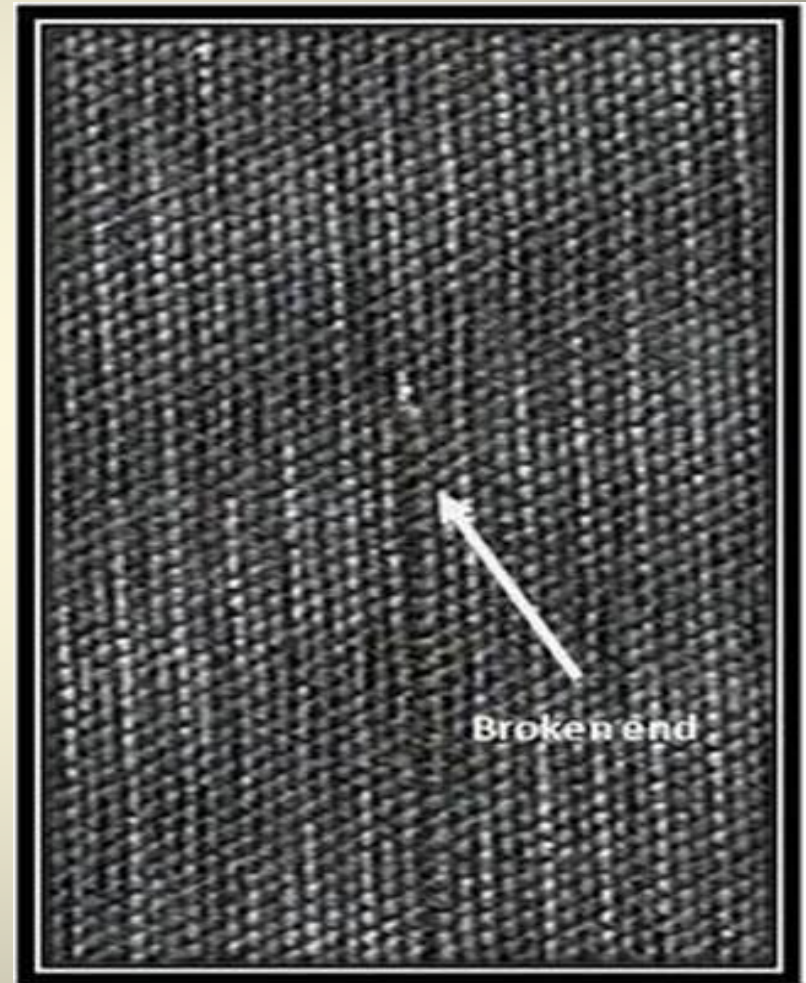


# IDENTIFICATION OF FABRIC DEFECTS

- Fabric defects are identified during the grey inspection of the fabric after weaving or knitting.
- These defects are classified into three groups:
  - I. Avoidable and unavoidable
  - II. Major and minor
  - III. Mendable and unmendable
- While most of the defects in the fabric are avoidable some are unavoidable such as certain floats/smashes.
- Defect such as weft crack is considered to be a minor if it is within 1-2cm while the same defect is major when it is more than 2cm.
- Certain defects such as isolated snarls could be mended while the others such as big cracks are unmendable.

# WOVEN FABRIC DEFECTS

- **Broken Ends:** This is a void in the warp direction due to yarn breakage. This defect is caused by bunch of broken ends woven in the fabric.



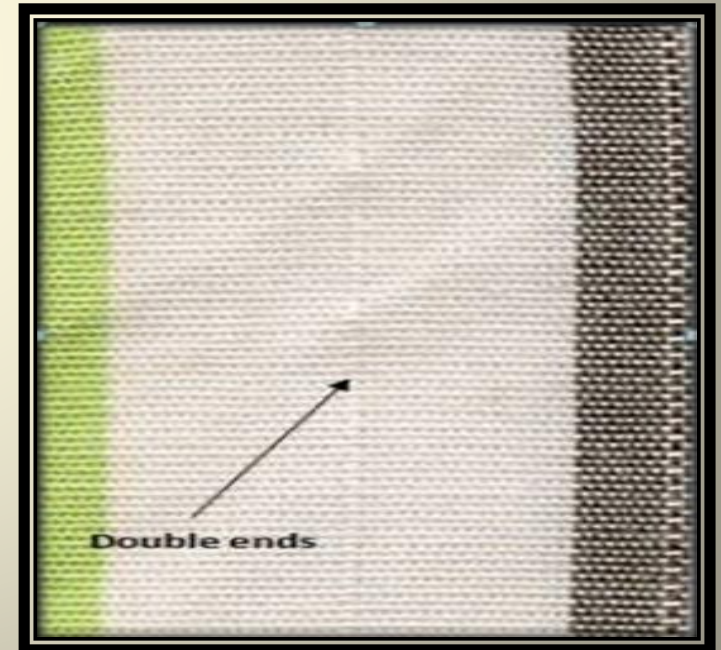
- **Broken pick:** This defect is due to discontinuity in the filling direction caused by a break or cut in the filling yarn. It causes sharp discontinuity in the weave pattern over the part of the pick length. Also it is due to the failure of the weaver to detect it and replace it in time. Controlling the weft breaks by improving the quality of yarn, looking into the factors responsible for weft breaks due to pirn and shuttle accessories and training the weaver are the remedies to reduce defects of this kind.



- **Broken Pattern:** It is the discontinuity of weave or design pattern.



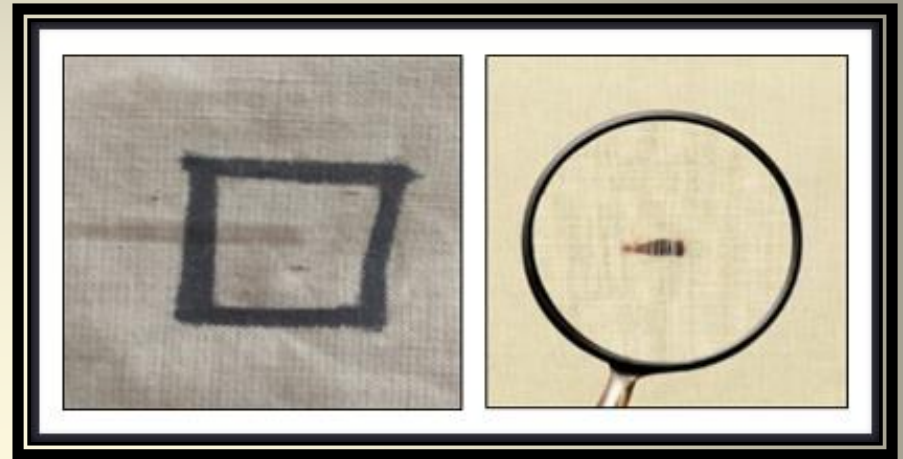
- **Double end:** When two or more fiber ends unintentionally get woven as one, a double end type of defect is formed. This defect is characterized by the thick bar running parallel to the warp. Double end in the fabric are mostly caused due to sticky ends coming from sizing or miss drawing of ends. This can be reduced by training the weaver to correctly draw the ends.



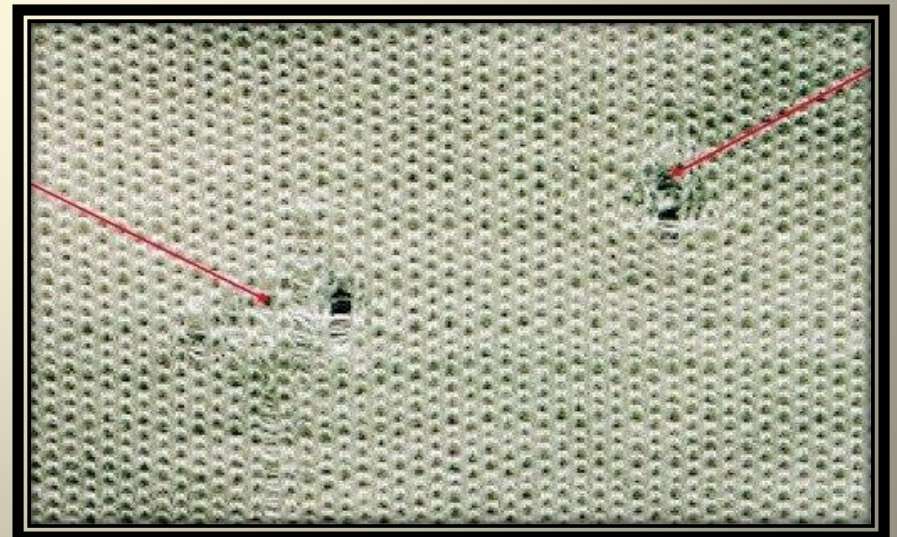
- **Float (Jala):** It is formed due to improper interlacement of the warp and weft yarn over certain area and is caused by an entanglement of adjoining ends. This kind of fault is most objectionable as the cloth has to be cut near this defect. This defect is caused due to warp breakages on loom arising out of incorrect shedding or bad sizing.



- **Gout:** It is the foreign matter usually lint or accidentally waste into the fabric. Hardened fluff as well as foreign matter such as pieces of feather accessories or wood chips, woven into the texture of the fabric is known as gout.

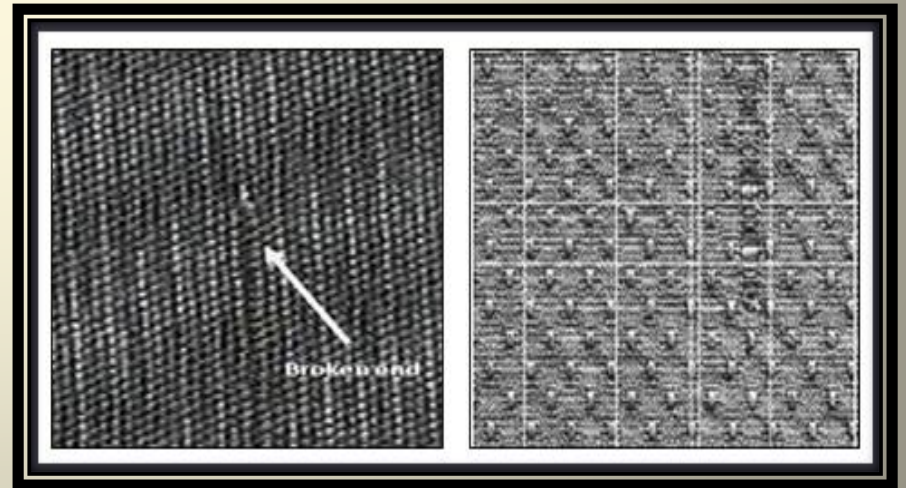
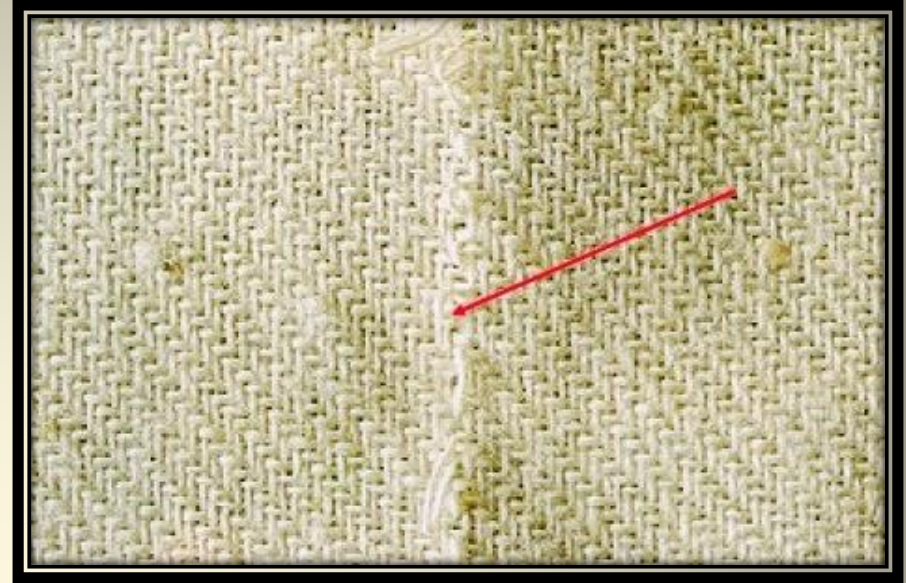


- **Hole:** Hole is formed due to accidental cutting or tear. Rough Mechanical parts of the looms can cause this.



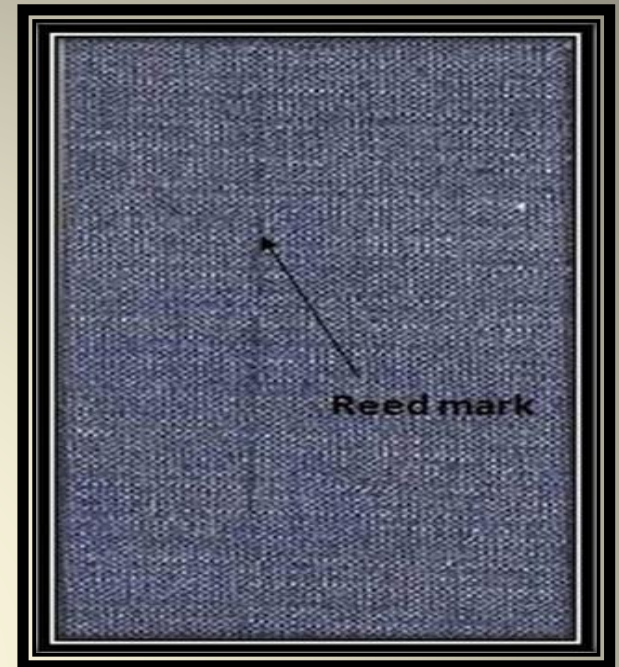
- **Lashing in:** It is the length of the yarn i.e. pulled inadvertently into the shed during weaving and this yarn is found touched in selvedge (widthwise edges) of the fabric. This defect is common in auto-looms. When the weft yarn is caught due to damaged picker or any rough surface in the box, this extra length of the weft gets loosely caught in the selvedge. Alternately improper functioning of shutter eye cutter on auto looms can cause this kind of defect.

- **Local Distortion:** It occurs when there is displacement of warp and /or weft threads from their normal position which occurs due to variation in tension of both yarns.
- **Missing end:** Absence of warp end at its proper place in a fabric is termed as a missing end. This defect appears in a fabric as a fine warp way crack till it is rectified by the weaver. This is most frequently occurring defect in Indian fabrics and constitutes 40 to 50 percent of the total defects in loom shed cloth. Number of missing ends may be more than one. Negligence of the weaver to draw the broken ends in place or improper functioning of the warp stop motion are the causes for this defect

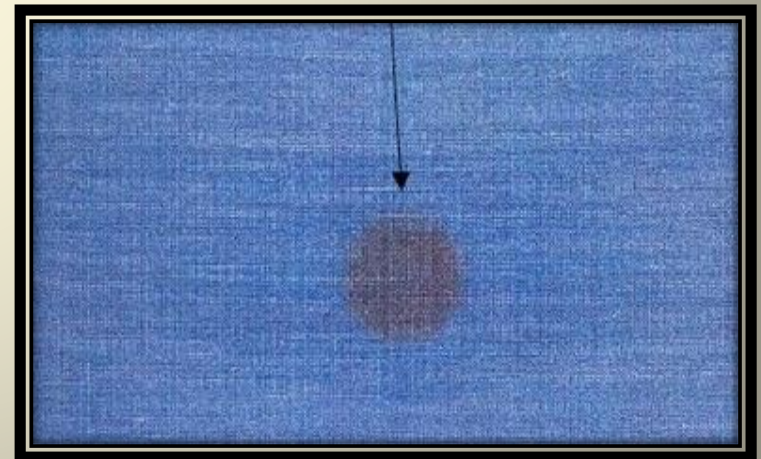
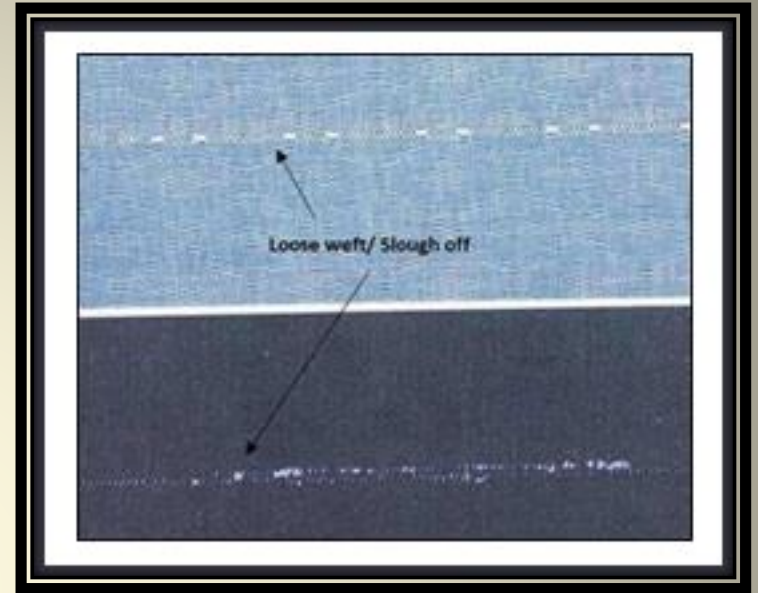




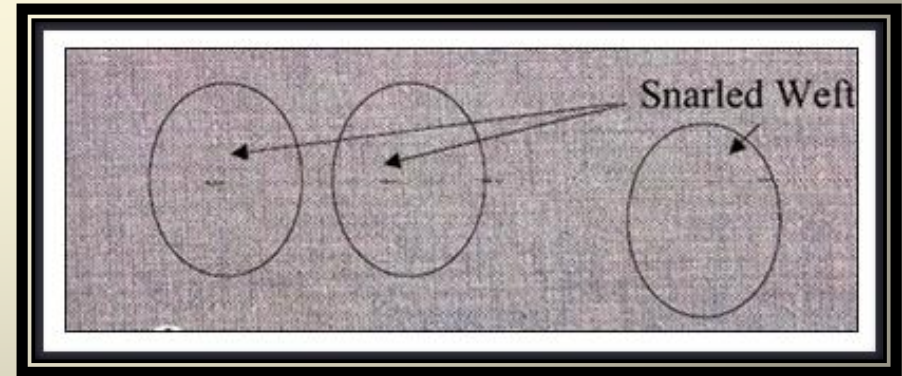
- **Reed Mark:** It is a pronounced mark caused due to damaged or defective reed. This produces grouping of warp ends in fabrics producing fine cracks. Higher warp tension resorting to late shedding and the use of coarser reed are the causes for this defect.
- **Bad selvedge:** The defect is characterized by the appearance of curls and folds in the fabric selvedge which become very prominent after wet processing.



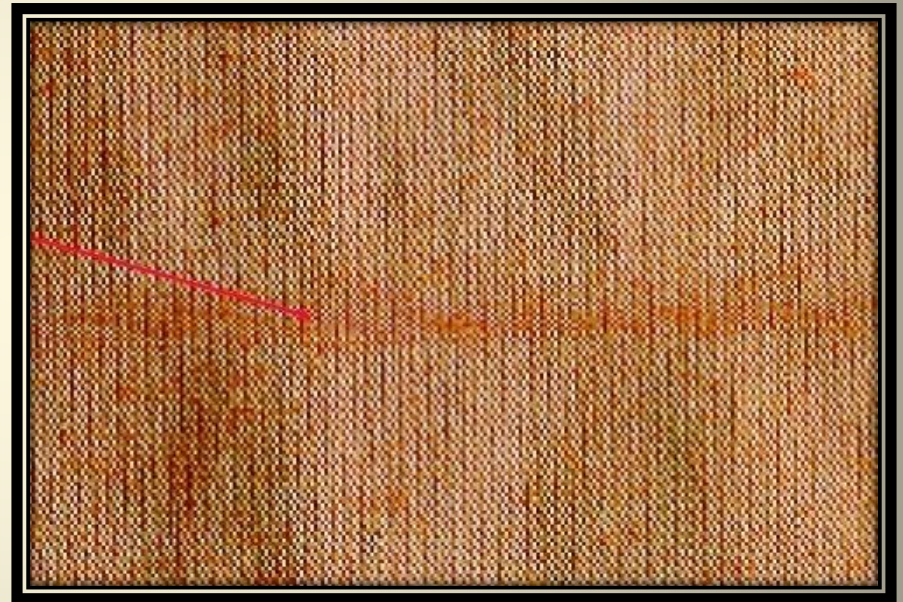
- **Slough off:** This defect is due to a bunch of weft woven into the fabric. The removal of slough off during grey mending will form a hole in the fabric. The cause for this is softly wound pirns, improper weft package characteristics and poor humidity.
- **Stain:** It is caused by lubricants and rust and oil, which is major problem in textile mills.



- **Smash:** This fault is characterized by the broken ends and floating picks. The defect is caused when many ends break consequent to the shuttle trap. Causes for this may be improper timing of shedding and picking motion, improper care to start the loop after rest.
- **Snarl:** It is a length of the weft yarn which has spontaneously doubled back on itself due to insufficient tension. If the portion of the weft yarn has over twisted zone it may snarl when it is loose. Another cause may be, if the weft in shuttle has inadequate tension then excess yarn released from the pirn turns around itself and forms a snarl.



- **Weft bar:** It is an unwanted bar running for full width of the fabric that differs in appearance from the adjacent normal fabric. The bar formation may be due to mix up of finer and coarser weft yarn with normal one running in the fabric, long term periodic variation in the yarn during spinning or faulty take up motion on the looms. Remedy could be to control the count of the yarn and attending to the mechanical condition of the loom.

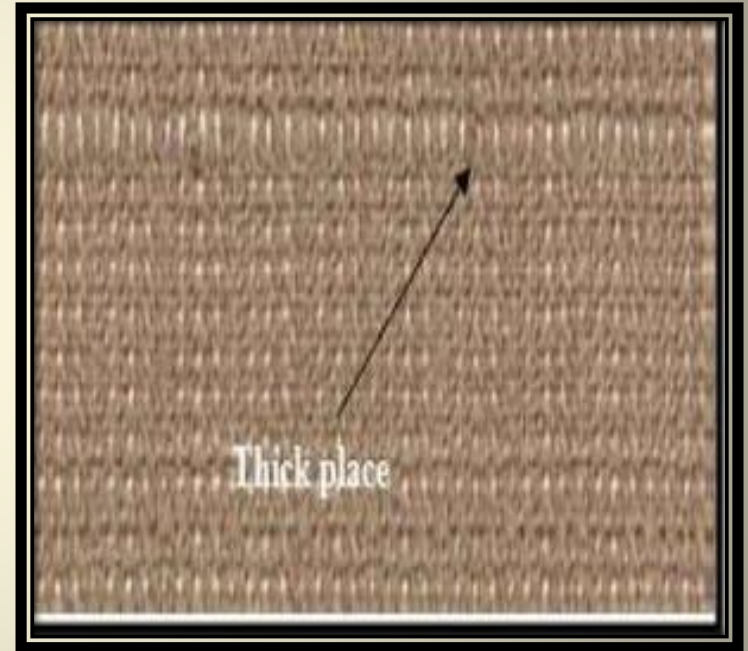


- **Stitches:** More specifically it is a single thread float either warp or weft way. A place in the fabric where warp and weft yarns escape required interlacement. Main causes are entanglement of warp threads due to delay in repairing a broken end, knots with long tail ends, breakage of wire healds on running loom and unsatisfactory working of warp stop motion.
- **Weft crack:** It is a open place causing a streak of variable length or width. This defect is introduced on woven fabric when an open space is formed across the piece due to absence of weft yarn. A stripe in the fabric where the pick is lower than the normal is called weft crack or jerky. This defect is caused due to mechanical fault on the loom such as incorrect setting of anti-crack motion, loose crank arm and loose fitting of reed.

- **Warp streak:** Warp streaks are narrow, bare and dense stripes running along the warp direction of the fabric. These are due to the warp yarn that differ from the adjacent warp end in material, count, filament, twist, luster, tension, colour. When the dyed fabric is viewed in reflected light the dense regions reflect more light and appear lighter in shades and vice versa. Uneven spacing of the reed dents give a continuous type of warp streak. It can be reduced by using good quality reeds.
- **Coarse pick:** It is due to one or more picks of diameter larger than the normal filling yarn in the fabric.
- **Loose thread:** This fault is due to any hanging thread on the face of the fabric.

- **Crammed picks:** A strip in the fabric where the pick density is more than the normal is called crammed picks (Patti). The defect is caused by the improper setting of the anti-crack motion and the release finger or because of releasing of excessive cloth at the time of restarting the loom.
- **Temple Marks:** In this defect the yarns are distorted from their true paths and fine holes are caused near surfaces.

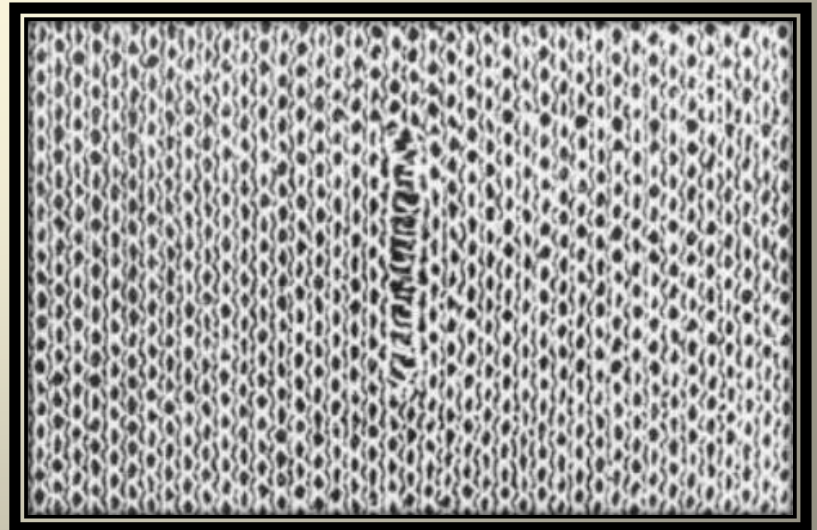
- **Thick place:** An unintentional change in the fabric appearance characterized by a small area of more closely spaced yarns or by congregation of thick yarns compared to the adjacent construction results into this kind of defect.
- **Thin place:** When the pick density at any place in the fabric decrease from the desired one a thin place is produced in the fabric. The causes for thick and thin places in the fabric are irregular setting of take-up, improper working of let off motion on the loom and insufficient care by the operator while adjusting the fell of the cloth at the time of float removal or repairing of smash.





# KNITTED FABRIC DEFECTS

- **Barre:** A noticeable stripes in the direction of the weft wise. Some causes are uneven yarn and uneven tension. Fabric will appear to have horizontal streaks.
- **Birdseye:** An unintentional tucked stitches which appear occasionally on the knitted fabric. Usually two small distorted stitches side by side.
- **Course Yarn:** A yarn having a large diameter than that normal to the fabric.
- **Dropped Stitches:** When a stitch failing to form because of malfunctioning needles or jacks. It will appear as holes or missing stitches.



**Fine Yarn:** A yarn having a smaller diameter than normal to the fabric.

**Hole:** A hole can be caused by broken needle.

**Misdraw (Color):** In warp knits, the colored yarns are wrongly drawn through the guide bars which causes the appearance of the fabric different from the designated pattern.

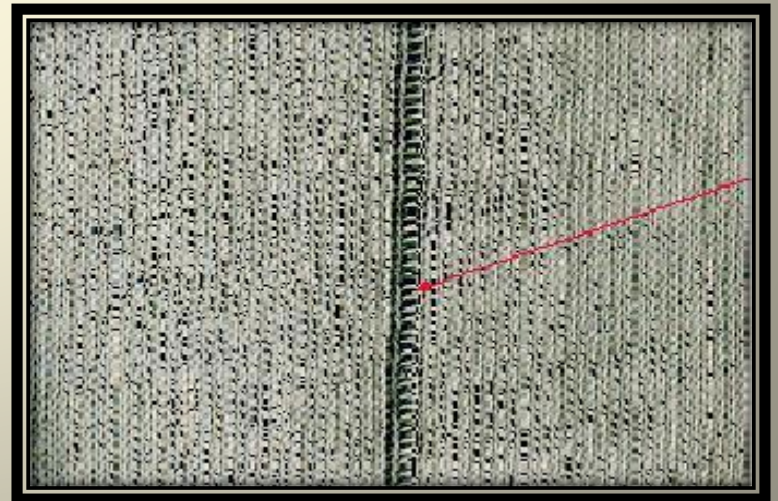
**Missing Yarn:** A yarn is missing or broken while the machine continuing to run. It occurs in circular knitting.

**Needle Line:** Wales are distorted caused by a bent needle. It usually causes a vertical line.



**Press-Off:** A condition in which a knitted fabric falls to knit and as a result, either the fabric falls off the needles or the design of the fabric is completely destroyed or disrupted and have to be replaced when bad press off occurs. Bad press offs usually start a new roll of fabric.

**Run:** It is caused by the broken needle. It is vertical line of unformed stitches caused by damaged needles( most machines have a stopping device to stop machine when needle breaks).



**Slub:** Slub is usually caused by a thick or heavy place in yarn or by lint getting onto yarn feeds.

**Tucking Defect:** One or more unwanted tuck stitches appear on the knitted fabric which is occurred due to the malfunctioning of needle or jack.

**Bowing:** It may be knitting or finishing defect. It is the looseness of the fabric. It is more in light weight fabric or drop needle and heavily tucked structure. It is because of:

- It may come while knitting, if there is some problem in take down mechanism of machine.

- If GSM is less, bowing is more.

It can be controlled in compactor but according to its shrinkage limit by overfeeding fabric in width wise direction.



- **Torquing:** It is a knitting defect, in which the grain of the fabric rotates. It can never be zero in circular knitted fabrics but it can be reduced to some extent while cutting and stitching of the garment. Torquing is because of angular displacement of the grain.
- **Spirality:** It is movement or inclined movement of design repeat. It also depends upon the no. of feeders. More the feeders, more is spirality.

