

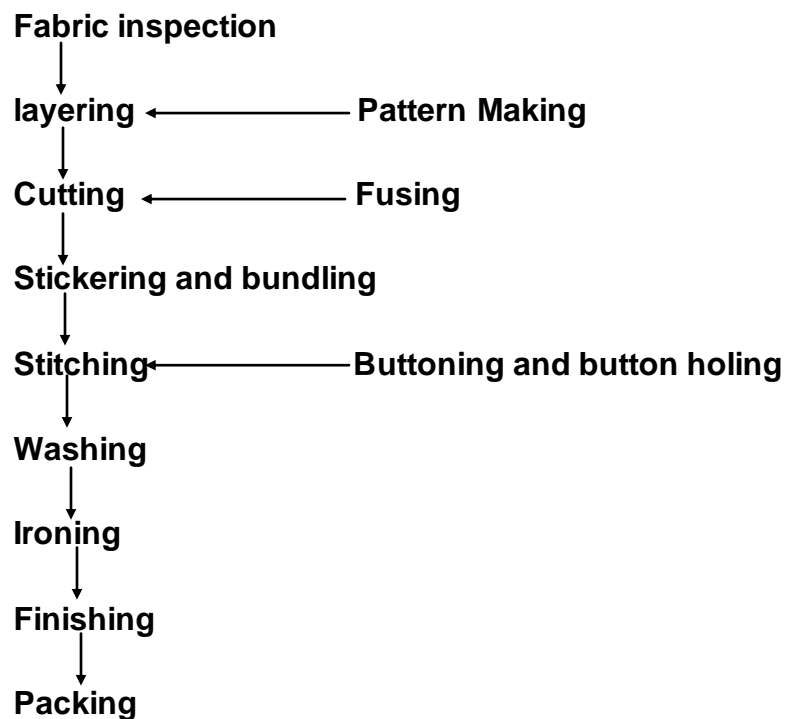
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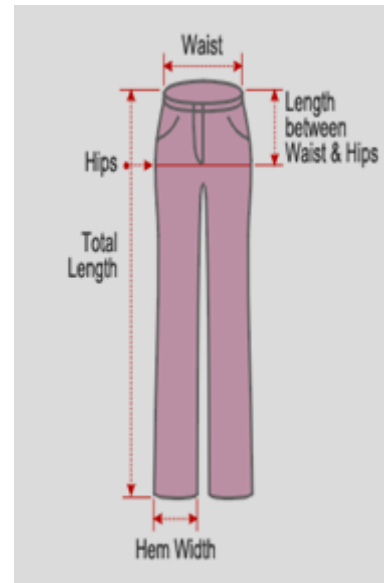
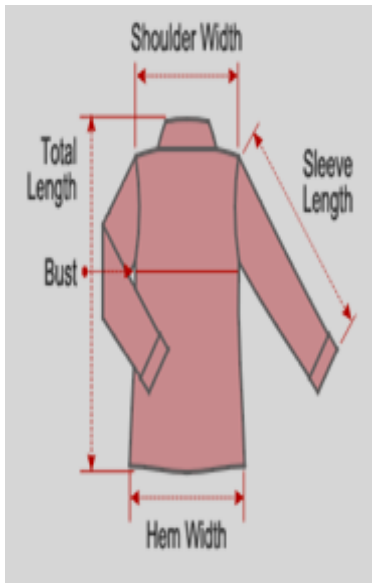
1. Basic Textiles terms

Yarn	Basic raw material for weaving
Type of yarn	Single ply, double ply and multiply
Yarn count	Defines thickness of yarn. Higher the count, finer the yarn
Warp	Lengthwise yarn in the fabric. Pass from weavers beam to cloth roller
Weft (filling)	Widthwise yarn in the fabric. Inserted during picking
Selvedge	Edges of the fabric running lengthwise
Woven Fabric	Woven fabrics are made by using two or more sets of yarn interlaced at right angles to each other.
Knitted Fabric	The knitted fabric is a material with interlaced loops called also knitted fabric (example: knitwears)
Sewing Thread	Thread is a type of yarn used for sewing.

➤ Sequence of Operations In Garment production



Measurements Practices



A. Upper Bodice Measurements:

1. High bust: measure around back and chest just above bust, keeping tape parallel to the floor across back.

2. Bust: measure over the fullest part of bust.

3. Center front bodice length – measure center front from base of neck to waistline tape..

4. Length from center back neck to tip of bust – measure from tip of bust around neck to tip of other bust and divide the measurement into half.

5. Length from center back neck over bust to waistline – measure from waistline over tip of bust around neck over other bust to waistline.



6. Center back bodice length – measure center back from base of neck to waist line tape.

7. Back shoulder width – 4 inches below base of neck at center back, measure distance from armhole to armhole, keeping tape parallel to floor and arms relaxed at sides.

8. Shoulder length – neck to arm socket – measure shoulder length from base of neck to arm socket.



B. Sleeve Measurements:

9. Upper arm circumference – with arm bent and fist clenched, measure around fullest part of the upper arm.

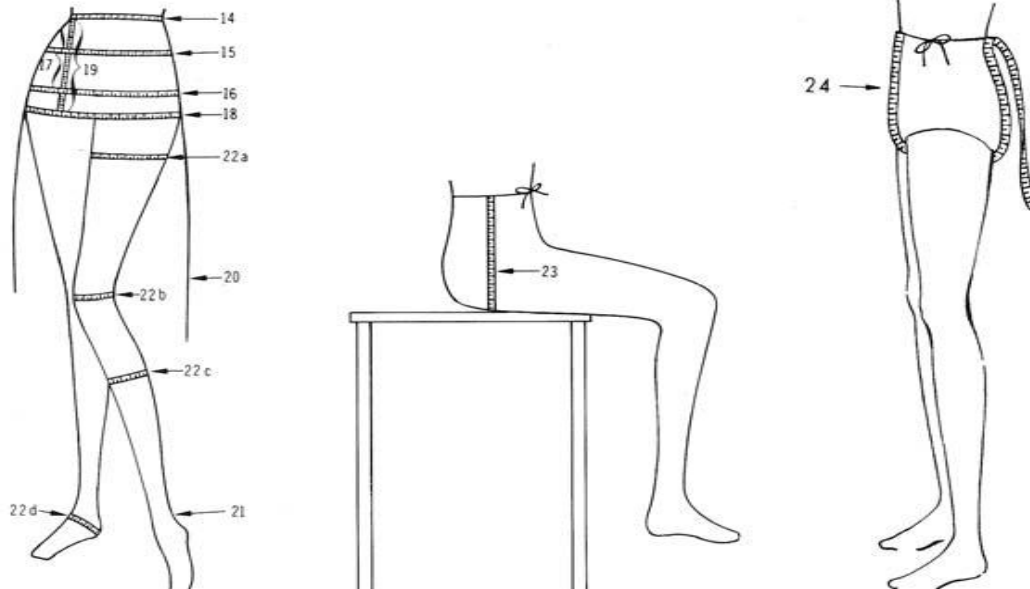
10. Arm length - shoulder to wrist – with arm bent, measure from arm socket over elbow to wrist bone.

11. Wrist circumference – measure around wrist below wrist bone

12. Hand circumference – touch thumb to little finger, the22222222n measure at the position of greatest circumference.



C. Lower Body Measurement:

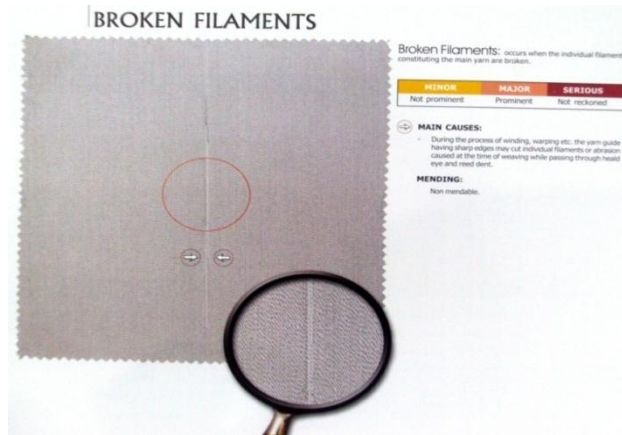


13. Waistline – measure waist circumference. Allow enough ease for comfort in wearing finished garment.
14. High hip – measure high hip circumference 3 inches below waistline tape. Keep parallel to floor 3
15. Hip at fullest part - measure fullest part of hip keeping tape about 7 inches down from waist and mark this point midway between side and center front. tape parallel to floor.
16. Waist to fullest part of hip – measure from waistline tape to hip as determined in step 15.
17. Thigh – slip tapeline down to largest measure of thighs, keeping tape parallel to floor.
18. Waist to thigh – measure a distance from waist to thigh as in step 17.
19. Skirt length – measure from waist to floor at center front, center back, right side and left side. Subtract the number of inches skirt is to be worn from floor. Add hem allowance as needed.
20. Pants length – measure from waistline along side seam to desired length for pants.
21. Leg circumference – measure the fullest part of thigh, bent knee, calf, and instep

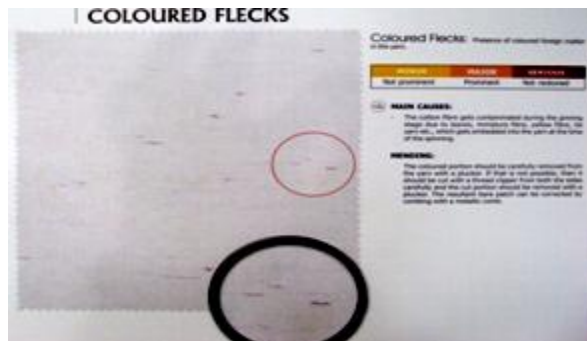
5. Fabric Defects

- Yarn Defects

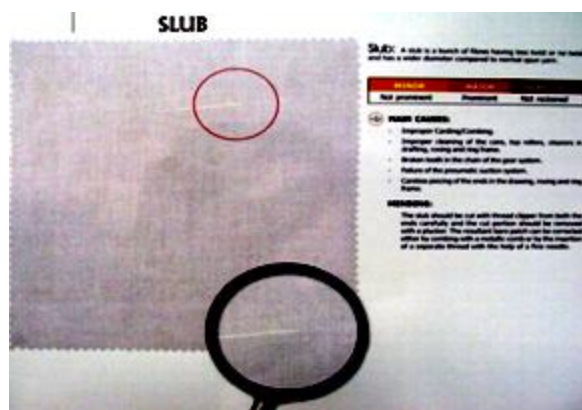
1. Broken Filaments



2. Colored Flecks



3. Slub

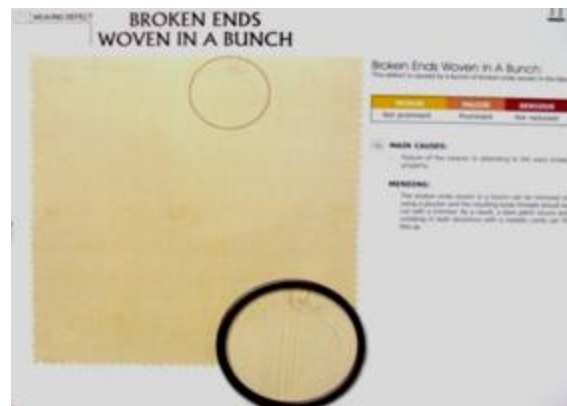


4. Slubby Weft



• Weaving Defects

1. Broken Ends Woven in Bunch



2. Broken Pattern



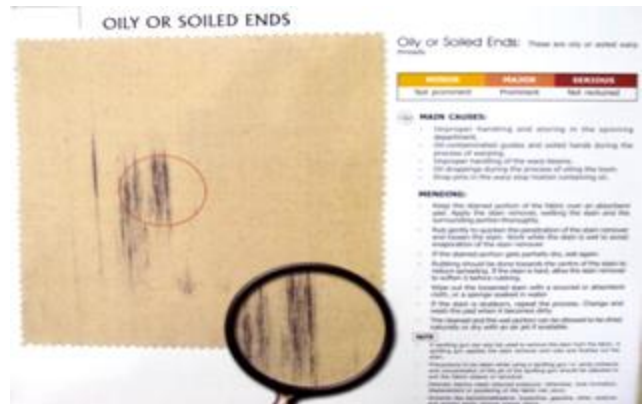
2. Hole,Cut or Tear



3. Lashing-in



4. Oil or Solid ends



5. Missing Ends



6. Oily or Other Stain



7. Selvage Defect



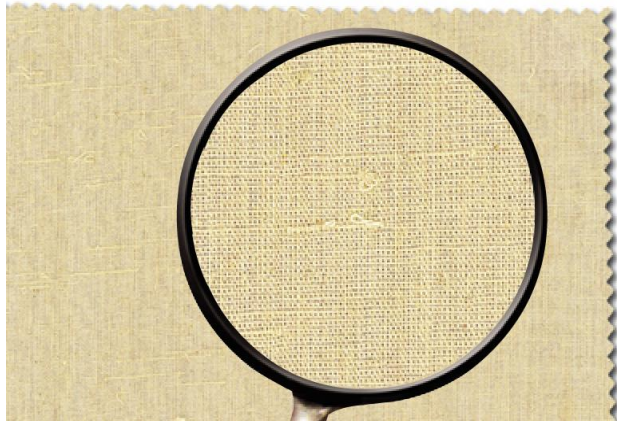
8. Oily Weft



9. Reed Marks

SNARLS

10. Snarls



11. Slough Off



SMASH

12. Smash



13. Weft bar



WEFT BAR

Weft bar : An unwanted bar, running across the full width of a piece which differs in appearance from the adjacent normal fabric.

MINOR	MAJOR	SERIOUS
Not prominent	(a) Prominent upto 5 cms (b) Incase of cramming upto 2 cms	(a) Prominent > 5 cms (b) In case of cramming > 2 cms

MAIN CAUSES:

- Difference in fibre composition, count/denier, twist, colours, shade, and luster or pick spacing of weft yarn.
- Faulty let-off and take-up motion.
- Fall of the cloth not being adjusted after loom stoppage for mending.

MENDING:
Non-mendable.

14. Stitches



STITCHES

Stitches : A single thread float either in the warp or weft way. It is very prominent in case of different colours of the warp and weft.

MINOR	MAJOR	SERIOUS
Not prominent	Prominent upto 15 cms	Prominent more than 15 cms

MAIN CAUSES:

- Improper local shedding.
- Two adjacent ends sticking together during shedding for a brief period of time.
- In case of synthetic yarn, ends sticking together due to static charge during weaving.

MENDING:

- More number of stitches are not mendable. Only a few stitches may be cut with a clipper from both the ends.
- Combing in both the directions with the help of a metallic comb may rectify the resultant bare patch formed.

15. Untrimmed Loose Threads



UNTRIMMED LOOSE THREADS

Untrimmed loose threads : Any hanging threads on the face of the fabrics are termed as loose threads.

MINOR	MAJOR	SERIOUS
Prominent	Not reckoned	Not reckoned

MAIN CAUSES:

- Tail ends not trimmed after piecing up.
- In case of auto loom weft cutters worn out or not properly set.
- Carelessness of the weaver while changing the pirn.

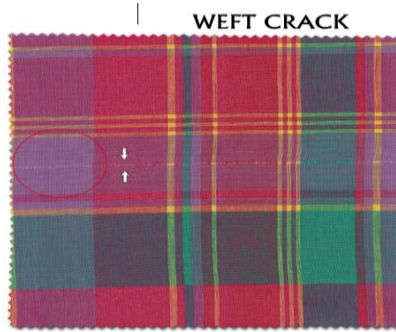
MENDING:

These defects can be easily rectified with the help of a clipper.

16. Broken pattern



17. Weft crack



WEFT CRACK

Weft crack : A narrow streak running parallel with weft threads caused due to absence of weft.

MINOR	MAJOR	SERIOUS
< 2 pick missing	2 or more full pick missing	missing picks > 0.5 cm along the length

MAIN CAUSES:

- Faulty let-off and take-up motion.
- Faulty weft-stop motion.
- Loom break not functioning effectively.
- Anti-crack motion not set properly.
- Fell of the cloth not being adjusted after loom stoppage for mending.

MENDING:

Cracks of more than two picks are not mendable. Combing in both the directions with the help of a metallic comb can rectify cracks of one or two picks, which can cover the narrow bare streak. Care should be taken to avoid major local distortion.

• Piling or Raising Defects

1. Knots



2. Bleaching Spot



3. Pile less spot



- Processing Defects

1. Uneven or loose piles



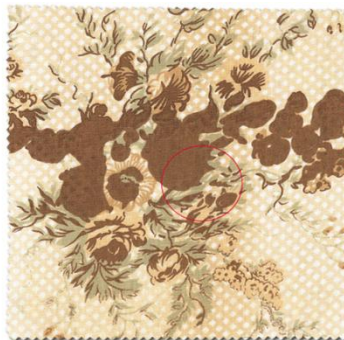
Defects caused by hanging threads: A break in the pattern of the printed fabric caused by hanging threads.

MINOR	MAJOR	SERIOUS
Not prominent	Prominent	Not reckoned

MAIN CAUSES:
Loose threads in the fabric not trimmed before printing.

MENDING:
Non - mendable.

2. Hanging threads



Blurred or dark patch: An unwanted blotch or bar in a printed/dyed fabric results in a blurred patch.

MINOR	MAJOR	SERIOUS
Upto 1 sq. cm.	> 1 sq. cm. to 6 sq. cms.	> 6 sq. cms.

MAIN CAUSES:
- Improper scouring.
- Unclean doctor blade and printing roller.
- Doctor blade not properly aligned.

MENDING:
Non - mendable

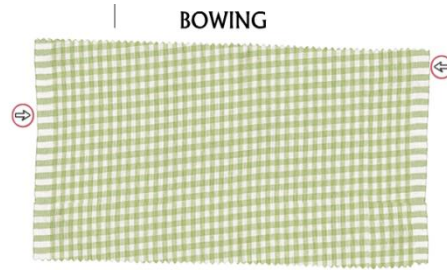
3. Dye bar



4. Blurred or dark patch



5. Bowing



Bowing: Bowing is a condition of the fabric wherein the warp and weft yarns do not keep at right angles to each other.

MINOR	MAJOR	SERIOUS
< 5% of the cloth or design, upto 15 cms along the length.	> 5% of the cloth or design, upto 15 cms along the length.	> 5% of the cloth or design, > 15 cms along the length.

MAIN CAUSES:

- Improper stretch during scouring, dyeing or finishing.
- Uneven tensions during weaving or processing.

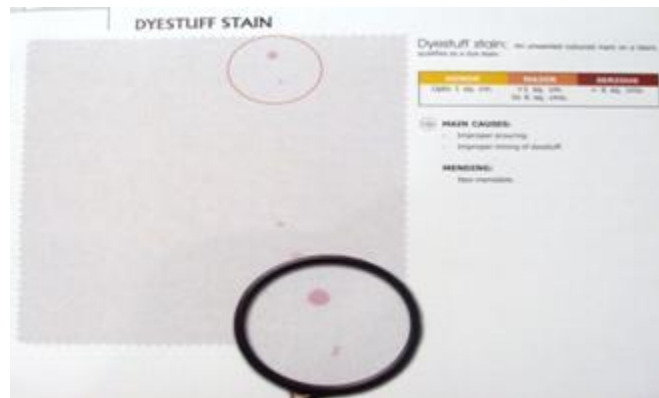
MENDING:

Non - mendable

6. Miss print or absence of print



7. Dyestuff stain



8. Uneven printing or tinting



9. Patchy or streaky or uneven dyeing



10. Pilling



11. White spot



12. Water Mark



Fabric defects in Knitted fabrics

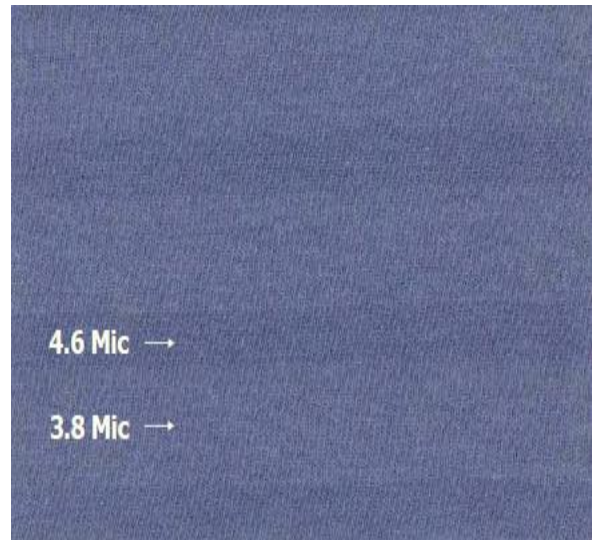
1. Bariness

Bariness : **A fabric defect characterized by textural bands or color bands in the course direction of a weft knitted fabric.**

CAUSES :

- Use of irregular yarn having higher long term irregularities.
- Using different count thread.

MENDING: Non Mendable.



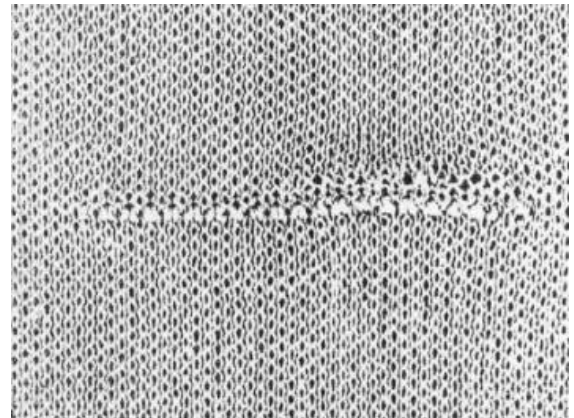
2. Bunching up

Bunching up : This is largely influenced by take-up mechanism and whether it functions properly or not.

CAUSES :

- Fabric take-up too weak.
- Thick place in yarn.

MENDING: Non Mendable.

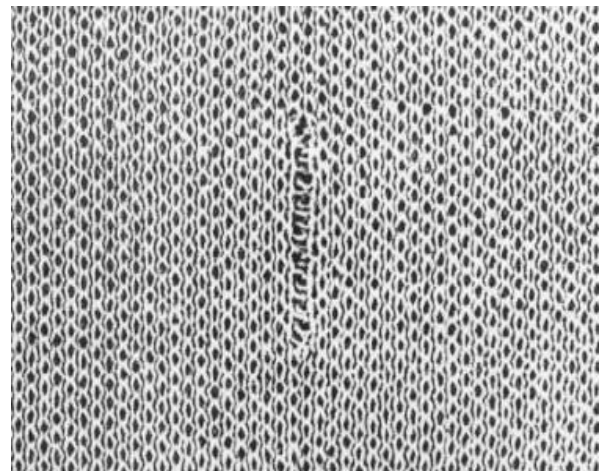


3. Drop stitch

Drop stitch: Local column of dropped stitches.

CAUSES :

- Yarn guide not set properly (i.e yarn is not fed properly during loop formation).
- Defective latch needle.



- yarn tension is not sufficient.
- Take-down is too high.
- Wrong yarn threading.

MENDING: This fault can be corrected by stitches reforming using a simple needle.

CAN BE AVOIDED BY:

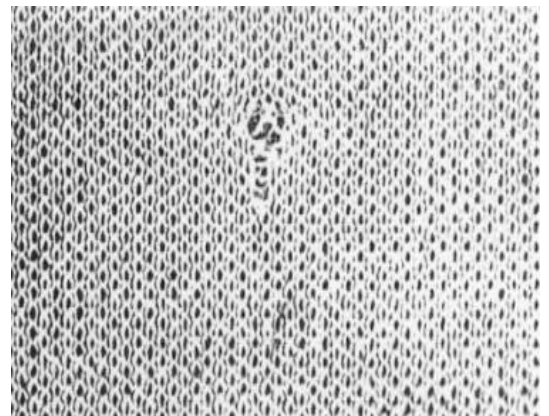
- Precise yarn-guide setting.
- Needle change.
- Dial position readjustment.
- Use of fabric fault detector.

4. Holes or Crack

Holes or crack : Local holes obtained when yarn breaks during loop formation.

CAUSES :

- Relation between cylinder and dial loop not correct.
- Weak places in yarn, Which breaks during loop formation
- Knots.
- Yarn running tension is too high.



CAN BE AVOIDED BY :

- Use of flat knots.
- Accurate yarn guide setting.
- Use of fabric fault detector.
- Use of yarn having lower hairiness.

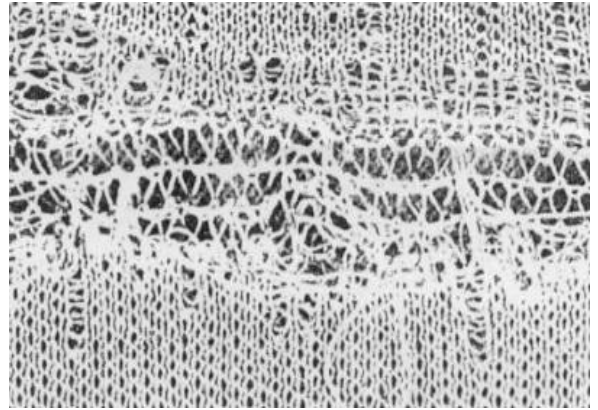
5. Crack fall out

It is an area consisting of drop stitches lying side by side. Here the yarn is not stitched by several needles laying near to each other.

CAUSES :

- Yarn breakage.
- It can also occur after a drop stitch especially when an empty needle with closed latch runs into yarn feeder and removes the yarn out of the hooks of following needles.

MENDING: Non mendable.



6. Horizontal stripes

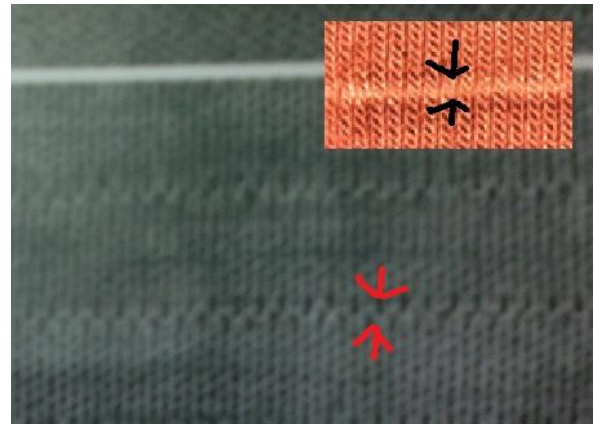
Are caused by unevenness in the courses.

They traverse horizontally and repeat themselves regularly or irregularly.

CAUSES :

- Yarn feeder set badly.
- Differences in the yarn running-in tension.
- Jerky impulse from fabric take up .

Mending : Non mendable.

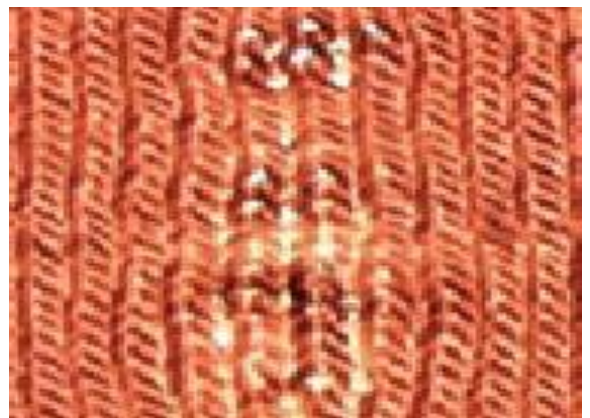


7. Vertical stripes

They can be observed as longitudinal gaps in the fabric. The space between adjacent wales is irregular.

CAUSES :

- Bent needles.
- Heavily running needles.
- Damaged latch needle.



- Damaged needle hook.
- Damaged dial or cylinder.

CAN BE AVOIDED BY :

- Needles and sinkers change after long time use.
- Use of fabric fault detector.

➤ **Stitching Defects**

Sewing defect can be classified as three groups:

Problems of stitch formation.

Problem of pucker.

Damage of fabric on seam line.

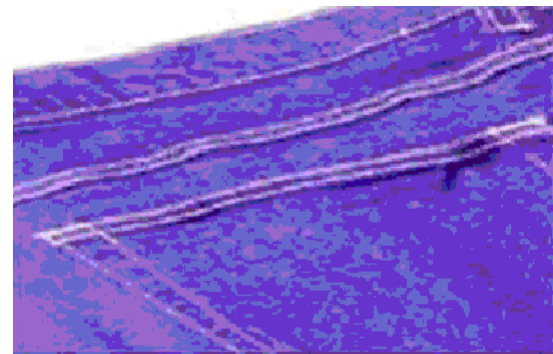
Problems of stitch formation:

Slipped stitch: Stitches in the seam line are present in a regular wise. If the interloping or interlacing between top & bottom thread of stitch is not take place or missed is known as slipped stitch or skipped stitch. This is more harmful in case of chain stitch than lock stitch.



Staggered stitch:

If the stitches produced by needle are not parallel or become curvy to sewing line is known as staggered stitch.:



Unbalance stitch: This type of defect is found in lock stitch machine. If the interlacement of threads are not take place in the middle (i.e. if

the interlacement is taken place in the upper or lower position from the middle) of two layers of fabrics then it is known as unbalance stitch.

Variable stitch density: It must need to be the same amount of stitches per unit length. If it is not, then it is called variable stitch density. The main cause of variable stitch density is irregular feed of fabric due to insufficient pressure of pressure foot. The following are the cause & remedies of variable stitch density formation given by

Frequent thread breakage: This breakage of thread again & again during sewing & also, there needs more time & which is harmful for production. Specially, when there needs to open out of sewing to solve the problem. The following are the causes & remedies of frequent thread breakage formation given by a table:



Broken Stitches: When stitches are broken during sewing is called broken stitch.

Cause: Where the thread is being broken where one seam crosses another seam (ex: bar tacks on top of waistband stitching, seat seam on top of riser seam.)



Problems of pucker:

Puckering is a wrinkle appearance along a seam line in a smooth fabric. It is one of the frequently occurring defects. Puckering shows that as if there is too much fabric & not enough thread in the seam & as if the thread is drawing the seam in. This is the reason why sewing thread is often blamed for causing puckering



though there are other factors as well as for promotion of puckering. They are given below:

- 1) Fabric structure.
- 2) Seam construction.
- 3) Needle size.
- 4) Material feeding problem.
- 5) Wrong thread tension &
- 6) Unsuitable thread.



Fabric dimensional instability:

If the shrinkage of sewn fabric plies are not same or equal than Seam pucker will create after washing.

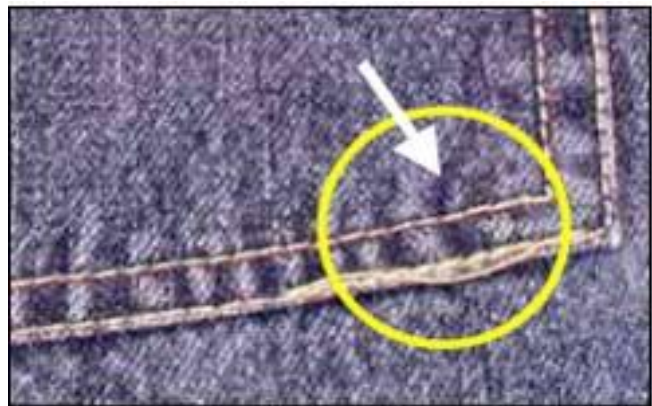
If the shrinkage percentage of area of two pieces fabrics is more than 2, then seam pucker will occur after sewing the fabric together.

Extension of sewing thread:

If the tension on needle thread is higher than under thread then seam pucker will be produced or relaxed.

Due to tension, the length of thread is extended a slight. When the fabric is displaced or descend from the machine after sewing shrinkage of thread & fabric are occurred due to tendency of coming to their original position.

If the shrinkage percentage of thread is higher than the fabric there is happened seam pucker.



Unraveling Seams:

Generally occurs on 401 chain stitch seams where either the stitch has been broken or a skipped stitch has occurred. Unless the seam is re-stitched, this will cause seam failure.

Re-stitched Seams: Where there is a "splice" on the stitch line. The seam does not appear to be 1st quality merchandise, if this occurs on topstitching.

Thread breaks or thread run-out during sewing.

Cut or broken stitches during a subsequent treatment of the finished product (i.e., stone washing).

Size Measurement Faults: During manufacturing of garments size of some parts are measured as requirement. After assembling full garments is also measured so that the dimension of garments is ok.. During size measurement the parts which are measured are – 1) Chest 2) Waist 3) Shoulder 4) Sleeve length 5) Sleeve opening 6) Body length 7) Neck width 8) Front neck drop 9) Back neck drop 10) Collar Height 11) Arm hole 12) Placket length 13) Pocket length 14) Pocket width 15) Bottom part 16) Hem opening –

Garment Twist A rotation, usually lateral, between different panels of a garment resulting from the release of latent stresses during laundering of the woven or knitted fabric forming the garment. Torque or spirally may also be used to refer a twist.

Sewing thread shrinkage:

Due to variable shrinkage % of sewing thread & fabric, Seam pucker will create after washing or ironing.

Cotton threads develop puckering when wet or after wash.

Structural jamming of fabric:

When sewing is done by needle to densely woven fabrics or in which no. of warp & weft yarns are more in one inch, there is happened seam pucker due to shrinkage of fabric.

Mismatched patterns:

Seam pucker will create when two different size of patterns are sewn together.

The designer is responsible for this. But can be occurred due to wrong selection of patterns.

Various Inspection System

The inspections are done to control the quality is means by examining the products without the products any instruments. To examine the fabric, sewing, button, thread, zipper, garments measurements and so on according to specification or desired standard is called inspection. There are so many facilities for inspection in every section of garments industries. The aim of inspection is to reduce the time and cost by identifying the faults or defects in every step of garments making.

Inspection Procedure:

Sampling plan, Visual Inspection, Dimension and Constructional Particular, Acceptability criteria for defects / defectives etc., shall be done in concurrence with specified requirements.

- Shade correct and not varying from one part of garment to another.
- Cut is correct - e.g. neck, collar and sleeves balanced, pockets correct.
- Measurements within tolerance of specification, weight correct.
- Appearance correct, patterns matching.
- Seams finished correctly, absence of miss stitching, cracking and laddering.
- Accessories correctly applied and working.
- Absence of fabric faults and stains.
- Correct labeling

Common Garment checking Practices



Removing loose threads



Putting stickers



Putting loose threads in the bags



Thread cutter used



Finding the stains for removal



Removing Stains from the

AQL Random Sampling Inspection

- The AQL inspection takes the samples from a goods, inspect them and depends on the quality of samples inspected and decide to accept or reject them.
- The standard is based on Military Standard 105D (MIL -STD-105D)
- It provides with the sampling plans, the number of samples to be inspected and the acceptable quality level (AQL)
- AQL 1.5 is applied to very severe inspection on high-class expensive item.
- AQL 2.5 is applied when textiles of normal/good quality are involved.
- Three types of sampling plans -single, double and multiple.
- Each sampling plan can be performed in three level-normal, tightened and reduced, depending on quality of products.
- In garment industry, single and double normal sampling plans are applied.

Sample Size Code Letter

- The Sample Size Code Letter shows different lot sizes to different code letter.
- There are seven inspection level, four for general inspection and three for special inspection
- For garment inspection, General Inspection level II would be used.

