Faculty of Engineering

Department of Textile Engineering

Project on
Analysis different types of knitting faults occur in knitted fabric.

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Submitted by:

Md. Rakibul Islam ID: 131-23-3480

Sumon Kumar Biswas ID: 133-23-3709

Supervised by:

Asit Ghosh

Assistant Professor, Department of TE

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Declaration

We thus guarantee that, Md. Rakibul Islam and Sumon Kumar Biswas have done this task under the administrator of Asit Ghosh, Assistant Professor, Department of Textile Engineering, Daffodil International University. We additionally guarantee that, this task report is a unique work and no piece of this report has been replicated from somewhere else.

Signature of the Supervisor

Signature of the Departmental Head

Asit Ghosh
Supervisor & Assistant Professor
Department of Textile Engineering
Daffodil International University

Dr. Md. Mahbubul Haque
Professor & Head
Department of Textile Engineering
Daffodil International University

Paper Prepared by:

MD.Rakibul Islam	ID:131-23-3480
Sumon Kumar Biswas	ID:133-23-3709

Department of Textile Engineering

Daffodil International University

Acknowledgement

Our university has given us the awesome chance to play out our venture work. At first, we might want to stretch out respect to Prof. Dr. Md. Mahbubul Haque, Head of the Textile Department and Assistant professor, Asit Ghosh of the university to give us the extraordinary chance to satisfy of this undertaking work. Exceptional much gratitude goes to Textile specialists of Industries **Magpie composite ltd** and **Ayman textile and hosiery ltd** from which we gather the example. We might want to recognize our profound obligation to all educators of our University and particularly of 'Texture Manufacturing Technology' office for their assistance and kind motivation, which remain us the background of our endeavors. Finally, we like to get a kick out of the chance to acknowledge that we stay in charge of the deficiencies, insufficiency and mistakes, which certainly remain.

ABSTRACT

On this examination was finished distinctive kinds of single and double jersey machine faults and this article are cantered around wastage and how this sort of faults can be decreased. We likewise centred about various kind of issue those are face to done by the machine running. We get some issue. The real issue of these sorts of machine are wastage. We get some fault in dyeing and some other in finishing which we find out and doing develop of that faults .We plate how we might decrease the wastage of texture. Analyse the distinctive sort of existing procedure and creating procedure of that faults. It was very difficult to find out that faults and developing them in the same way. But in this experimental work we know how to do it and if we face any problem how to overcome that. For this study we collected different sample of common knit fabric fault and some quality inspection sheet done in 4 point system method from two reputed textile industry. Firstly we analysis the data from the quality inspection sheet and then we have analysed how changing the stitch length effects on the increasing or decreasing of majorly occurred faults on grey knit fabrics.

Keywords: single jersey, double jersey and rib faults.

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CHAPTER 1

INTRODUCTION

1.1. Introduction

In the domain of material progressions there has been stores of undertaking continuing to find convincing substitutions of different materials to meet the basic solicitations of clothing. Material is the most improvement proficient piece of the world. Bangladesh is the second greatest bits of garments texture conveying country of the world. Bangladesh basically conveyed 2 sorts of surface weave surface, woven surface. By and by Bangladesh by and large conveyed denim thing. Denim is one kind of woven surface. Bangladesh exchange 60% sews thing and 40% woven thing. Sew thing are two sorts single shirt and twofold pullover.

By and by right now world market advancement made well ordered. Likewise, every body of the world should be quality full thing. Besides, those country things like this thing. Customer is pulling in of them.

In sewing machine, the path toward conveying surface by moving consistent yarn into interlocking circles, each line of hover dangling from the one rapidly going before it. There are primarily one parcel of yarn are used in sewing. Bangladesh make endless thing. Generally two sorts of weaving thing are conveying in this country. They are single pullover and twofold shirt.

There are various issue of conveying sewing thing. The noteworthy issue of conveying sewing thing is wastage. A gigantic proportion of weaving thing are wastage in Bangladesh are every year. The crucial reason of wastage are incompetent work , old machine, machine blemish , machine capability , dust on machine and various other reason . if we overcome this sort of issue, we should manufacture our proficiency and we increase our advantage . That is way we need to think the

progression of our work mastery and quality. What's more, besides try to use authentic machine**.**

1.2. Objective of the Study

Textile is the primary earnable division in our nation. In this reason we should be endeavor to know everything about in this part. The target of our examination is discovering the distinctive sorts of flaws in sewing machine and to know how to those kinds of machine deficiencies are diminished.

To finish this point we can know numerous flaws, which we get in single jersey m/c and Double jersey machine.

1. To discover single pullover and twofold shirt round weaving m/c blame.
2. To know what number of wastage of single pullover and twofold shirt round weaving m/c and how might we decrease whose kinds of wastage.
3. Whether the weave texture deficiencies increment or decline with the difference in m/c DIA, Gauge, and GSM.
4. TO lessen existing deficiencies and increment creating process.

CHAPTER 2

LITERATURE REVIEW

2.1.1 Knitting:

knitting is the procedure of creation texture by moving persistent yarns into interlocking circles, where each line of circle dangling from the one quickly going before it.

Knitting can be divided into 2 classes. These are-

1. Circular Knitting
2. Flat Knitting

Circular knitting are also classified into 2 ways.

The main Forms of Knitting are

1. Weft Knitting
2. Warp Knitting

2.1.2 Weft Knitting:

Weft knitting is the process by which 1 set on yarn is using. Weft knitted fabric structure thread runs in horizontal direction and loop produced by one thread. It has highly elastic and highly drape characteristics structure. It has suitable for under and outer garments. It can be both flat and tube form.

Weft knitted fabric can be classified into two classes. These are

1. Single Jersey or Plain Jersey Fabric

2. Double Jersey

There are some important and most popular characters of single jersey fabrics are given below:

• 100% single jersey.
• Single Pique
• Single Lacoste
• Polo Pique/Double Pique
• Terry Fleece
• Fleece etc.

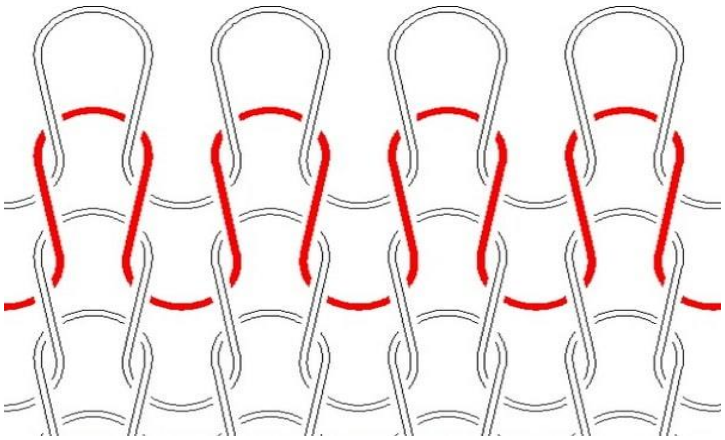


Fig 1: courses and wales'

Double jersey fabric can be classified into two classes. These are

a. Rib Fabric

b. Interlock Fabric

2.1.3 Warp Knitting:

In case of warp knitted structure, the work is progressed by length wise, through the intermeshing of loops in the direction of wale. Each loop in the horizontal direction made from different thread in warp knitted structure. The advantage of this fabric structure that it is not easily unroll. So, it has less elasticity characteristics from weft .

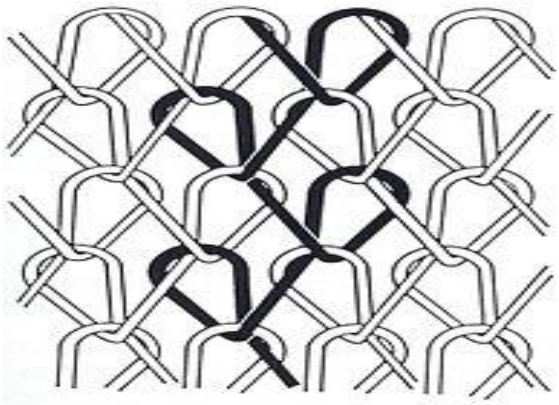


Fig 2: Warp Knitting

2.2. Terminology & Definition

2.2.1. Course and Wales's

Knit fabric are made by 2 way. These are called course and Wales. Wales is produce by vertical yarn and Course is produced by horizontal yarn.

The wales line are fixed by the machine gauge. This are fixed and the coarse lines can be changed by adjusting in the machine. It's called Texture.

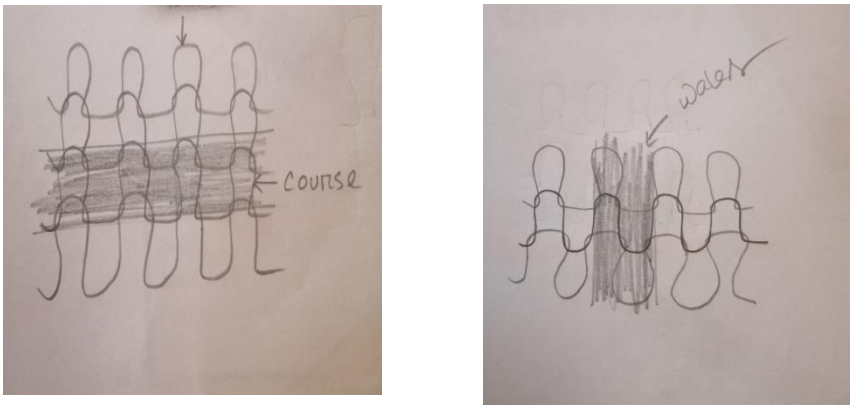


Fig 3: Course and Wales lines of Knitted Structure

2.2.2 Course per inch

it is counted by placing an inch glass (counting glass) on the fabric and counting the number of courses are contained within the area. These values may be vary if the fabric is distorted.

2.2.3. Wales per inch

Wales per inch are measured by placing an inch glass (counting glass) on the fabric and counting the number of Wales, which are contained within the area. These values may be vary if the fabric is distorted.

2.2.4. Needle Gauge

Needle Gauge is denoted by the Number of needle contained in per one inch of the needle bed in knitting machine.
Total number of needles can determine by the help of needle gauze. The formula is given below-

Number of Needle = ∏ x machine diameter x machine gauze

2.2.5. Machine Gauge

Machine gauge are expressed by the number of needles in a unit length of the needle bed. The needle bed may flat or circular. In case of circular double knitting machine it used for cylinder as well as dial. It is denoted by alphabet “E”. The formula is given below-

Machine Gauge= No of needle/inch

2.3. Study of Knitting Machine

2.3.1. Circular knitting machine

Circular knitting machines, which make the texture for inward and over wear purposes. These sort machines are generally utilized for weaved texture producers to address the issues of attire and material industry. Round weaving machine is the main decision all through the sewing business for its efficiency and ease of use. Round weaving machine has yarn creel, which is utilized to put the yarn cone, where the yarn is provided to the machine, through pipe. At that point the yarn the goes through moving needles by yarn direct which are controlled by chamber and cams. Cam are produced in consistence with recommended quality guidelines utilizing high-review material. It has been made and plan.

There are various types of circular knitting machines used in textile industry. Such as,

* **Single** jersey circular knitting machines.

* **Double** jersey -

1. Rib Machine
2. Interlock Machine

* Flat bed-knitting machine-

1 Sinker wheel-knitting machine.

2. Loop wheel-knitting machine.

2.3.2. Single jersey circular Knitting Machine:

Fig 4: Single jersey circular knitting machine

2.3.3. Double jersey circular knitting machine (Rib)

Fig 5: Double jersey Circular Knitting Machine (Rib)

Machine specification:

2.3.3 Double shirt

Rib & Interlock:

Root: japan

Demonstrate: V 8ME43

M/C dia : 30"

M/C gauge: 22

Feeder: 85.

2.3.4 Double jersey circular knitting m/c (interlock).

Fig 6: double jersey (interlock machine)

2.3.5. Parts of knitting machine and their function:

Table 1: Parts of knitting machine and their function:

Serial No	Parts Name	Function
1	Needle	To extend the string and making new circle likewise pass the new cut through the old circle.
2	Sinker	The primary capacity is to hold the old circle and help to arrangement of new circle.
3	Creel	It is make to hold the yarn package.
4	Yarn guide	The principle capacity of this is to control the yarn legitimate way.
5	Knot catcher	To hold the residue and other additional debasements likewise tie. Just permit yarn go through this.
6	Positive wheel	To sustain the explicit measure of yarn keeping legitimate strain and guarantee even yarn feed.
7	Sensor	To stop the yarn in the wake of breaking a solitary yarn as result machine will stop.
8	Indicator light	The capacity of this gadget is to distinguish the feeder or wheel put where yarn break.
9	Ceramic yarn guide	To guide the yarn properly to the feeder.
10	Yarn feeder	To sustain the yarn to the needle for circle.
11	Sinker Bed	This is making to hold/place the sinker.
12	Sinker Cam	To make sinker path also give up and down motion properly.
13	Cylinder	To catch and place the needle in right position.

14	Base plate	To catch and place the cylinder properly.
15	Needle Cam	To make a path for needle for accelerating through in the cylinder according to the fabric construction..
16	Nozzle	To throw the oil into the cylinder for better movement also reduce friction.
17	Blower Fan	Removing dust from the cylinder and feeder wheel by air blowing.
18	VDQ pulley	To control the GSM also change the stitch length.
19	Take up roller	To winding the fabric after producing in even direction.
20	Tensioner Roller	Maintain the tube fabric tension during winding.
21	Lycra feeder	To nourish Lycra to the machine with proper direction.
22	Toothed Belt	To transfer the motion from the VDQ pulley to the positive feeder.
23	Cylinder Brush	To clean dust from the surface of the cylinder.
24	Fabric detector/sensor	To check any type of split in the fabric if it is found in the machine then machine will stop.
25	Wastage oil pot	To store additional and wastage oil.
26		To set the motion of take up properly.
27	Fabric spreader	To make tension in width wise direction of fabric during take up action.
28	Off switch	To halt the machine.
29	Start switch	To launch the machine
30	Jog switch	To rotate the machine slowly
31	Handle	To control the cylinder.
32	Tension pulley	To maintain the tension of toothed belt.

CHAPTER 3

MATERIALS AND METHOD

3.1. Materials:

Cotton (100%) and Grey Mélange (5%) yarn was used for producing Rib and Interlock, single jersey fabric. These fabric were collected from magpie composite textile ltd industries and collected fabrics faults from single jersey, rib, interlock.

3.2 Method:

Knitting faults are produced by 3 ways we know about them below:

3.2.1: Issue occur during knitting in horizontal line

1. Barrenness
2. Imperfection
3. Contamination
4. Snarls
5. Spiraled

3.2.2: Issue occur during knitting in vertical line

1. Hole
2. Sinker line.

3.2.3: Faults occur by machine

1. Drop stitch
2. Broken ends
3. Fabric press off

3.2.4: Issue occur when knitted fabric dye

1. Uneven dye
2. Dye spot
3. Pilling
4. Soda spot.

3.2.5: Issue occur during finishing

1. Skew,
2. Slitting fault,
3. Crease mark,
4. Oil mark,
5. Line mark,
6. Burning effect,
7. Chemical spot,
8. Sewing fault

Drop stitch:

Drop Stitches are indiscriminately appearing to be close to nothing or huge openings of the, same or various size, which appear as blemishes, in the Knitted surfaces**.**

Fig7: Drop stitch

Causes:

1. High Yarn Tension

2. Yarn Overfeed or Underfeed

3. High Fabric Take Down Tension

4. Deterrents in the yarn segment, due to the ceasing up of eyelets, yarn aides and weight plates, with wax and pad, etc.

5. Deformities like; Slobs, Naps, Knots, etc.

6. Erroneous gap between the Dial and Cylinder rings.

Cures:

1. Ensure uniform yarn weight on all of the feeders, with a Tension Meter.
2. Rate of yarn feed should be altogether overseen, as indicated by the required Stitch Length.
3. The surface chamber should be much equivalent to a totally extended inflatable, not tight or unnecessarily slack.
4. Eyelets and the Yarn Guides, should not have, any strands, help and wax, etc. stuck in them.
5. The yarn being used, should have no imperfections, like; Slobs, Naps and tremendous groups, etc.
6. The opening between the Cylinder and the Dial should, be successfully adjusted, as indicated by the sewed circle gauge.

Barrenness:

Causes:

1. High Yarn Tension.
2. Count Variation.
3. Mixing of the yarn parts.
4. Package hardness assortment.

Fig 8: Barrenness

Cures:

1. Ensure uniform Yarn Tension on all of the feeders.
2. The typical Count assortment in the part, should not be more than ± 0.3
3. Assurance that the yarn being used for Knitting is of a comparable Lot/Merge no.
4. Assurance that the hardness of, all the yarn packs, is uniform, using a hardness analyzer.

Streakiness:

Causes:

1. Yarn slippage on the IRO Pulley, due to the yarn slipping in and out from underneath the IRO Belt, due to a tilted IRO Pulley.
2. Worn out IRO belts, yarn aides and eyelets, etc.

3. Faulty bending of the yarn groups

4. Yarn missing the mark on the belt, on the IRO Pulley.

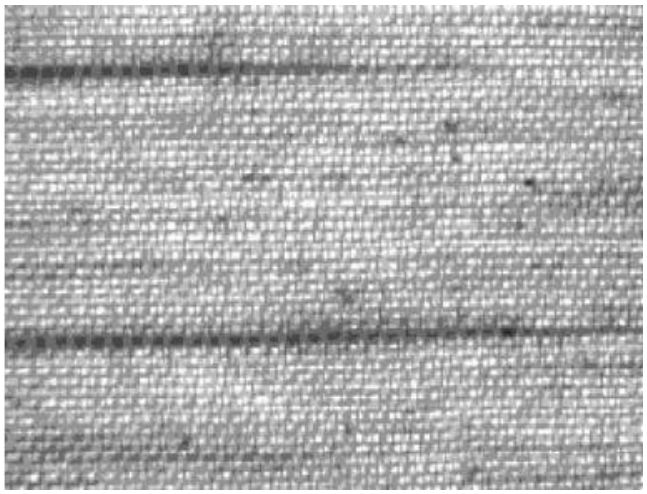


Fig 9: Streakiness

Cures:

1. Ensure outstandingly smooth, clean and hindrance free segment of the yarn, through the eyelets, yarn and strain circles, etc.

2. No cuts or brutal surfaces, in the Porcelain Eyelets, Yarn Guides and the Yarn Feeder holes, etc.

3. Flawless bending of the, Yarn Package (The yarn circles should release up effortlessly, with no check)

4. The yarn should continue running added to the IRO collection, between the belt and around the IRO pulley.

Snarls:

Growls show up on the texture surface, as large circles of yarn getting bent, because of the high curve in the yarn (Unbalanced turn yarn).

Causes:

1. High, curve in the, yarn.

2. Hosiery yarns are delicate bent. High, turn in the yarn, is the reason for growling.

3. (Snarls reason, texture surrenders and needle breakages).

Fig 10: snarls

Cures:

1. Ensure using Hosiery Yarns, of the proposed T.P.M. in a manner of speaking.
2. (Hold a few killjoys of the yarn in both the hands, as a 'U'.
3. The yarn has a sensible curve, if it doesn't will when all is said in done rotate or turn, as a snarl.
4. (Such yarn can be used for Hosiery applications.).

Contamination:

Causes:

1. Closeness of dead strands and other remote materials, for instance, shaded fibers, husk and designed fibers, etc.
2. Dead Fibers appear in the surface, due to the, closeness of unnecessary young Cotton strands, in the Cotton fiber trim.
3. Dead strands don't get shading in the midst of Dyeing.
4. Presence of the outside materials, in the, staple fiber mixing
5. (Kitty, Husk, Broken Seeds, hued fibers and strands like Poly Propylene, Polyester, Viscose, etc.)
6. Dyed and various types of strands flying from the neighboring Knitting machines stick, to the yarn being used for sewing and get, embedded in the Gray Fabric.

Fig 11**:** Contamination

Cures:

1. Use rich fiber mixing for the yarns, to be used for Knitting, in order to have less dead fibers, appearing in the surface.
2. Rigid control measures in the Blow Room, to keep the mixing of remote issues in the Cotton mixing.
3. Segregate the Spinning and Knitting Machines, with Plastic Curtains or Mosquito Nets, to keep the strands flying from the neighboring machines, from getting introduced in the yarn/surface.

Spirally

Causes:

1. Use rich fiber mixing for the yarns, to be used for Knitting, in order to have less dead fibers, appearing in the surface.
2. Rigid control measures in the Blow Room, to keep the mixing of remote issues in the Cotton mixing.
3. Segregate the Spinning and Knitting Machines, with Plastic Curtains or Mosquito Nets, to keep the strands flying from the neighboring machines, from getting introduced in the yarn/surface.

Fig 12: spirally

Cures:

1. Use the Hosiery yarns of the recommended TPM level for Knitting
2. (Hosiery yarns are sensitive turned, conversely with the Warp yarns)
3. Fabric power or the Take Down strain, on the opposite sides of the dull surface cylinder, on the weaving machine, should be comparable.
4. Ensure uniform rate of feed of the shaded surface, on both the edges, while reinforcing the surface to the Calendar, Compactor or Stented machines.

Needle line:

Cause:

1. Bent Latches, Needle Hooks and Needle stems
2. Tight Needles in the areas
3. Wrong Needle assurance (Wrong progression of needles, put in the Cylinder or Dial).

Fig 13: needle line

Cures:

1. Inspect the dim surface on the weaving machine for any Needle lines.
2. Replace all the lacking needles having, bowed bolts, catches or stems.
3. Remove the fibers gathered in, the Needle traps (grooves).
4. Replace any curved Needles, running tight in the devices.
5. Check the Needle filling gathering in the Cylinder/Dial grooves (traps).

Sinker line:

Causes

1.Bent or Worn out Sinkers

2. Sinkers being tight in, the Sinker Ring grooves.

Fig 14: sinker line

Cures:

1. Replace, all the exhausted or bowed sinkers, causing Sinker lines in the texture.
2. Sinker lines are fine and weak vertical lines, showing up in the texture.
3. Remove the filaments, stopping up the Sinker traps (Grooves).

Oil line:

Causes:

1. Fibers and pad collected in the needle traps, which remain sprinkled with oil.
2. Excessive oiling of the, needle beds.

Fig 15: oil line

Cures:

1. Fibers, accumulated in the needle traps, cause the oil to soak the Fabric.
2. Some lubing up oils are not launder able and can't be removed in the midst of Scouring.
3. Oil lines appear in the surface, in the long way course, even ensuing to shading.
4. Remove all of the Needles and the Sinkers of the machine, discontinuously.
5. Clean the scores of the Cylinder and Dial of the machine out and out, with oil.

Pilling

Causes

1. Abrasion due to the contact with unforgiving surfaces
2. Excessive surface fragility caused, in view of the grinding tumbling action (Texture crushing in the Tumble Dryer)
3. Rough Dyeing procedure and grinding machine surfaces (Soft Flow Machine tubes, Tumble Dryer drum, etc.)
4. Reprocessing of the surface is, furthermore an essential purpose behind piling.

Fig 16: pilling

Cures

Abstain from using the Tumble Dryer.

1. (Control shrinkage by most prominent surface loosening up and over feed in the getting ready)
2. Consistently examine the surface contact centers around all of the machines, for any terrible and sharp surfaces.
3. (Correct, at whatever point found cruel)
4. Maintain a strategic distance from kept reprocessing of the surfaces.
5. Utilize threatening to pilling compound meds for the surfaces, slanted to pilling.

Bowing

Causes:

1. Uneven course of weights, over the surface width while, shading or finishing the surface.

Fig 17: bowing

Cures

1. Bowing can be amended, by reprocessing the surface empowering it from the opposite end.

2. A excellent machine (MAHLO) is furthermore open for, modifying the bowing in the weaved surfaces.

Shade variation

Cause

1. Shade variety might be happen on account of various fiber combining.

2. Shade variety is caused as a result of variety in process parameter like time, temperature, speed of texture roller etc.

Fig 18: shade variation.

Cures

1. Ensure the grey fabric is used for one shade for same knitting product.

2. Ensure the same process parameter like width, length.

Pin Hole damage

Causes:

1. Oxidization of weaving oil/oil in the texture stockpiling for a long term.
2. Presence of sharp metallic part.
3. Presence of overwhelming metal particles in peroxide shower

Fig 19: pin hole

Cures

1. Check the machine parts.
2. Provide magnetic filter in water.

Crease mark

Causes:

1. In sew coloring wrinkle stamp is normal coloring deficiency.
2. More process duration.
3. Faulty plaiting gadget.
4. Incorrectly set bowed-expander.
5. Variation of warming and cooling rate.
6. Improper development of texture.

Fig 20: crease mark

Cures

Anti-creasing agent can protect crease mark.

Dye spot

Cause

1. These are frequently caused by administrators not accurately blending and completely dissolving the color stuff, in the perfect measure of water
2. Color shower hardness.
3. Not disturbance of dyestuff.

Fig 21: dye spot

Cures

1. Use satisfactory sum sequestrate to bring down shower hardness
2. Legitimate unsettling.

Dead cotton dye

Cause

1. Absorption during process.
2. Poor quality cotton used.

Fig 22**:** dead cotton dye

Cures

1. Use good quality cotton.
2. Reduce absorption time.

Lycra burn

causes

1. Overflow warmth on the texture amid hit sitting.
2. Incorrect speed of stented m/c amid warmth setting.

Fig 23: Lycra burn

Cures

1. Provide correct temperature in setter m/c.
2. To keep correct speed of setter m/c.

Lycra out

Causes

1. Fail to catch the Lycra yarn by needle.

2. Lycra yarn breakage.

3. Faulty auto stop motion

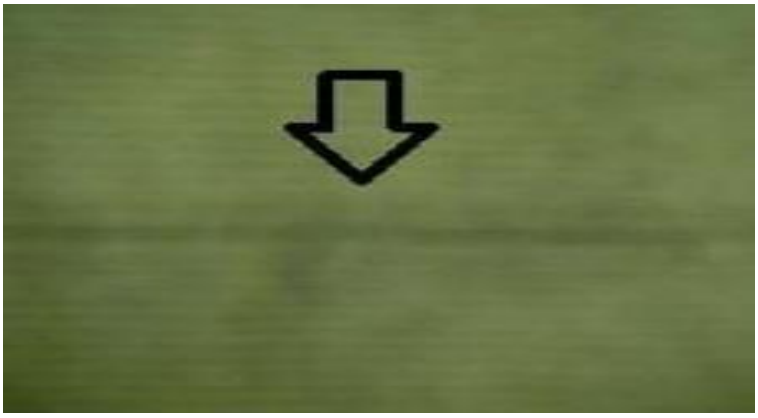


Fig 24: Lycra out

Cure

1. Ensure the feed of Lycra yarn to every needle**.**

2. The tension of Lycra yarn should be uniform.

3. Auto stop motion should work properly**.**

Horizontal line

Causes:
1. If the texture wet condition in lengthy time-frame.

2. During drying the texture in the event that any piece of the texture is wet, it occur.

3. Unproper settling amid kicking the bucket

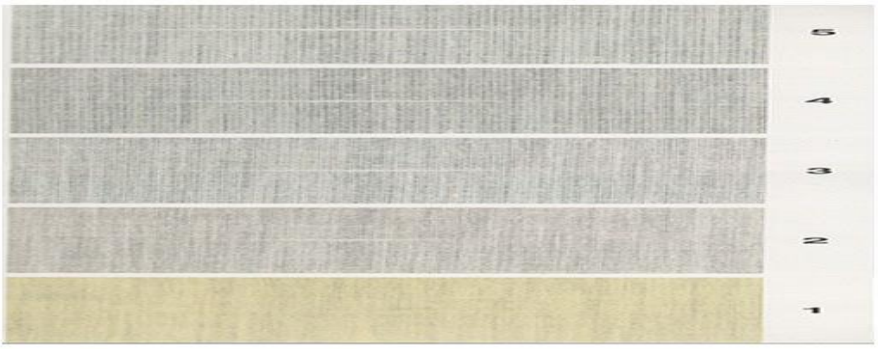


Fig 25**:** horizontal line.

Cures

1. To utilize brief time for wet molding of texture.

2. Equal drying of the texture.

3. Proper settling amid biting the dust.

Dust

Cause

1. Due to grimy completing floor.

2. Unclean the trolley of completing floor.

3. Due to unclean m/c surface.

4. Drop the stride in while texture.

Fig 26: dust

Fixes:

1. To clean the completing floor.
2. Clean the trolley of completing floor.
3. To clean the m/c surface

slub

cause

1.usually caused by a thick or overwhelming spot in yarn.

2. by ling getting on to yarn bolsters.

Fig 27: slub

Cures

1. Use good quality yarn.

Lycra drop

Cause

1. Low strain of Lycra yarn.
2. Fail to get the Lycra yarn by needle

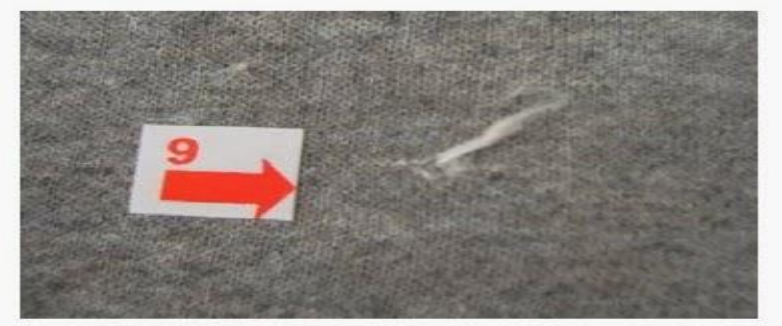


Fig 28: Lycra drop

Cures

1. Ensure the feed of Lycra yarn to each needle.

2. The pressure of Lycra yarn ought to be uniform.

Fabric press off

Causes

Texture press off shows up, as a major or little gap in the texture, caused because of the intrusion of the circle framing process, as an aftereffect of the yarn breakage or shut needle snares.

1. End breakage on feeders, with all needles weaving.
2. Yarn feeder staying in lifted up position, due to which, the yarn doesn't get feed in the snares of the needles.

Fig 29**:** fabric press off.

Cures

1. Needle indicators, ought to be set properly.to distinguish the nearby needles and keep the texture tube from totally squeezing off.
2. Proper yarn strain ought to be kept up ,on every one of the feeders.

Needle break

Causes

1. High yarn tension.
2. Bad setting of the yarn feeders.

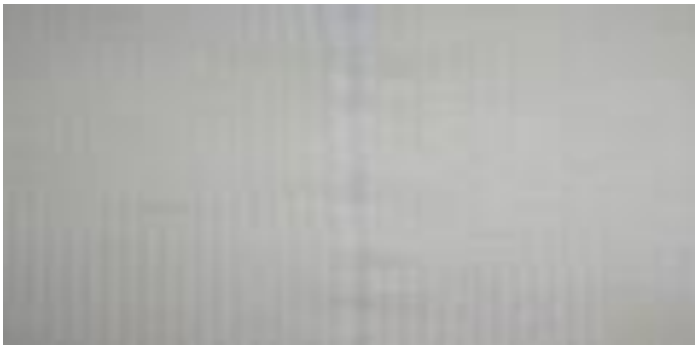


Fig 30: needle break

Cures

1. Ensure uniform & the right yarn tension on all the feeders.
2. Keep the recommended gap between the yarn feeders and the needles.
3. Periodically change the complete set of needles.

Thick and thin place

Causes

Because of yarn issue .if thick and thin places stay in yarn and texture is weaved with that yarn, then this issue found in texture.

Fig 31: thick and thin place

Cures

1. Use same count yarn.
2. Use good quality yarn.

Defective selvedge
Cause

Selvage is the thickly knit edge of a bit of texture. Regularly utilized in reference to woven textures, the selvage should shield the texture from disentangling or fraying. Selvage can be blemished in various ways, including cut, waved or wrinkled. Cut selvage may likewise be alluded to as broken selvage or tore selvage.

Fig 32: defective selvage.

Cures

Accurately altering the linger and legitimately building the edges of the texture ought to keep this imperfection.

CHAPTER 4

EXPERIMENTAL WORK

We are working of two Industries and, we are information gathered of Ayman Textile and hosiery Ltd. what's more, Magpie composite Textile Ltd. We are chipping away at some machine like single Jersey, Rib and interlock. We working for discover diverse kinds of sewing flaw and we worked by how frequently we get faults from machine and we discover some imperative information:

Data collection for single jersey m/c;

Table: 2

Faults of single jersey fabric in 500 m

Type of faults	Size of faults	No. of faults existing process	No. of fault developing process	% of fault existing process	% of faults developing process
Drop stitch	1.1"- 2.5"	25	11	5%	2.2%
Barrenness	2.5"- 5.5"	20	6	4%	1.2%
Streakiness	2.7"- 6"	20	4	4%	0.8%
Snarls	1.12"- 2.30"	25	9	5%	1.8%
Contamination	1"- 2.6"	30	11	6%	2.2%
Spirally	3.6"- 6"	25	9	5%	1.8%
Needle lines	3"- 5.6"	20	7	4%	1.4%
Sinker line	2.5"- 5.7"	0	0	0	0
Oil line	1"- 4"	20	5	4%	1%
Surface hairiness & piling	2"- 6"	25	13	5%	2.6%
Bowing	3.6"- 5"	17	6	3.4%	3.4%

Table 3
Faults of RIB fabric IN (500m)

Name of fault	Size of faults	No of faults existing process	No of faults developing process	% of faults existing process	% of faults developing process
Drop stitch	1.2-2.5”	25	10	5%	2%
Barrenness	2.5-5.5”	20	8	4%	1.6%
Streakiness	2.7-6”	20	8	4%	1.6%
Snarls	1.12-2.30”	30	12	6%	2.4%
Contamination	1-2.6”	30	12	6%	2.4%
Spirally	3.6-6”	20	8	4%	1.6%
Needle line	3-5.6”	17	6	3.4%	1.2%
Sinker line	2.5-5.7”	0	0	0	0
Oil line	1-4’	25	10	5%	2%
Pilling	2-6”	15	6	3%	1.2%
Lycra out	3.6-5”	13	4	2.6%	0.8%

Table 4

Faults of interlock fabric in 500 m

Faults name	Size	No of faults existing process	No of faults developing process	% of existing faults	%of faults developing process
Hole	1.1-2.5”	25	10	5%	2%
Barrenness	2.5”-5.5”	20	8	4%	1.2%
Streakiness	2.7”-6”	12	6	3.4%	1.2%
Snarls	1.12”-2.30”	25	10	5%	2%
Contamination	1”-2.6”	30	12	6%	2.4%
Spirally	3.6”-6”	18	8	4.4%	1.6%
Needle line	3”-5.6”	15	6	3%	1.25%
Sinker line	2.5”-5.7”	15	5	3%	1%
Oil line	1”-4”	15	6	3%	1.2%
Pilling	2”-6”	25	10	5%	2%
Bowing	3.6”-5”	12	6	3.4%	1.2%

Table 5

Fleece Grey fabric analysis (4 point system)

M/c no	M/c Dia	G. Dia	GSM	Hole	Oil spot	Lycra loop out	Set off	Fly slub cont.	Wt.	Total point	Point/ 100 length
48(f/dia 68-70)	30/20	39	256	1	4	1	1	4	32	4	2.6
								4	28	8	6.1
								3	21	7	7.1
								3	24	7	6.2
		38.5					1	4	20	8	8.5
								4	13.3	4	6.4
								3	24.5	7	6.1

Table 6

Fleece fabric analysis (4 point system)

m/c no	m/c dial	G. dial	GSM	Hole	Ink/oil Black spot	Lycra loop out	Set off	Fly slub cont.	w.t	Total point	Points/100 length
21 (F/dial 68)	30/20	39	265	01	09	04	01	3	20	11	12.1
								5	23	8	7.7
								4	36	8	4.9
								4	41	8	4.3
								3	30	11	8.1
								4	29	4	2.9
								3	32.5	7	4.7

Table 7

Rib fabric analysis (4 point system)

M/c no	M/c dia	M/c gauge	Gsm	Hole	Loop pc/m	Lycra out	Fly slub cont.	Wt.	Total points	Total points/100
41(f/dia 49-51)	44/11	33.5	296	1	6	1	3	8	7	21.5
								12		
							4	14	8	14.14
							4	20.5	8	9.6
							4	17	11	16
							3	15	15	21.8
FULL ROLL L/DROP FOR REJECT.										

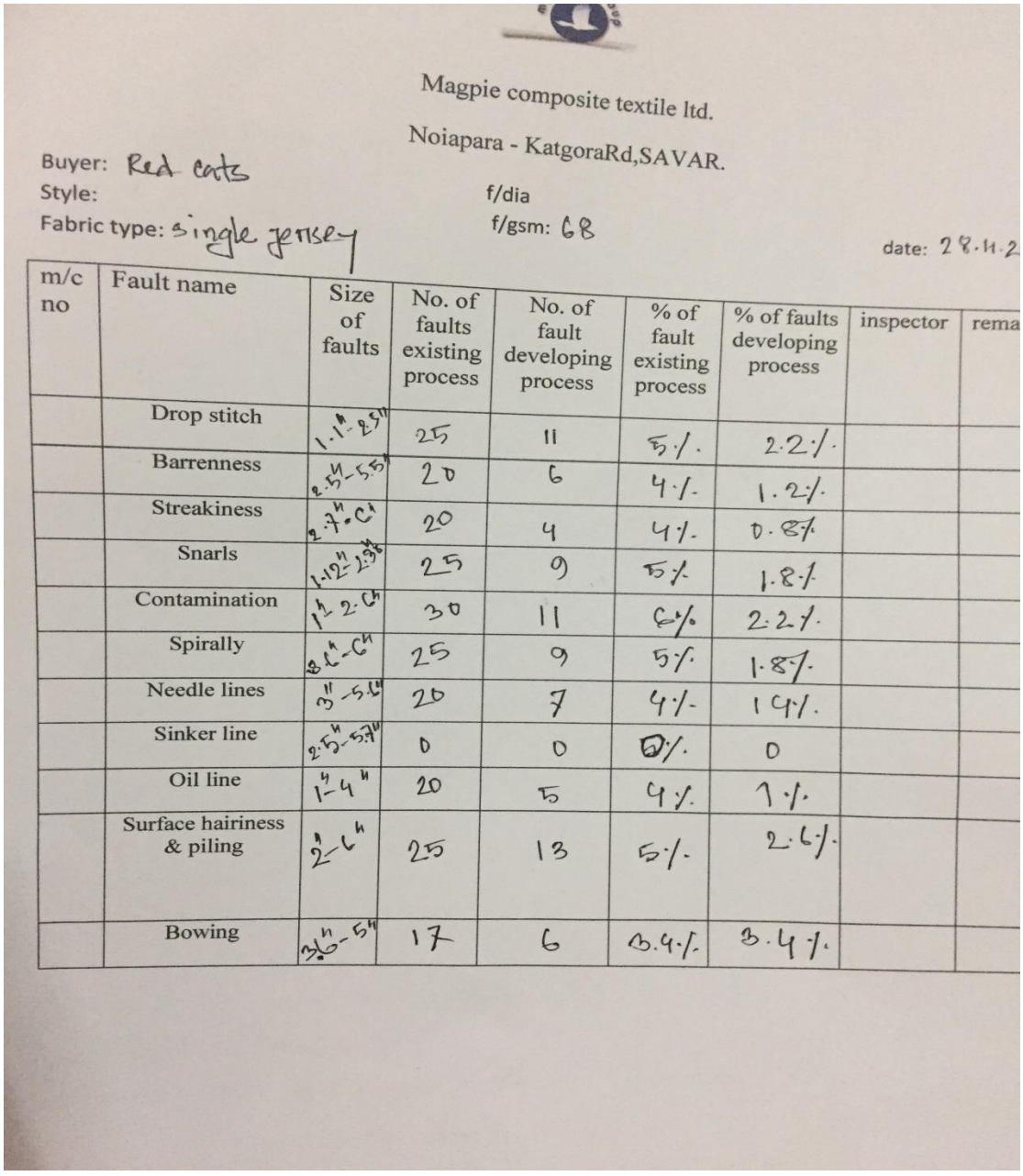
Here we see the significant sew deficiencies rate (%) for different kinds of weave texture in existing procedure and creating process where we can limit the current short comings rate (%) in a Lot by taking the above cures which are talked about before.

CHAPTER 5

RESULT AND DISCUSSION

In this experiment we collect different date from ,single jersey ,rib ,interlock ,fleece fabric and analysis different data and get different result which helps us to find out how can we over come from faults and reduce faults and get good fabric from our business purpose.

For **single jersey fabric fault analysis sheet:**



Magpie composite textile ltd.

Noiapara - KatgoraRd,SAVAR.

Buyer: Red cats

Style:

f/dia

Fabric type: single jersey

f/gsm: 68

date: 28.11.2

m/c no	Fault name	Size of faults	No. of faults existing process	No. of fault developing process	% of fault existing process	% of faults developing process	inspector	rema
	Drop stitch	1.1"-2.5"	25	11	5%	2.2%		
	Barrenness	2.5"-5.5"	20	6	4%	1.2%		
	Streakiness	2.7"-C"	20	4	4%	0.8%		
	Snarls	1.1"-2.5"	25	9	5%	1.8%		
	Contamination	1"-2.5"	30	11	6%	2.2%		
	Spirally	2.5"-C"	25	9	5%	1.8%		
	Needle lines	3"-5.5"	20	7	4%	1.4%		
	Sinker line	2.5"-5.7"	0	0	0%	0		
	Oil line	1"-4"	20	5	4%	1%		
	Surface hairiness & piling	2"-C"	25	13	5%	2.6%		
	Bowing	3.6"-5"	17	6	3.4%	3.4%		

Fig 33: single jersey fabric fault analysis.

RESULT:

% of faults in existing process

For drop stitch

No of faults in 500 m fabric=25
so, so no of faults in 100 m fabric= (25*100)/500=5% ,
According to other faults will

Barrenness=4%,streaking=4%,snarls=5%,contamination=6%,spirally=5%,needle line=45,sinker line=0,oil line=4%,pilling=5%,bowing=3.45%.

% of faults in developing process

For drop stitch

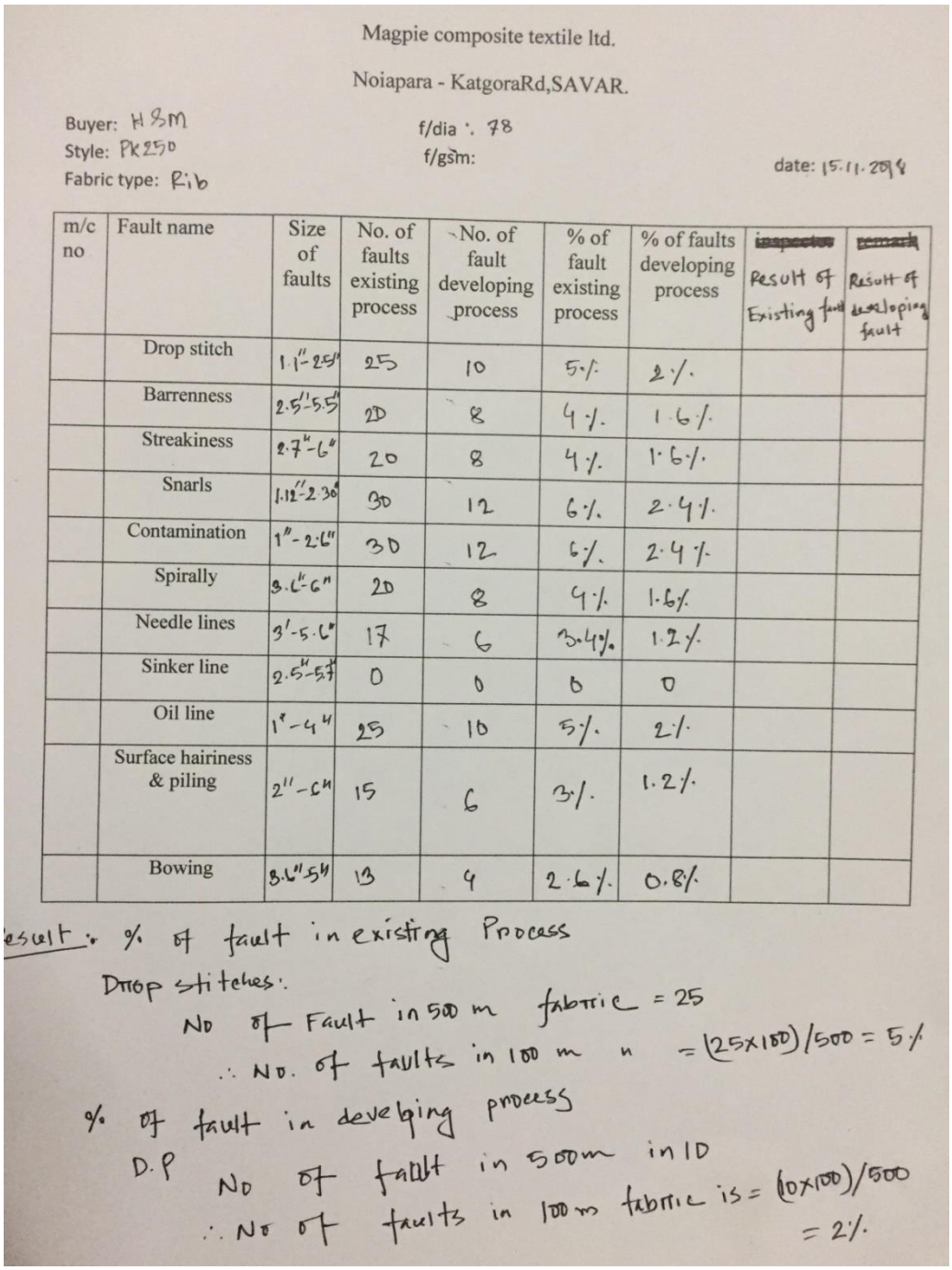
No of faults in 500 m fabric=11

So, no of faults in 100 m fabric is = (11*100)/500=2.2%.

Other faults

barreness=1.2%,streakiness=.8%,snarls=1.8%,contamination=6%,spirally=1.8%,needle line=1.4%,sinker line=0,oil line=1%,pilling=2.6%,bowing=3.4%.

For **rib fabric faults analysis:**



Magpie composite textile ltd.

Noiapara - KatgoraRd,SAVAR.

Buyer: H&M
Style: PK250
Fabric type: Rib

f/dia : 78
f/gsm:

date: 15.11.2018

m/c no	Fault name	Size of faults	No. of faults existing process	No. of fault developing process	% of fault existing process	% of faults developing process	~~inspector~~ Result of Existing fault	~~remark~~ Result of developing fault
	Drop stitch	1.1"-25"	25	10	5%	2%		
	Barrenness	2.5"-5.5"	20	8	4%	1.6%		
	Streakiness	2.7"-6"	20	8	4%	1.6%		
	Snarls	1.12"-2.36"	30	12	6%	2.4%		
	Contamination	1"-2.6"	30	12	6%	2.4%		
	Spirally	3.6"-6"	20	8	4%	1.6%		
	Needle lines	3'-5.6"	17	6	3.4%	1.2%		
	Sinker line	2.5"-5.7"	0	0	0	0		
	Oil line	1"-4"	25	10	5%	2%		
	Surface hairiness & piling	2"-6"	15	6	3%	1.2%		
	Bowing	3.6"-5"	13	4	2.6%	0.8%		

Result : % of fault in existing Process

Drop stitches:

No of Fault in 500 m fabric = 25

∴ No. of faults in 100 m " = (25×100)/500 = 5%

% of fault in developing process

D.P

No of fault in 500m in 10

∴ No of faults in 100 m fabric is = (10×100)/500

= 2%

Fig 34: Rib fabric faults analysis

Result:

% of faults in existing process

For drop stitch

No of faults in 500 m fabric =25

So, no of faults in 100 m fabric= (25*100)/500=5%

Barrenness=4% streakiness=4% snarls=6% contamination=6% spirally=4% needle line=3.4% oil line=5% pilling=3% bowing=2.6%.

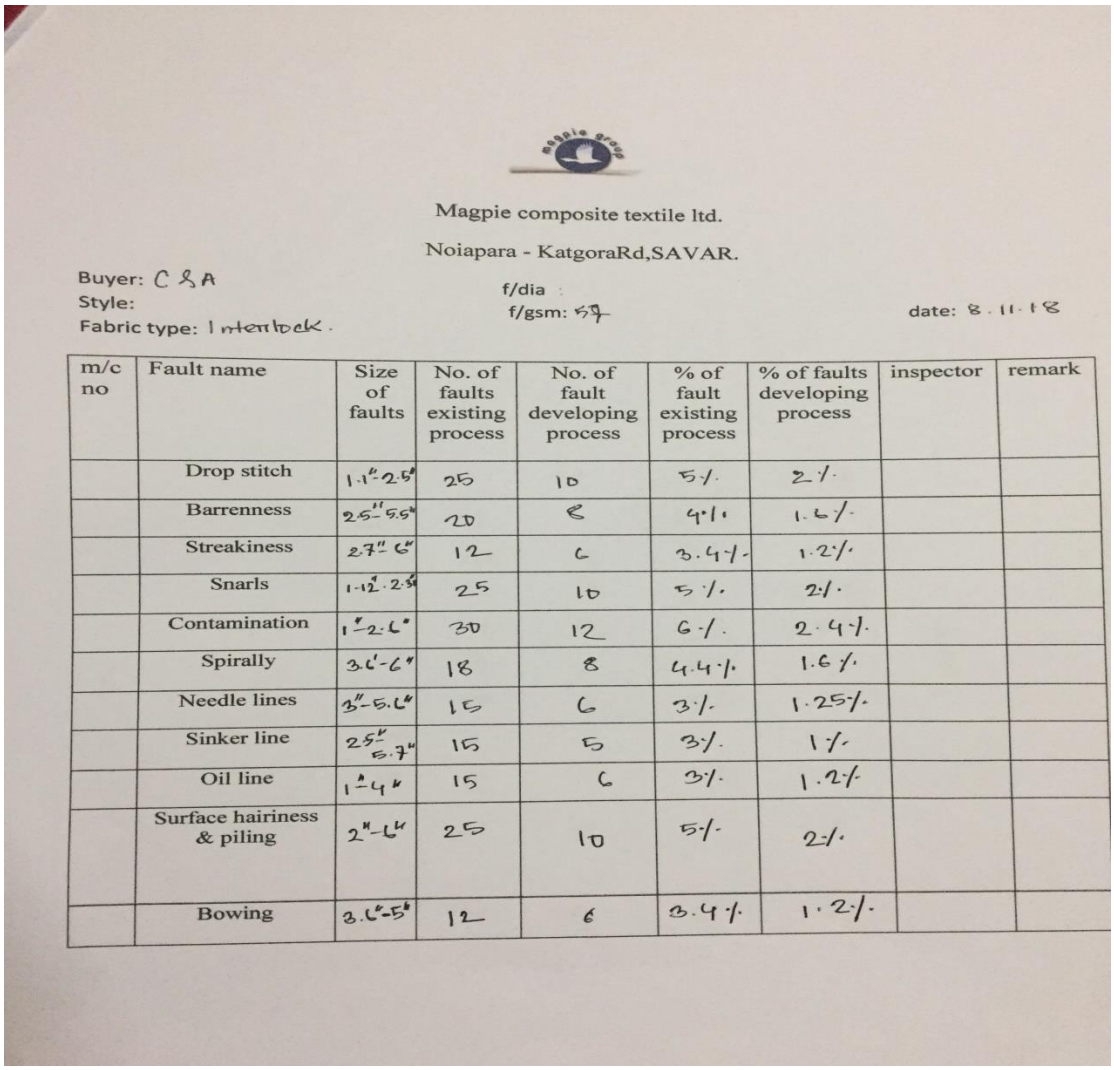
% of faults in developing process

No of faults in 500m fabric=10

So, no of faults in 100 m fabric=(10*100)/500=2%

Barrenness=2% streakiness=1.6% snarls=1.6% contamination=2.4% spirally=1.6% needle line=1.2% oil line=2% pilling=1.2% bowing=0.8%.

For **interlock fabric faults analysis**



Magpie composite textile ltd.

Noiapara - KatgoraRd,SAVAR.

Buyer: C & A
Style:
Fabric type: Interlock.

f/dia :
f/gsm: 57

date: 8.11.18

m/c no	Fault name	Size of faults	No. of faults existing process	No. of fault developing process	% of fault existing process	% of faults developing process	inspector	remark
	Drop stitch	1.1"-2.5"	25	10	5%	2%		
	Barrenness	2.5"-5.5"	20	8	4%	1.6%		
	Streakiness	2.7"-6"	12	6	3.4%	1.2%		
	Snarls	1.12"-2.5"	25	10	5%	2%		
	Contamination	1"-2.6"	30	12	6%	2.4%		
	Spirally	3.6"-6"	18	8	4.4%	1.6%		
	Needle lines	3"-5.6"	15	6	3%	1.25%		
	Sinker line	2.5"-5.7"	15	5	3%	1%		
	Oil line	1"-4"	15	6	3%	1.2%		
	Surface hairiness & piling	2"-6"	25	10	5%	2%		
	Bowing	3.6"-5"	12	6	3.4%	1.2%		

Fig 35: interlock fabric faults analysis

Result:

% of faults in existing process

Drop stitch

No of faults in 500 m fabric=25

So, no of faults in 100 m fabric=(25*100)/500=5%

According to other defect, barrenness=45 streakiness=3.4% snarls=5% contamination= 6% spirally=4.4% needle line=3% oil line=3% pilling=3% bowing=3.4%.

% of faults in developing process

Drop stitch

No of faults in 500 m fabric=10

So, no of faults in 100 m fabric=(10*100)/500=2%

According to other faults will barrenness=1.6% streakiness=1.6% snarls=2.4% contamination=2.4% spirally=1.6% needle line= 1.2% oil line=1.2% pilling=1% bowing=.8%.

Fleece fabric analysis:

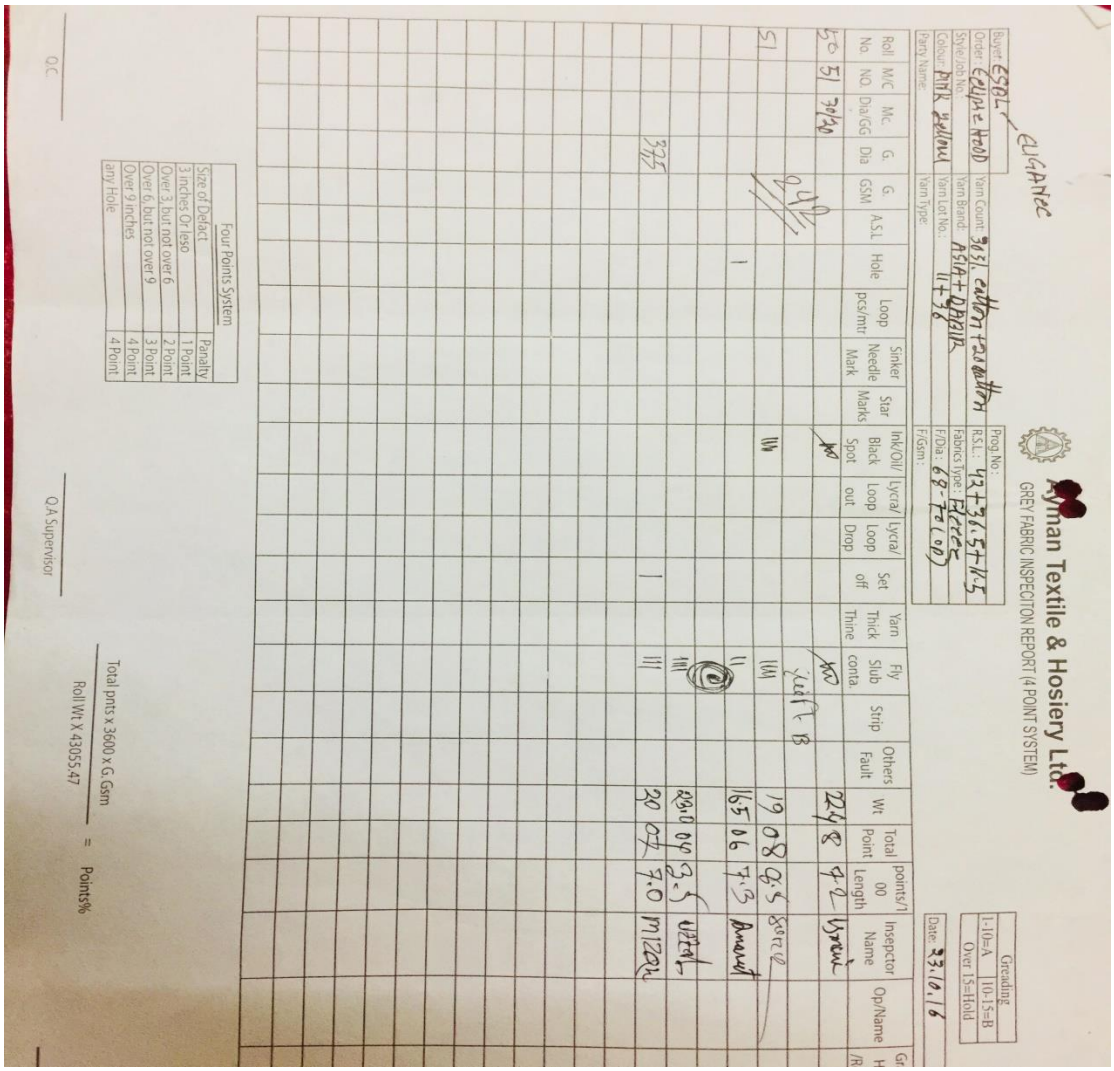


Fig 36: fleece fabric faults analysis in 4 point system

Result:

Using 4 point system we get

Oil spot in 2 shift =9, set of =1, fly slub according 3 shift we get (5+6+8) and there wt. are (22.4, and 19, 16.5 .and 23, 20).

Fleece fabric faults analysis

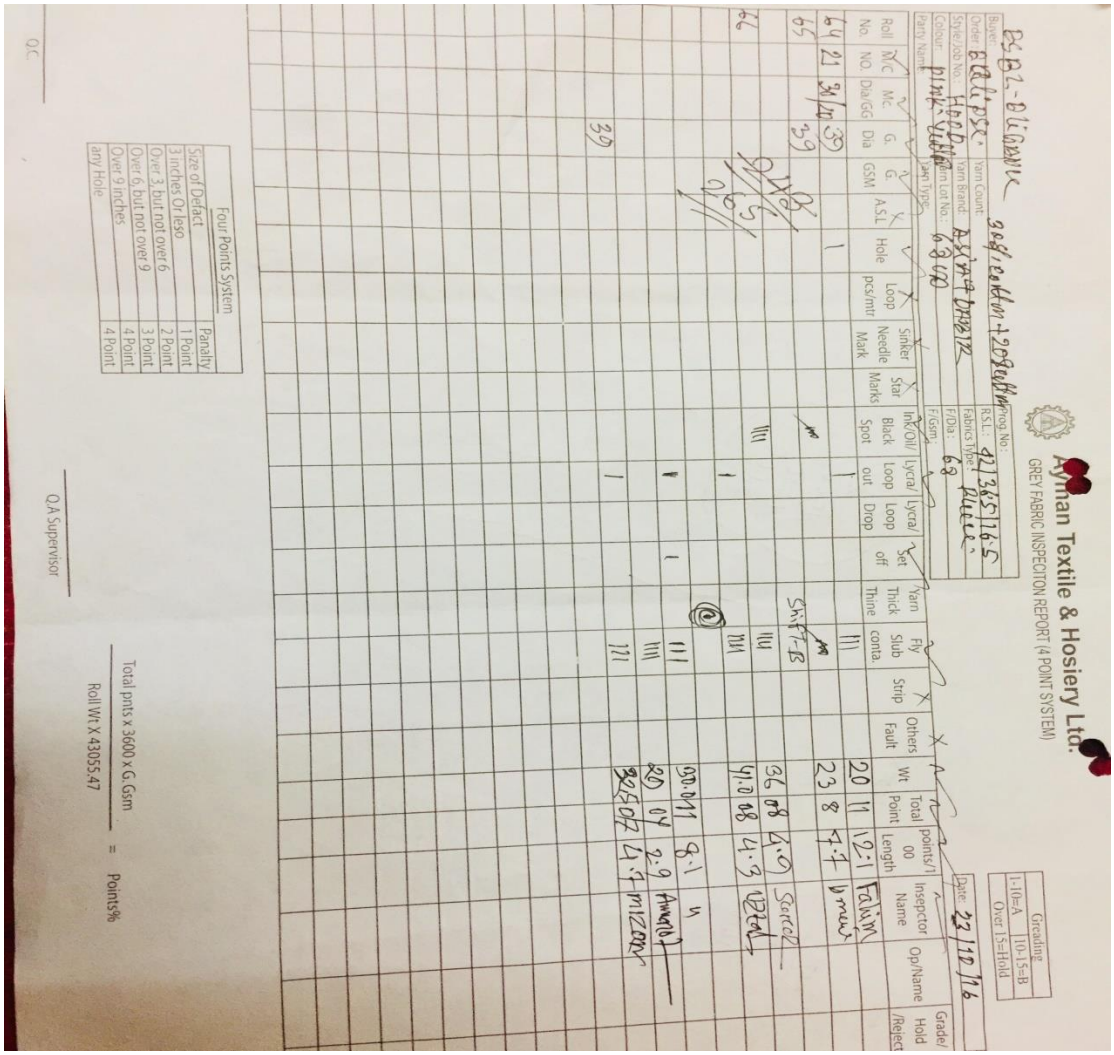


Fig 37: fleece fabric faults analysis

Result:

In 4 point system

Oil spot in2 shift=9, fly slub in 3 shift (8+8+10) and there wt. (20, 23 and 36, 41 and 30, 29, 32.50).

for rib fabric analysis using 4 point system

Fig 38: Rib fabric faults analysis by 4 point system

Result

Yarn count=295, loop pcs/m for shift c=6, fly slub for 3 shift according (3=4=11) and wt. of them (8 and 14 and 20.5, 17, 17).

Chart of fault existing and developing process

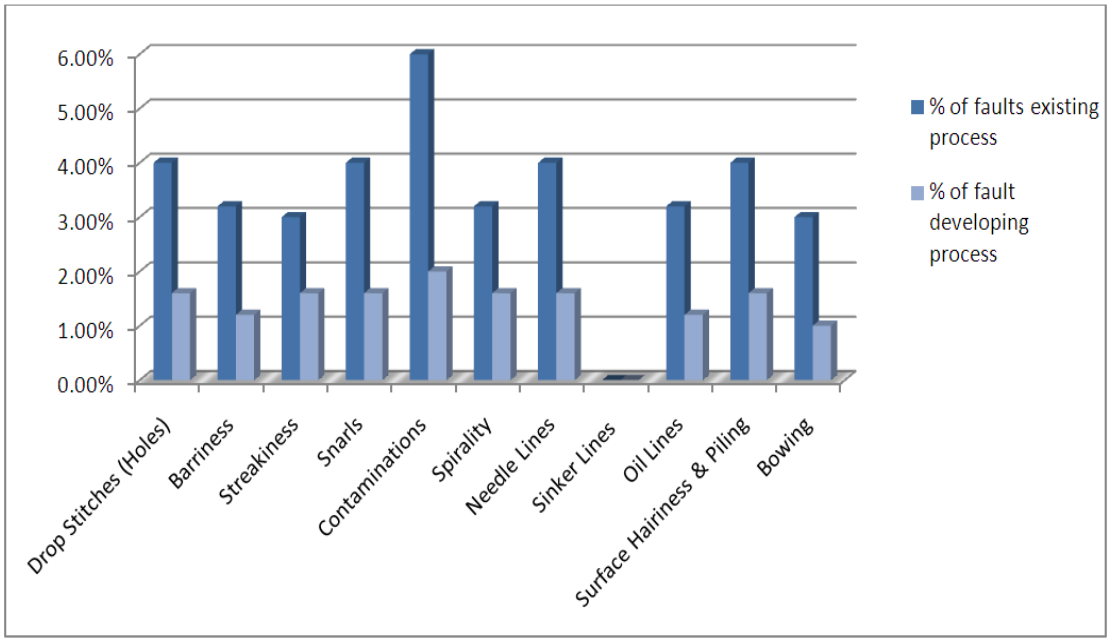


Fig 39: single jersey existing and developing faults

For fabric faults existing process

Drop stitch=4%

barrenness=3%

streakiness= 2.99%

snarls=3.98%

contamination=6%

needle line= 3.99%

oil line=3.25

pilling=3.98%

bowing=2.98%

sinker line=0

For fault developing process

Barrenness=1.5% streakiness=1.3% snarls=1.7% contamination=1.98% spirally= 1.6% needle line=1.5% oil line=1.5% pilling=1.7% bowing=0.98%.

% of finishing faults

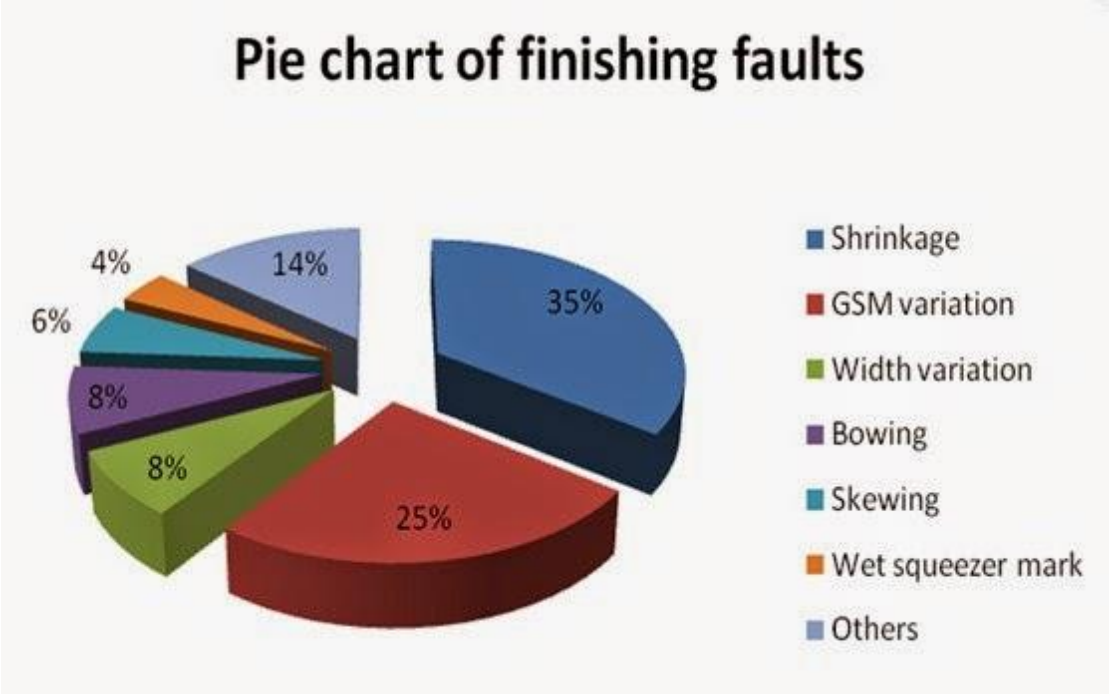


Fig 40: pie chart of single jersey finishing faults

Shrinkage=35%

Gsm variation =25%

Width variation=8%

Bowing=8%

Skewing=6%

Wet squeezer mark=4%

Other=14%

CHAPTER 6

CONCLUSION

Conclusion

By the following study can be helped form the outcome obtained from our study. The production process of double jersey circular knitting are analyzed and compare between the different machine existing faults and develop of faults are done. We have observed different types of knitting machine and how different types of faults produced. Wastage is major problem in knitting machine, we observed how many fabric are wastage in knitting machine and we also study how can we reduced this wastage. The different types of machine are work different way. If we control it properly we can get good outcome. we work on single jersey, double jersey (rib and interlock).we get different type of faults like drop stitch, Barrenness , snarls, pin hole ,thick and thin place ,Lycra out, Lycra burn ,Bowing, crease mark ,pilling, and some other faults which generated by fabric and dead cotton dye, uneven dyeing ,oil spot which are occur due to dyeing faults of fabric.in finishing faults we get dust, hairiness, contamination ,oil mark ,naps and other .here we try to find out major faults and try to solve that faults by developing them at low cost and increase knit fabric production .In the other hand we find out some fault which we use 4 point system to find them and which data is collect from different shift in the factory.

CHAPTER 7

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REFERENCE

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