Department of Textile Engineering

THESIS REPORT ON

Studies on The Knit Fabric Dyeing Defects.

Course Title: Project (Thesis) Course Code: TE-4214

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A thesis submitted in partial fulfillment of the requirements for the degree of **Bachelor of Science in Textile Engineering**

Advance in Wet Processing Technology, Fall-2021

LETTER OF APPROVAL

This project report was prepared by **MD. Fokhrul Hasan** bearing **ID:191-23 -659** and **Mnowar Hossain,** bearing **ID:191-23-688**, is approved in Partial Fulfillment of the Requirement for the **Degree of Bachelor of Science In Textile Engineering**. The Said student has completed their project work under my supervision. During the research period, I found them sincere, Hardworking, and Enthusiastic.

……..

Tanvir Ahamed Chowdhury

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DEDICATION

First and first, I would want to express my gratitude to Almighty Allah for allowing me to complete this Theses Report.

Then I'd want to convey my heartfelt gratitude to my teacher, **Mr. Tanvir Ahmed Chowdhury**, for providing me with this great Theses report on this issue. Sir, your valuable guidance has been the wants that help me research this Report and make it full proof success your suggestion and your instruction yes sir as the major contributor towards the completion of the assignment I am making this project not only for marks but also to increase my knowledge thanks again to you.

ACKNOWLEDGEMENT

First and first, we would want to express our gratitude to Almighty Allah for patiently allowing us to complete our internship program and, finally this Thesis Report Preparing this Report based on **"Wet Processing Technology (Knitted Fabric)"**, We have realized that it is extremely difficult to learn the basic and essential aspects of Wet Processing since they are so far apart from theoretical bookish knowledge.

Daffodil International University and **Tropical Knitex Ltd.** providing us with huge support and direction for our internship program to be accomplished successfully. It is the first time we have had the opportunity to gain real-world experience working on an evaluation report.

We would like to appreciations specially to our honorable teacher **Mr. Md. Mominur Rahman,** Assistant Professor & Head (In Charge), Department of Textile Engineering, whose track & instruction has taken us to our destination. I also like to express our genuine sense of gratefulness to our supervisor **Mr. Tanvir Ahmed Chowdhury, Assistant Professor, Department of Textile Engineering** for his nonstop advice, help and guide to make this Report.

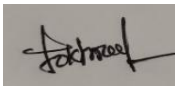
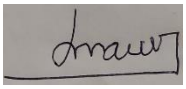
We would like to thanks the management of the **Tropical Knitex Ltd**. for giving us the opportunity to do the industrial training successfully and also their respected idea. Our deepest appreciation goes to **Md. Kamrul Islam-** DGM (Supply Chain), **Md. Abdullah Al Noman-** Sr. Merchandiser, for their permission to behavior our industrial training without which it would be uncompleted. Our thankfulness also goes to the employees of **Tropical Knitex Ltd.**

DECLARATION

We, therefore, declare that we completed this thesis report under the supervision of Mr. Tanvir Ahmed Chowdhury, Assistant Professor, Textile Engineering. Daffodil International University is a private university based in the United Kingdom.

We also certify that neither this thesis nor any part of this thesis report has been submitted to any other institution to receive a degree.

Submitted By

Name:	ID:	Signature:
Md. Fokhrul Hasan	191-23-659	
Mnowar Hossain	191-23-688	

This is to certify that the candidates above declaration is correct to the best of our knowledge.

ABSTRACT

Dyeing errors are widespread in the textile business. During the Dyeing of knits, a variety of defects might develop. When evaluating a problem, it's crucial to try to figure out what's causing it. If the likely source of the error is carefully considered, appropriate corrective action can be performed to ensure that the fault does not recur. The Fabric's absorbency must be uniform for uniform coloring. While pretreatment may not eliminate all-natural and synthetic contaminants in the grey material, residual should be limited and evenly dispersed. This study aims to identify the most common dyeing flaws in knit fabrics, as well as methods to eliminate or minimize these flaws.

Dyeing is a method of completely coloring fabrics, and its success is determined by the type and extent of pre-treatment used to provide high absorbency and whiteness. Other parameters, such as pH, textile type, fiber type, dying recipe formulation, dye solution preparation, liquor ratio, machinery selection, and so on, all play a role in the process of developing leveled hues with the least amount of work and money. This chapter emphasizes the fundamental elements that must be remembered in order to effectively utilize dyeing technology.

I hope that this paper will be useful to individuals who work in the textile dying sector.

TABLE OF CONTENT

CHAPTER – 1
INTRODUCTION

Introduction:

Bangladesh's textile industry is the country's largest. It is also Bangladesh's top earner of foreign money. This sector now accounts for about 80% of Bangladesh's foreign revenue. The growth of textile-based industries has been aided by the availability of low-cost labor. This industry now supports more than 5.7 million people. The majority of them are female. This industry aids in the independence of women. Single jersey fabrics, such as plain, Lacoste, and pique, are widely used for the body of garments in Bangladesh. When interlock, rib, and fleece textiles are in unbalanced structures and utilized as body fabrics for garments, they are also turned inside out. Dyeing is the process of giving a textile material a color. Knit fabric dyeing is distinct from other dyeing processes such as fiber dyeing or yarn dyeing. Various sorts of dyeing defects occur during these processes, which are referred to as dyeing flaws. Some certain processes and approaches can be used to mitigate these flaws. To remove trapped air, the goods must be properly wetted out while they are in the dyeing process.

This ensures that the dye solution has access to all-fiber surfaces equally. If wetting is expected to be problematic, wetting-out may entail putting the material through the dyeing machine in warm or hot water in the presence of a wetting agent. To remove the remaining chemicals from Fabric that has been scoured or bleached in the dyeing machine, it must be rinsed. It will be completely soaked, but it must be run in water the pH value checked, and if necessary, adjusted before dyes are added. Dyeing can be done in two different ways: batch exhaustion or continuous impregnation and fixing. During the dye bath, all textiles are repeatedly in touch with all of the dye liquor, and the fibres gradually absorb the dyes. To achieve level, well-penetrated Dyeing, careful control of the dyeing temperature, pH, and auxiliary chemical concentrations is typically required. If the dye is unable to travel from extensively dyed to weakly dyed parts during the process, this step is required.


DYEING M/C-16 (CAPACITY-1800 KGS)
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1.2 Objectives of the Thesis:

Textiles are the most important major foreign exchange earner, so it is essential to rapid development Dyeing & Finishing technology needs to advance significantly, especially in the garment industry. Because practical knowledge is much more effective than academic skills, it will complete the experience both conceptually and empirically. The study's key objectives are as follows:

- The purpose of this study is to assess the Dyeing & Finishing Process.
- In order to see the many types of shade effects in this technique.
- To solve several issues with the essential Dyeing & Finishing procedure.
- To investigate the differences between garments that have been Dyeing and those that have not been Dyeing.
- To distinguish between shade variations of the same Dyeing & Finishing procedure.
- To determine the key Dyeing & Finishing process's constraints.

1.3 Importance of the thesis:

A combination between our academical education line and practical life with various article, documents and calculation. A large number of foreign currencies are earned by textile sector around 81% to 86%. The importance of this thesis is to determine the different types of Dyeing & Finishing effect in knit garments. For this inquisition currently fashionable regular Knit (100% cotton with twill 3/1 weave construction) garments knit Dyeing chosen.

1.4 Materials and Methods

Dyeing is frequently one of the last steps in the manufacturing process. Color blotches and spots, color shading from side to side, end to end, or face to face of the material, water markings, and crack or crease lines are all common dyeing flaws that are often the result of inadequate preparation, dye selection, or dyeing process. The Fabric's absorbency must be uniform for uniform coloring. While it is possible that the preparation will not completely remove all of the natural and synthetic chemicals present in the grey material, the residual should be limited and evenly dispersed. During the Dyeing of the knit Fabric, the following defects were discovered: a Variation in the shade (from batch to batch): Shade fluctuation from batch to batch is frequent in exhaust dyeing and cannot be avoided. Even so, the following factors should be carefully monitored to ensure consistent shadow production from batch to batch.

CHAPTER – 2

LITERATURE REVIEW

2.1 Dyeing:

Dyeing is a common and efficient method of adding color to textiles and other porous materials. The dyeing process is used in a variety of industries, including textiles, cosmetics, and medicine, as well as construction, paper, packaging, and automobiles. Continuous study throughout the twentieth century has resulted in a vast array of synthetic hues. Contrary to popular opinion, Dyeing is used in a wide range of sectors.

Colored dyes have traditionally been derived from nature, primarily from plants, insects, and animals. Synthetic dyes were invented around the mid-nineteenth century thanks to advances in science and technology. William Perkin invented the first synthetic dye in 1856. It was a dark purple color called "mauveine" that was made from coal tar. Later in 1869, Alizarin, a red dye originally obtained from madder root, became the first natural pigment to be synthetically copied, causing the naturally derived dye business to collapse.

Dry powders, grains, copied and pasted, liquid, pellets, and chips are just a few of the dye forms accessible. The dyeing process for textile fibers entails coloring the cloth in a dye bath, which is usually aqueous. The dye's absorption is a significant aspect in the color's ability to sustain a relatively long-lasting state. It's also crucial that the dye doesn't fade quickly when exposed to light. The four molecular forces that keep everything in place Electrolyte forces, hydrogen bonding, Vander Wals' forces, and covalent chemical bonds are the four molecular forces that enable effective dye molecule absorption.

2.2 Dyeing Principle:

Dyeing is a time-consuming process. The initial diffusion coefficient from of the main dye solution to the surface of the fiber, adsorption of a dye on the fibre surface, and dispersion of a dye into the fibre are commonly thought to be involved in the transmission of a dye molecule from the a dye solution into a fibre.

2.3 Objective of Dyeing:

Dyeing's main goal is to apply a consistent color to the material (fiber, yarn, or Fabric) while maintaining the required color fastness. Tie-dye and able to print are methods of applying color in a localized manner.

- To get the appropriate color, you'll need to do a little bit of work.
- Make sure the color is set (also known as colorfastness) so it doesn't fade or run.
- Ascertain that the color is consistent throughout.
- Check to see if the dye may harm the fiber, yarn, or cloth.
- Ensure you can continue the cycle while keeping the color consistent.

2.4 Process Flow Chart of Knit Dyeing:

Grey fabric inspection

↓

Batching

↓

Fabric turning

↓

Loading to the m/c

↓

Pre-treatment (Scouring & Bleaching)

↓

Dyeing

↓

Dewatering

↓

Drying

↓

Compacting & Calendaring

↓

Final inspection & packing

Knitted fabrics are subjected to a variety of chemical treatments. Scouring, bleaching, Dyeing, dewatering with a hydro extractor, sewing, steering, compacting, softener padding, relax drying, and final inspection are some examples. These treatments are carried out to impart a specific attribute to the Fabric, such as scouring for absorbency, bleaching for whiteness, and Dyeing for color. And then there's the finishing, which improves the Fabric's softness and handling. Various parameters have an impact on the qualities of knitted materials. Raw materials, yarn structure,fabric structure, production phases, and finishing are only a few examples. The method used has an impact on the Fabric's characteristics and overall performance.

Internal tensions accumulated during spinning and knitting are eliminated during the finishing process. The fabrics are almost completely loosened. Different types of knitted Fabric in terms of aesthetic and practical features can be generated from the same unprocessed materials by using different procedures and finishing methods. Knitted items, unlike woven cotton materials, are easily starched, and their loops would be warped by the dyeing cylinders' stretching stress. As a result, special drying machines have been designed to dry knitwear with the least amount of strain.

2.5 Introduction to finishing processes:

The goal of finishing operations is to change the surface of a manufactured part to achieve a specific attribute. Better attractiveness, adhesion, solderability, chemical, corrosion, tarnish, or abrasion resistance, durability, electrical conductivity, defect elimination, and surface friction management are all desirable properties. These approaches can be used to recover original dimensions or salvage or repair a part in some instances.

Finishing techniques are divided into two groups, which are distinguished by how they affect a workpiece. These procedures involve either removing/reshaping or adding/altering the finish. The removing/reshaping methods are used to remove or reshape a part's surface to achieve a desired finish. Some consumers, for example, want a more refined, reshaped, smoothed, or abrasive surface, as well as a more aesthetically pleasing exterior. Friction and sand blowing, laser ablation and embossing, polishing, and superfinishing are just a few of the procedures that are used.

Similarly, the adding/altering operations affect the surface of a part, but instead of removing or modifying it, a coat of the desired substance is applied to provide the needed qualities that would otherwise be lacking. The process considers, Dyeing, electroplating, electroplating plated, anodizing, plating, and blasting are some of the most prevalent procedures for adding/altering a part's surface.

2.6 The following are the goals of textile finishing:

- To improve the textile materials' beauty and serviceability.
- To accentuate/inhibit various natural qualities on the textile materials such as smoothing, de-lusting, brightness, etc.

- To modify the surface properties of textile materials.
- Too willing to try new characteristics/properties of textile fabrics such as highly flammable, water repellent, or stain-resistant finishes.
- To extend the life and stability of textile materials.
- To establish the Fabric, so that it may be kept its structure and structure.
- To introduce the compounds into the textile materials.
- To meet up certain end uses.

2.7 Faults of Knit Fabric Observed in the Textile Industry:

Knit Fabric has a variety of flaws in the textile industry, from its manufacturing method to completely unexpected coloring finishes. Fabric flaws like these lower the overall quality of the knit Fabric, which has a substantial impact on the profit %. As a result, a textile engineer should be familiar with all of the knit fabric flaws discussed in this article, as well as the correct photographs.

2.8 Faults saw during Dyeing the knit Fabric:

1. Uneven Dyeing,
2. Dye spots,
3. Pilling,
4. Soda spot.
5. Shade variation (Batch to batch).
6. Dimensional stability (shrinkage).

2.9 Faults have seen during finishing the knit dyeing fabric:

1. Skew.
2. Slitting fault.
3. Uneven brushing.
4. Crease mark.
5. Unwanted mark.
6. Oil mark.
7. Silicon spot.
8. Line mark.
9. Lycra out.
10. Sewding Fault.

CHAPTER – 3

EXPERIMENTAL DETAILS

3.1 Faults saw during Dyeing the knit Fabric:

3.1.1 Shade variation (Batch to batch):

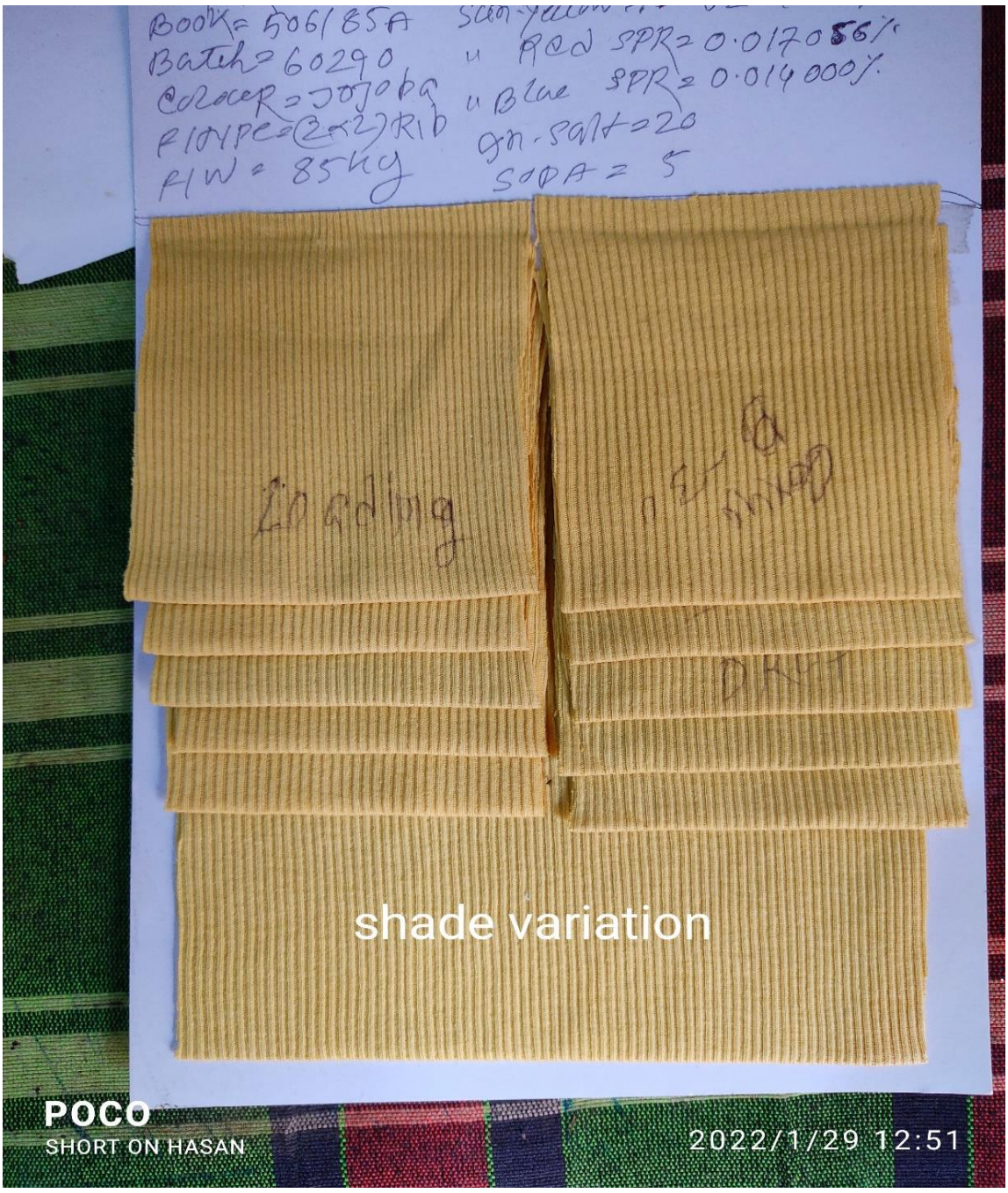


Fig.1 Faults: Shade variation (Batch to batch)

3.1.2 Uneven Dyeing:

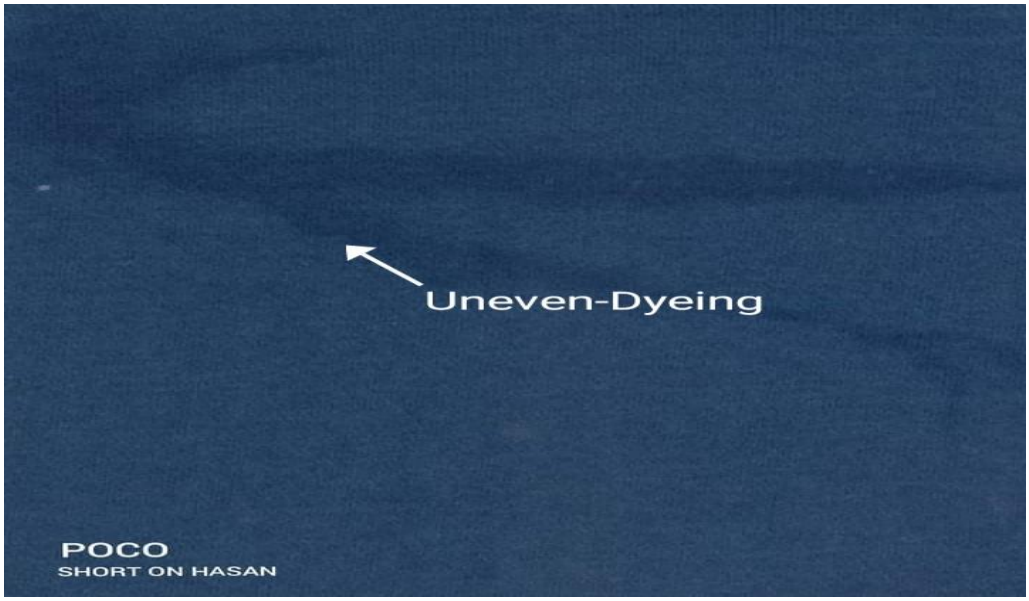


Fig. 2 Faults: Uneven Dyeing

3.1.3 Dye spot:

Fig. 3. Faults Name: Dye Spots.

Fabric construction: - 70/30 CVC Fleece Color: - Pink Machine name: - Fong's dyeing m/c Fault name: - Dye spots.

3.1.4 Pilling:

Fig. 4. Faults Name: Pilling.

3.1.5 Soda spot:

Fig. 5. Fault Soda Spot

3.2 Defects have seen during finishing the knit dyeing fabric:

3.2.1 Skew:

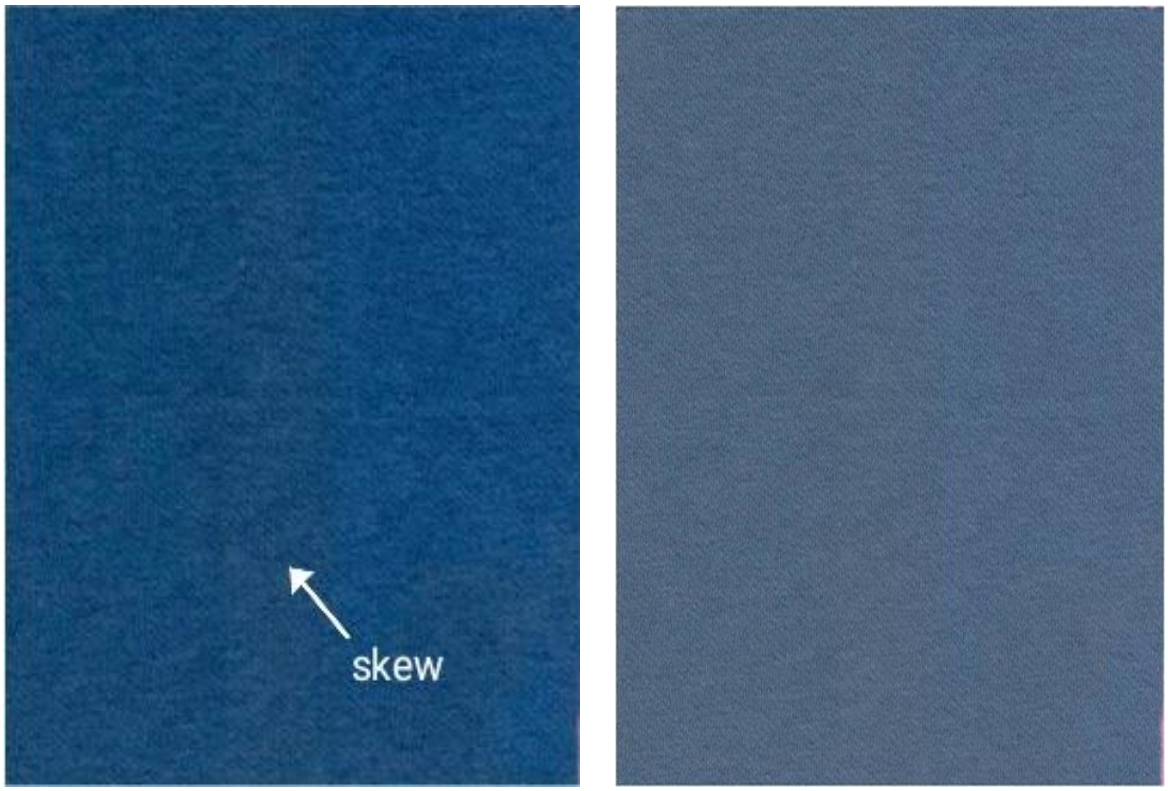


Fig. 6 Faults Name: Skew

3.2.2 Crease Mark:

As the dark uneven continuous line breaks, the cruise sign shows in knitted cloth.

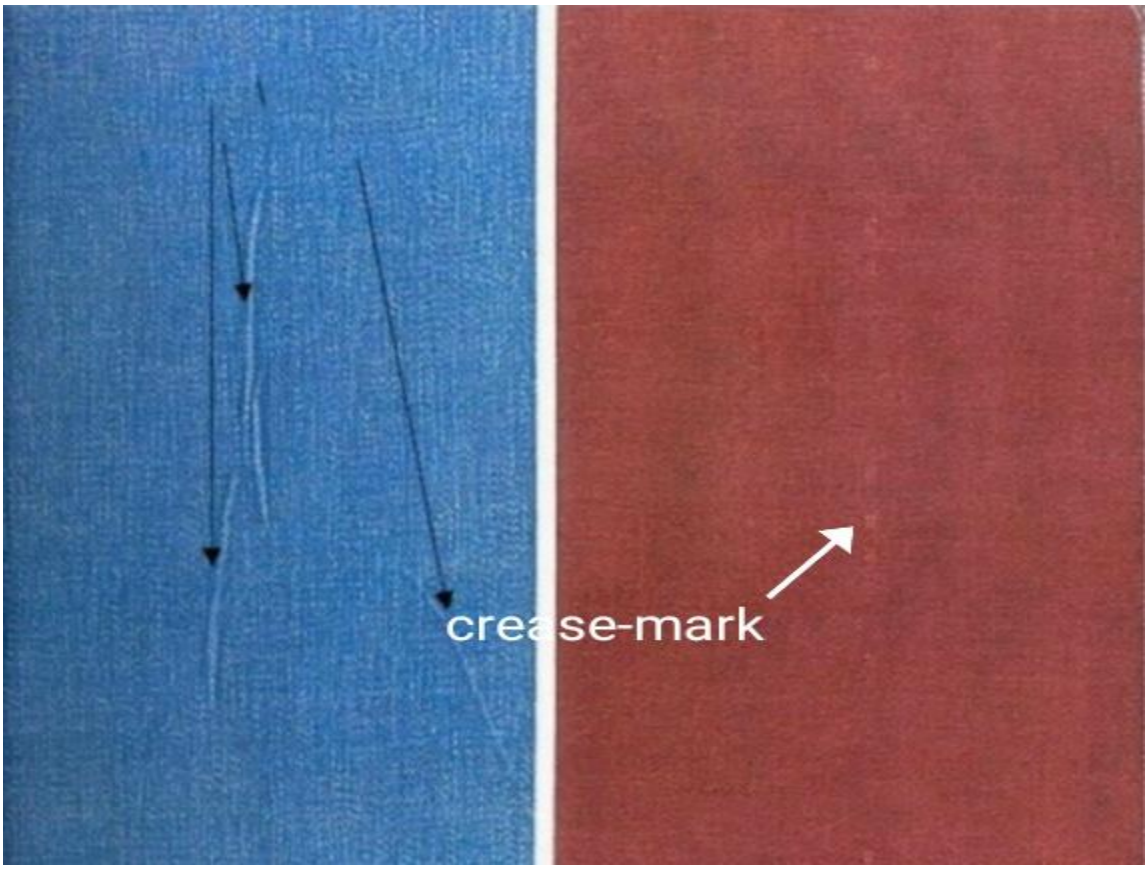


Fig. 7 Faults Name: Crease Mark.

3.2.3 Slitting fault:

Fig. 8 Fault Name: Slitting fault Slitting Machine

3.2.4 Uneven Brushing:

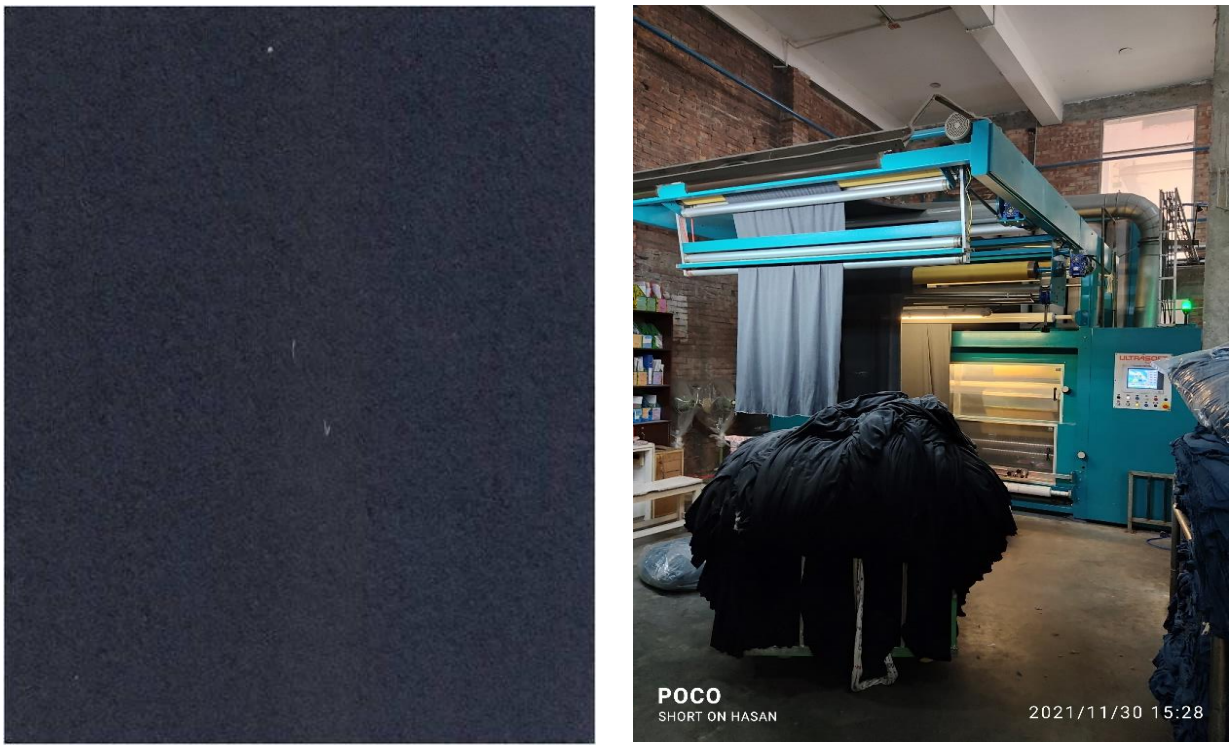


Fig. 9 Fault Name: Uneven Brushing

3.2.5 Unwanted mark:

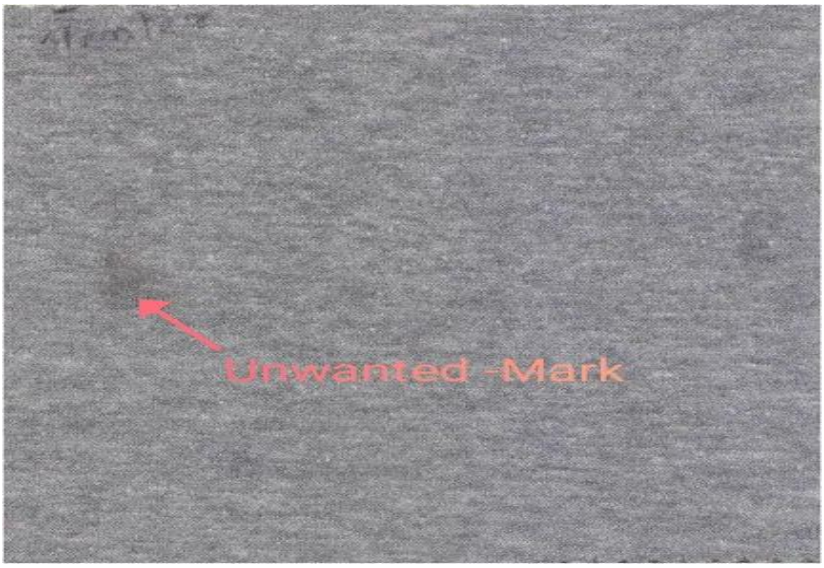


Fig. 10 Fault Name: Unwanted mark

3.2.6 Silicon Spot:

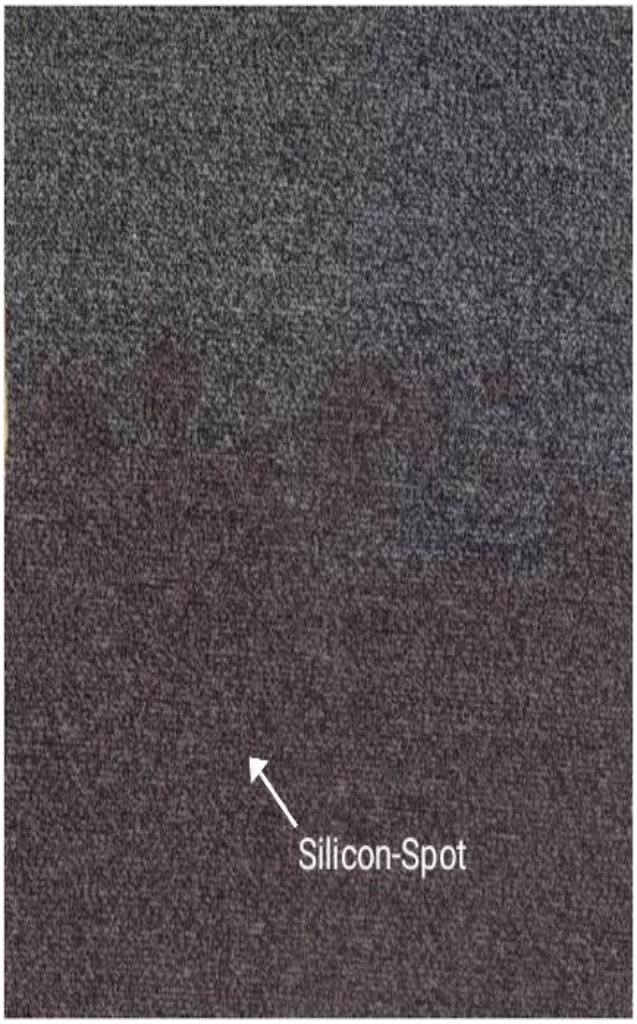


Fig. 11 Fault- Silicon Spot

Fig. 12 Fault- Silicon Spot.

3.2.7 Oil mark:

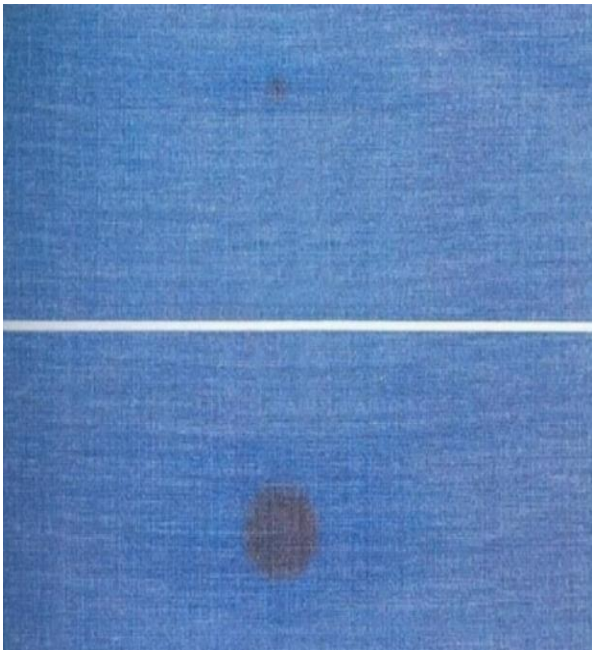


Fig. 13 Fault- Oil Mark. **Fig. 14 Fault- Oil Mark.**

3.2.8 Lycra out:

Fig. 17. Lycra Out Fabric construction: - 97/3 1×1 Rib Fault: - Lycra out

3.2.9 Line mark.

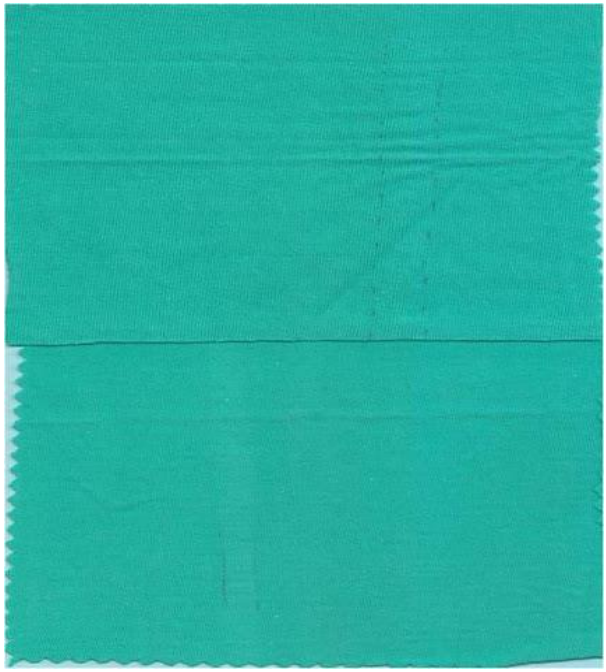


Fig. 15 Fault- Line mark

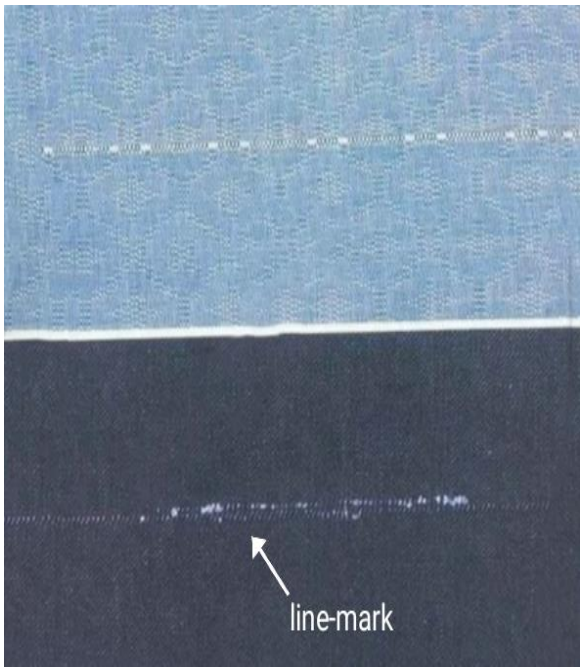


Fig. 16. Fault- Line mark

This Fabric is also widely seen in the waistbands of sweatpants, loungewear, and any other sorts of flexible underwear or bottoms. Lycra is utilized in most forms of socks, aside from waistbands; without it, socks would be substantially less stretchable, and they would be more difficult to put on and remove.

3.2.10 Sewding Fault:

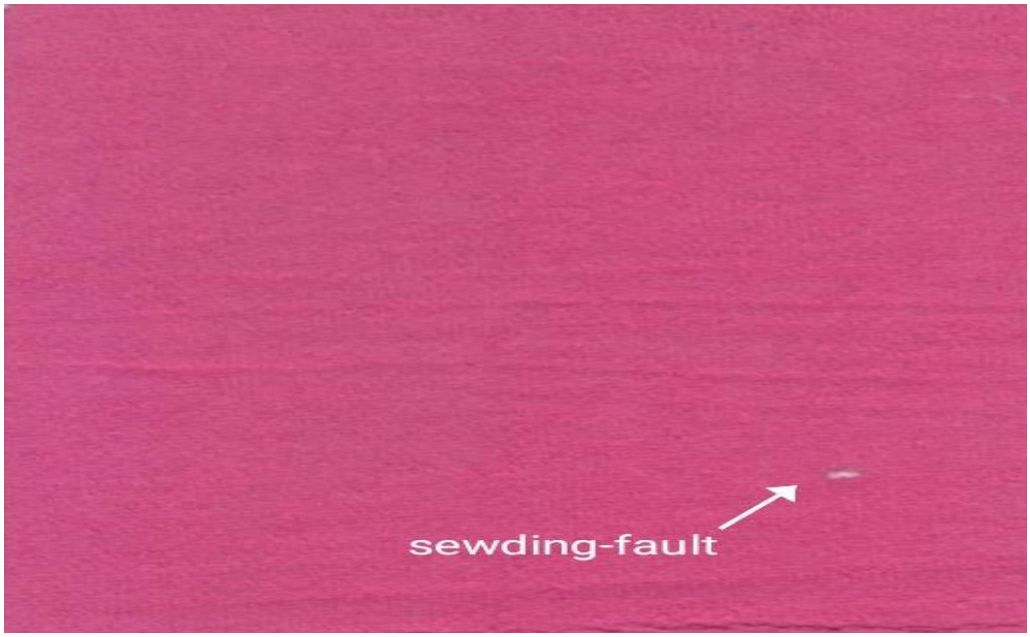


Fig. 18 Fault- Sewding Fault

CHAPTER –4

DISCUSSION OF RESULT

4.1 Defects have seen during Dyeing the knit dyeing fabric:

4.1.1 Shade variation (Batch to batch):

Shade fluctuation from batch to batch is frequent in exhaust dyeing and cannot be avoided. Even so, the following factors should be carefully monitored to ensure consistent shadow generation from batch to batch-

Causes:

- Chemicals and colors from several brands were used. Poor pretreatment procedure.
- Different coloring techniques for the same shade depth.
- Different liquor ratios are used.

Remedies:

- Use common colors and chemical.
- Maintain the same liquor ratio.
- Pretreatment should be done according to the normal protocol.
- Continue to dye in the same technique.
- For the same shade depth, a similar dyeing technique should be performed.
- Ensure that the operators are using the correct bulk chemicals.
- In the process, at the same time and temperature.
- Check the pH, hardness, and sodium carbonate concentration of your source water daily.

Our Opinion: Used To suitable dyes, chemicals, liquor ratio and maintain process technique, time, temperature, and pH are controlled.

4.1.2 Uneven Dyeing:

Causes of faults:

- The correct pH value was not kept.
- The grey Fabric was not thoroughly scoured and bleached.
- The hardness of the water.
- Migration that isn't done correctly.
- Pretreatment that isn't uniform.
- Uneven heat distribution.
- Dosing of soda incorrectly.
- Adding colors and chemicals quickly.

Remedies:

- Maintain the proper pH level.
- Using the right scouring and bleaching methods on the Fabric.
- Maintain the hardness of the water.
- Migration in a proper manner.
- Assuring a uniform pretreatment.
- Assuring an equal heat distribution.
- Dosing of soda correctly

Our Opinion:

Heat and dosing soda are controlled to maintain pH, scouring and bleaching methods.

4.1.3 Dye Spot:

Causes:

- Dye deposits on the m/c have resulted in colored patches.
- Improper dye-stuff mixing into the solution.
- Not completely mixing and dissolving the dye material in the correct amount of water.
- Hardness of the dye bath
- There is no agitation of the dye substance.

Remedies:

- Using an acceptable amount of sequestering agent to lessen bath hardness requires proper mixing and thoroughly dissolving of dyestuff in the appropriate amount of water.
- Proper agitation is essential.
- It is necessary to clean the m/c thoroughly.
- By dissolving dyes and chemicals properly.
- The big undissolved particles are removed by straining the dissolved dyestuff through a fine stainless steel mesh strainer.

Our Opinion:

To use suitable dyes, chemicals, liquor ratio and maintain clean technique, time, temperature and pH are controlled.

4.1.4 Pilling:

Causes:

- Excessive processing speed; excessive foam generation in the dye bath; too much mechanical stress on the Fabric's surface.
- Fabric friction is to blame.
- Insufficient enzyme treatment.
- The yarn isn't up to snuff.

Remedies:

- Using a proper chemical lubricant, as well as an antifoaming agent.
- By turning the Fabric inside out before dyeing it.
- Correct enzyme treatment.

Our Opinion:

To used proper chemical lubricant , agent, liquor ratio and maintain enzyme treatment are control.

4.1.5 Soda spot:

Causes of fault:

- Water hardness Improper migration Correct PH value not maintained
- Pretreatment that isn't uniform
- Uneven heat distribution
- Dosing of soda incorrectly
- Adding colors and chemicals quickly

Remedies:

- Correct pH value is maintained; the cloth is adequately scrubbed and bleached, and migration is appropriately managed.
- Ensure that the pretreatment is uniform.
- Ensure that the heat is distributed evenly.
- Dosing the soda correctly.

Our Opinion:

To proper maintain pH, pretreatment process and heat are control.

4.1.6 Dimensional stability (shrinkage):

High stress during the knitting, dyeing and finishing processes causes shrinkage.

Causes:

- Insufficient relaxation during pretreatment.
- Inadequate material setup.
- Dyeing machine-induced lengthwise distortion.

Remedies:

- Relaxation and environment should be tailored to the topic.
- Adapt the dyeing machine to the material.

Our Opinion:

To properly maintain Dyeing and materials are controlled.

4.2 Defects have been seen during finishing the knit dyeing fabric:

4.2.1 Skew:

Causes:

- When the Fabric's width has been exceeded;
- Improper fabric feeding when compacting.

Remedies:

- While feeding the cloth slowly through the compactor machine, use a drop needle line as a reference line to maintain the grain lines straight.
- It must be kept in good condition.

Our Opinion:

Use To properly maintain feeding, dropping needle line and environment condition are controlled.

4.2.2 Crease Mark:

As the dark uneven continuous line breaks, the cruise sign shows in knitted cloth.

Causes:

- If the pump pressure and reel speed are not equal, the fabric rope will not open properly.
- Shock cooling of synthetic material will occur.
- Due to m/c traveling at a fast pace.

Remedies:

- Maintaining the correct reel and pump speeds.
- Lower the pace of temperature rise and cooling.
- The m/c load is being reduced.
- A higher liquor-to-total-total-total-total-to.

Our Opinion: To properly maintain the correct reel, pump speed and load reduction are controlled.

4.2.3 Slitting fault:

Causes:

- The operator's neglect is the cause of sealing flaws.

Remedies:

- The operator must remain vigilant at all times.

Our Opinion: To properly maintain vigilant time control.

4.2.4 Uneven Brushing:

Causes:

- If there is a problem with the finishing machine's roller pin,
- If not properly softened.

Remedies:

- The finishing machine pins must be examined and saffron must be used.

Our Opinion: To proper maintain machine pins examined and saffron used are control.

4.2.5 Unwanted mark:

Causes:

- Contact with oil or grease-covered exposed machine parts, as well as improper handling, can generate an oily stain with dust adhering to the surface, making the stains more noticeable and difficult to remove.
- Clumsy machine operation.

Remedies:

It is necessary to operate the equipment properly.

Our Opinion: The used to properly maintain and operate equipment, the user is controlled.

4.2.6 Silicon Spot:

Causes:

- If the silicone isn't properly mixed,

Remedies:

- Mix the silicone thoroughly.
- Use good silicone.

Our Opinion: To properly used silicone and good silicone used are control.

4.2.7 Oil mark:

Causes:

- Exceptional markings and sloppy machine handling.

Remedies:

- To ensure that the machine functions properly

Our Opinion: To properly maintain machine functions control.

4.2.8 Line mark.

Causes:

- Variation in heating and cooling rates due to a faulty plaiting device
- Improper fabric movement due to a rapid steam rise without a gradient.

Remedies:

- To avoid line marks, anti-creasing chemicals should be employed.
- Heating and cooling should be done gradually and in a graded manner.
- Due to the tremendous pressure of the roller on the Fabric, the line is marked.
- The roller's pressure on the Fabric must be managed.
- Take good care of the material.

Our Opinion: To properly used chemicals and maintain, avoid line marks, heat, cooling, roller pressure, and materials are controlled.

4.2.9 Lycra out:

This Fabric is also widely seen in the waistbands of sweatpants, loungewear, and any other sorts of flexible underwear or bottoms. Lycra is utilized in most forms of socks, aside from waistbands; without it, socks would be substantially less stretchable, and they would be more difficult to put on and remove.

Causes of faults:

- Access chemical use
- Access processing time
- High temperature.

Remedies:

- Controlling the temperature and using the right chemicals
- Appropriate processing time is required.

Our Opinion: To properly use chemicals and process time are controlled.

4.2.10 Sewding Fault:

Causes:

- If the machine is not correctly set up;
- If the pin is not in the right place;
- If the machine is over speeding;

Remedies:

- You must correctly configure the machine.
- It's crucial to keep the spread under control.
- You must inspect the machine's pins to ensure that they are in the proper position.

Our Opinion: To proper maintain machine configure, pins position are control.

4.2.11 GSM variation:

Causes of fault:

- Variation in fabric process characteristics such as over feed and width wise stretching of dyed Fabric, as well as the stander, calendar, and compaction machine, from roll to roll.

Remedies:

- Ascertain that all of the cloth rolls in a batch are treated using the same parameters.

Our Opinion:

To properly maintain cloth rolls and treated parameters are controlled.

Survey Results & Analysis:

Here we can show the principal dyeing faults percentage (percent) for various sorts of knit Fabric in the current and developing processes, where we may minimize the Percentage of the current fault (percent) in a lot by using the following remedies.

Production Report Dyeing, Finishing & Fault In (7 Days)

Date	**D**yeing (KG)	**F**inishing (KG)	**Fa**ult (KG)
15-12-2021	**27047**	**64987**	**5981**
16-12-2021	**8031 (1 Shift)**	**18055 (1 Shift)**	**1233**
17-12-2021	**31099**	**60048**	**8440**
18-12-2021	**31239**	**66242**	**7941**
19-12-2021	**31234**	**67633**	**6263**
20-12-2021	**30097**	**64069**	**10497**
21-12-2021	**30197**	**63868**	**8631**

Daily Fabric Problematic List

15, December 2022

Date	Color	F/Type	R/GSM	F/GSM	Type of Problem	Decision
15-12-21	Fantasma	Fleece	280	275	Peach Line Mark	Return to Finish
15-12-21	Top Grey	Single Jersey	160	152/154	M/C stop Color Spot	Return to Dyeing
15-12-21	Phantom	Single Jersey	160		Shade roll dead cotton+ uneven not ok	Return to Finish
15-12-21	Phantom	Single Jersey	160	148	Maximum roll out dust line meter not ok	Return to Finish
15-12-21	Grey white	Single Jersey	160		M/C stop not ok	Return to Dyeing
15-12-21	Navy	Single Jersey	150	152	Major dead cotton	Ok GM sir.
15-12-21	Grey	Single Jersey	160	158/165	Meter to meter shade variation	SAP
15-12-21	R. Black	Terry	240	220/244	Less for gsm	mail
15-12-21	C-violet	Single Jersey	160	144/154	Roll gsm less	D/D/L
15-12-21	S-White	Single Jersey	180	171/180	M/C stop not ok	Return to Dyeing
15-12-21	Y/D	1*1rib	190	165	Crease mark	Return to Finish
15-12-21	11-0608	Slub Single Jersey	160	152/156	Wrong slitting & Dia	Deswa
15-12-21	white	Single Jersey	160		Hand feel hard	
15-12-21	S. White	Slub Single Jersey	180	170	Major Crease Mark	2 time
15-12-21	Bering Sea	Single Jersey	160	164/167	Roll band line not ok	Return to Dyeing
15-12-21	Faded denim	Single Jersey	180	76/77	M2M shade variation	Return to Dyeing
15-12-21	S. White	Rib	190	179/215	Roll GSM High	

Table No 1

Daily Fabric Problematic List

17, December 2022

Date	Color	F/Type	R/GSM	F/GSM	Type of Problem	Decision
17-12-21	White	Single Jersey	180	180/190	2 roll M/C stop	Return to Dyeing
17-12-21	Charcoal	Single Jersey	180		White line mark	Return to Dyeing
17-12-21	18-0905+11-0608	1*1rib	190	179/183	Bowing	Discus D/L
17-12-21	Purple	Single Jersey	150	148/156	Hand feel hard	Return to Finish
17-12-21	Wisper white	Single Jersey	180	148/156	Crease mark	
17-12-21	Off pk bd	Single Jersey	180	167	Crease mark	
17-12-21	Eggnog	fleece	260	240	Sharing problem	Return to Finish
17-12-21	Eggnog	fleece	260	228	Sharing problem	Return to Finish
17-12-21	Eggnog	Fleece	260	242	Sharing problem	Return to Finish
17-12-21	Eggnog	Fleece	260	245	Sharing problem	Return to Finish
17-12-21	Eggnog	Fleece	260	243	Sharing problem	Return to Finish
17-12-21	Real white	Single Jersey	160	153/159	Uncountable conta	mail
17-12-21	Blue Sapp	Single Jersey	140		Shade roll major dead cotton	
17-12-21	18-1435	Single Jersey	140	133/140	Meter to meter v/a	Group marker

Table No 2

Daily Fabric Problematic List

18, December 2022

Date	Color	F/Type	R/GSM	F/GSM	Type of Problem	Decision
18-12-21	Peche Net	Terry	260		Hand feel Hard	Return to Finish
18-12-21	Green	Single Jersey	180		Major Hairiness	Return to Dyeing
18-12-21	Grey Win	Terry	280		Patta Not Ok	Discus D/L
18-12-21	Rear Black	Fellece	440	424	Chemical Spot Not Ok	Return to Finish
18-12-21	Greige	Single Jersey	180	172	Hand feel Hard	Return to Finish
18-12-21	Khaki	Single Jersey	180	170	Dead Cotton + Color Crease	
18-12-21	Lite Grey	Slub Single Jersey	160	147	Major out Dust	Return to Finish
18-12-21	Old Rose	Single Jersey	160		Uneven And M2M Shade Variation	Return to Dyeing
18-12-21	Sky Captail	Single Jersey	160		Dead Cotton + Uneven	Return to Dyeing
18-12-21	Rear Black	Fleece	440	360/390	Dia less + GSM Less	Return to Finish
18-12-21	Orchid	2*2 Rib	300		Fungus & Hole	Return to Finish
18-12-21	Lite Gery	Slub Single Jersey	160	154	Machine Stop Not Ok	Return to Dyeing

Table No 3

Daily Fabric Problematic List

19, December 2022

Date	Color	F/Type	R/GSM	F/GSM	Type of Problem	Decision
19-12-21	Combo pink	Single Jersey	140	133/142	M2M shade variation band line not ok	Return to dyeing
19-12-21	Gris allie	Single Jersey	160	147	Out dust not ok	Return to finishing
19-12-21	Rear black	fleece	440	362/440	R/N “15” off shade	RTD
19-12-21	Ecru +nevy+yellow	Single Jersey	160	160/164	Chemical Spot & die + & crease mark	Held hand wash
19-12-21	Black	S. Single Jersey	160	160/159	Colour crease & B2B shade not ok & GSM high	
19-12-21	R. black	Fleece	440	349/432	Dia less & GSM less	Return to Finish
19-12-21	S. white	S. Single Jersey	180		F/B: Crease mark not ok	2nd time competing
19-12-21	L. grey	S. Single Jersey	160	154/165	R/N:10 off shade	Return to Dyeing
19-12-21	Coconut milk	Single Jersey	180		Major crease mark & hand feel hard	Re-stenter
19-12-21	Rear Black	Single Jersey	140	130	Dia less + GSM Less	Return to Finish
19-12-21	Mid grey	Terry	260	239/257	Die less& 7” plus GSM +	Return to dyeing
19-12-21	Grey	Single Jersey	180	173/188	R/N:13 padder crease not ok	Return to Finish
19-12-21	S. white	S. Single Jersey	180	165/170	F/B ”Crease mark”	2nd time compacting

Table No 4

Daily Fabric Problematic List

20, December 2022

Date	Color	F/Type	R/GSM	F/GSM	Type of Problem	Decision
20-12-21	Navy	Single Jersey	160	152	Water spot	Return to Finish
20-12-21	Blue haze	Slub single jersey	180	155/287	R/N:17,26m/c stop not ok	Return to Dyeing
20-12-21	Lt Grey	Terry	260	257	1 roll st: m/c stop not ok	Return to dyeing
20-12-21	R. black	Slub Single Jersey	160	135/141	Major colour crease	Return to Finish
20-12-21	Peacout	Single Jersey	150	170	White line mark & hand feel hard	Return to Dyeing
20-12-21	Grey	Single Jersey	160	157	5 roll m/c stop	Return to Dyeing
20-12-21	Chimors	Fleece	300	285/308	Crease mark & chemical not ok	
20-12-21	White	Single Jersey	160	141/155	Dia less v/a & GSM less	
20-12-21	R.black	Terry	240	229/244	Back side patta	
20-12-21	R.white	1*1 Rib	190	185/200	Niddle line mark	Return to Dyeing
20-12-21	Coconut milk	Single Jersey	160		Hand feel hard	Return to Finish
20-12-21	Gris aille	Single Jersey	160	147/152	Sinker mark	
20-12-21	Hot dog	Single Jersey	140	133/137	Light patta	
20-12-21	Bering sea	Single Jersey	160		Major band line, 4 roll stenter	Return to Dyeing
20-12-21	Green	Ly Single Jersey	165		Major band line, 4 roll stenter	Return to Dyeing
20-12-21	Blue sapp	F/Terry	260		Major uneven	
20-12-21	Sky captain	Single Jersey	160		F/B: uneven	D/D/L
20-12-21	Grea	Single Jersey	160	154.3	9 roll m/c stop	

Table No 5

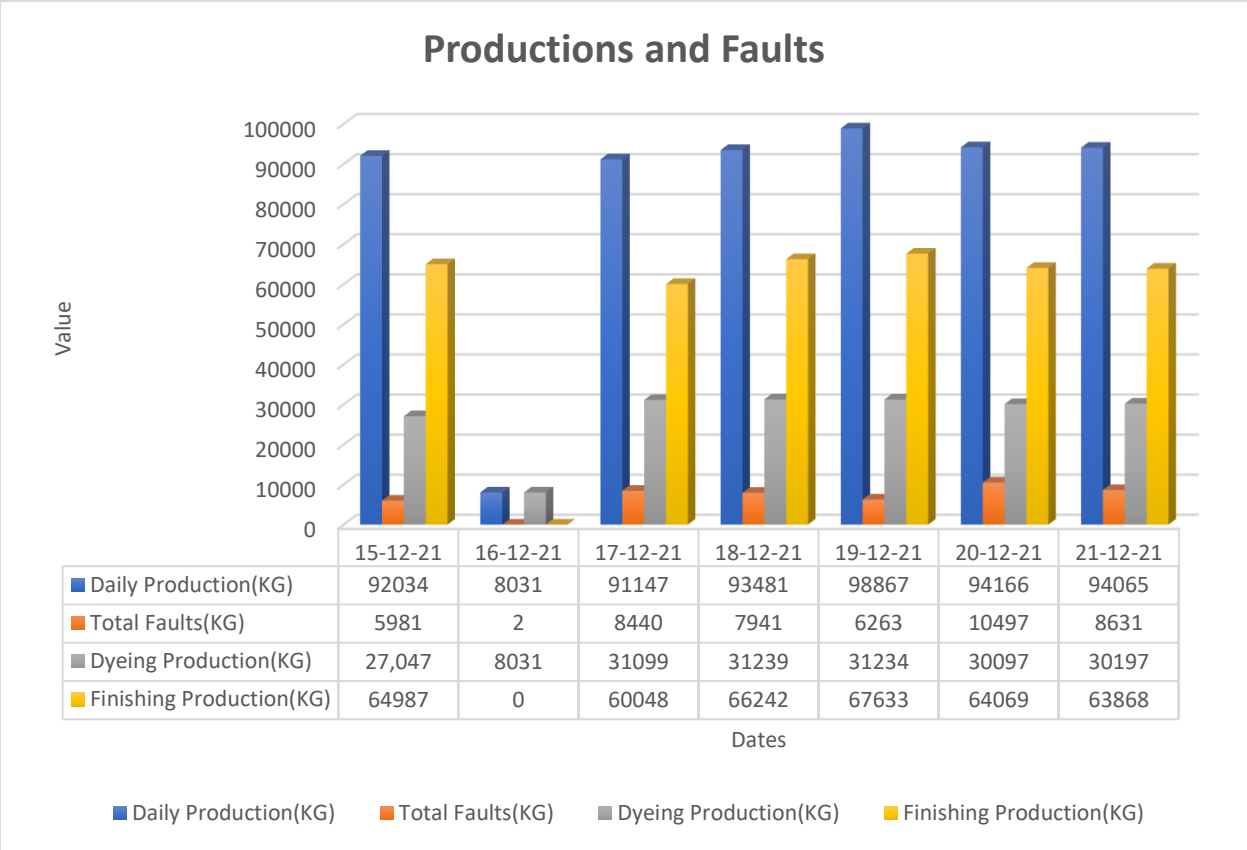
Daily Fabric Problematic List

21, December 2022

Date	Color	F/Type	R/GSM	F/GSM	Type of Problem	Decision
21-12-21	S. white	waffle	230		M2M shade v/a	Return to Dyeing
21-12-21	P/green	Single Jersey	160	150/163	Dia(1-4): less	
21-12-21	Vetiver	Single Jersey	220	209/212	White line mark & Dia 2inch plus	D/L
21-12-21	Grey	Single Jersey	180	188/190	Gum spot not ok	D/L
21-12-21	S. white	Single Jersey	160	152/165	1 roll m/c stop not ok	Return to Dyeing
21-12-21	Green	Single Jersey	180		Major slub(Y/L=204,Y/S=glory)	Reject
21-12-21	15-4307 tex	1*1 Rib	210	205/207	Enzyme dust(St:stop)	Return to dyeing
21-12-21	Combo pink	Slub Single Jersey	140	133/141	M2Mshade v/adirty spot not ok	
21-12-21	S. white	Waffle	230	218/226	F/B major dirty spot	D/D/L
21-12-21	White	Single Jersey	150	142/145	R/N: 3,4 dirty + yellow spot m/c stop	Return to Dyeing
21-12-21	Do fami	Single Jersey	160	152/153	Major dirty spot	Return to dyeing
21-12-21	Ecru printed	Slub Single Jersey	160		St:m/c stop	
21-12-21	White	Single Jersey	150	148	St: m/c stop	Return to dyeing
21-12-21	Y/D	Single Jersey	160	157	9 roll chemical spot	Return to Dyeing

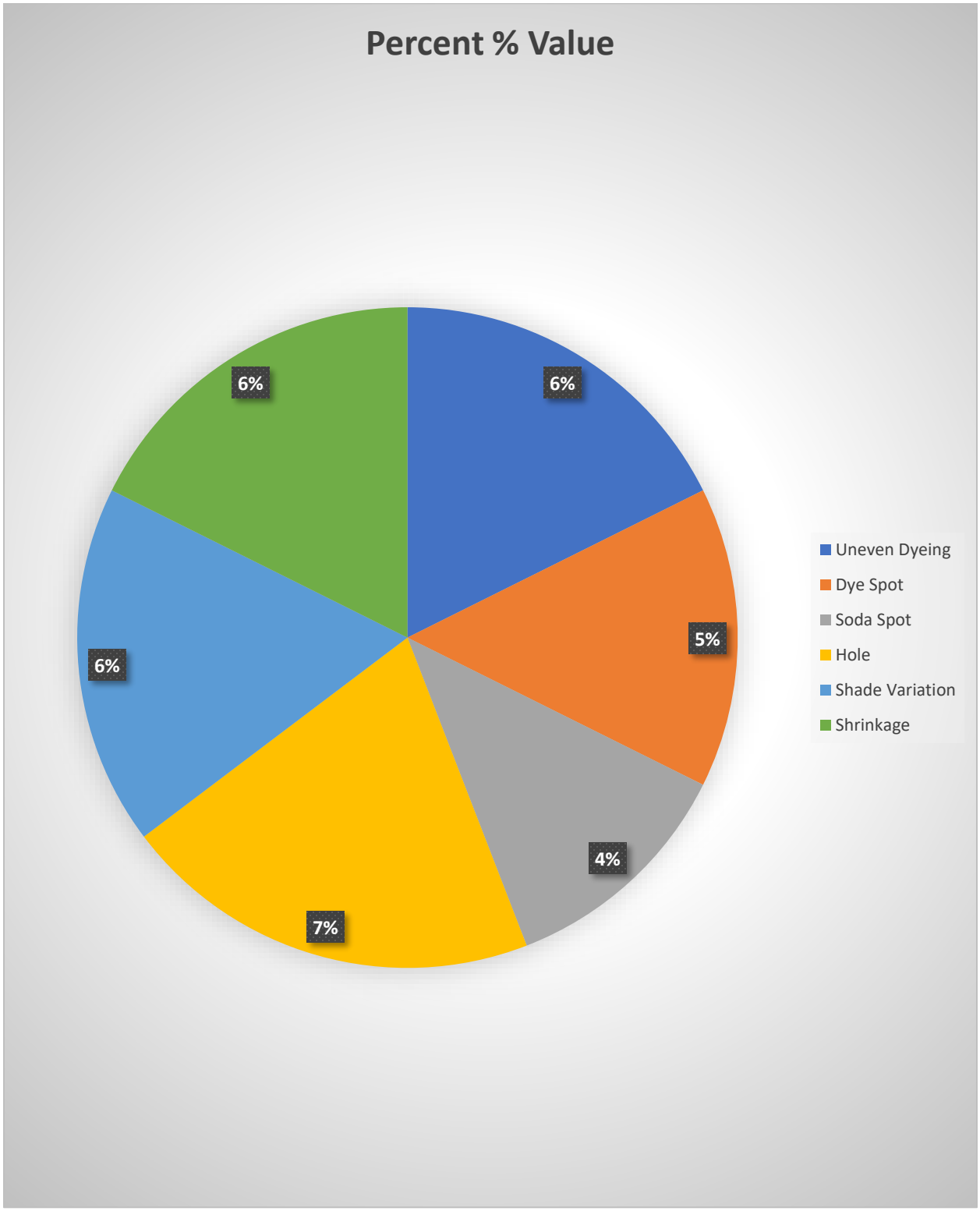
Table No 6

Production & Faults in Graph

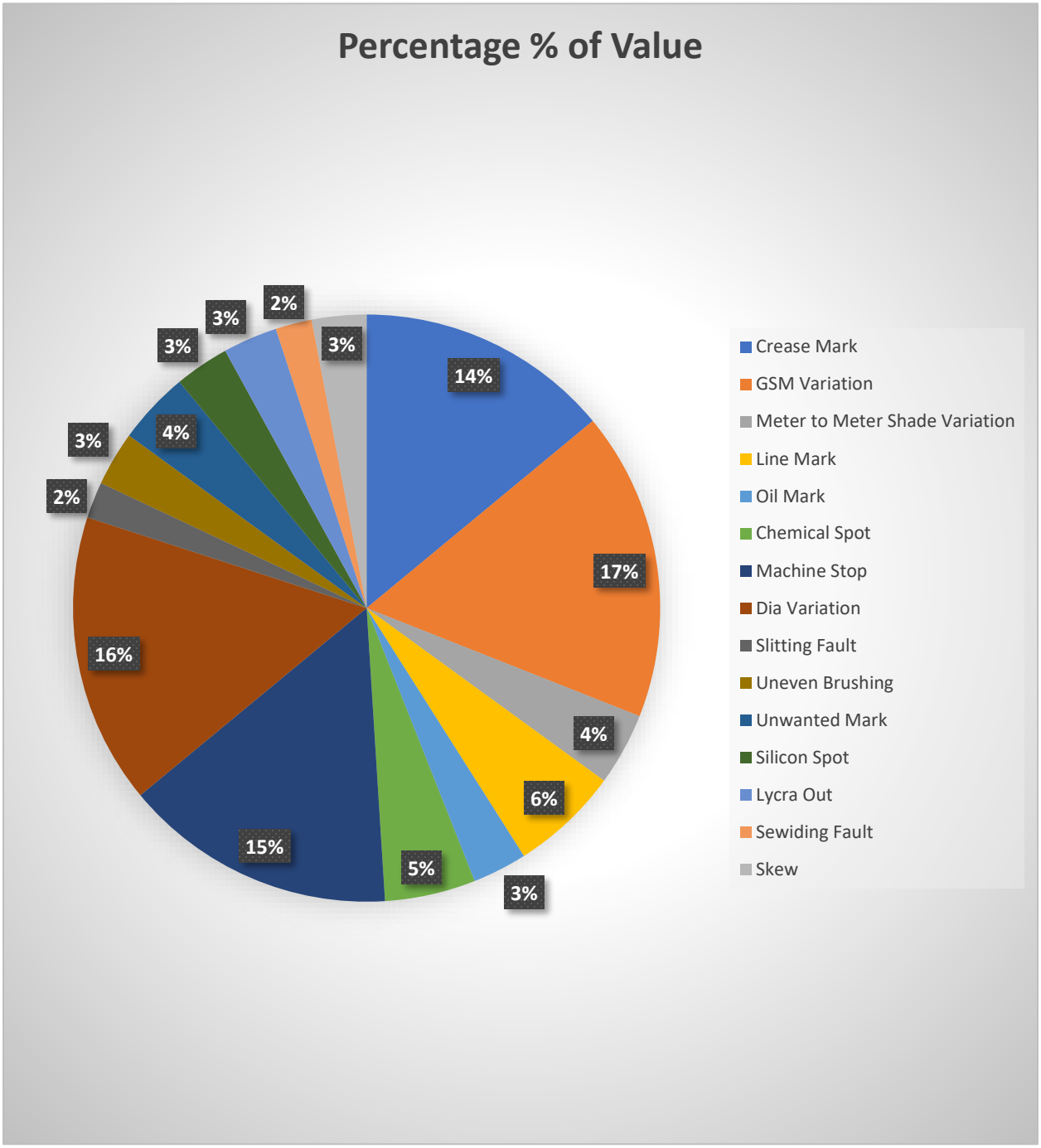


	15-12-21	16-12-21	17-12-21	18-12-21	19-12-21	20-12-21	21-12-21
Daily Production(KG)	92034	8031	91147	93481	98867	94166	94065
Total Faults(KG)	5981	2	8440	7941	6263	10497	8631
Dyeing Production(KG)	27,047	8031	31099	31239	31234	30097	30197
Finishing Production(KG)	64987	0	60048	66242	67633	64069	63868

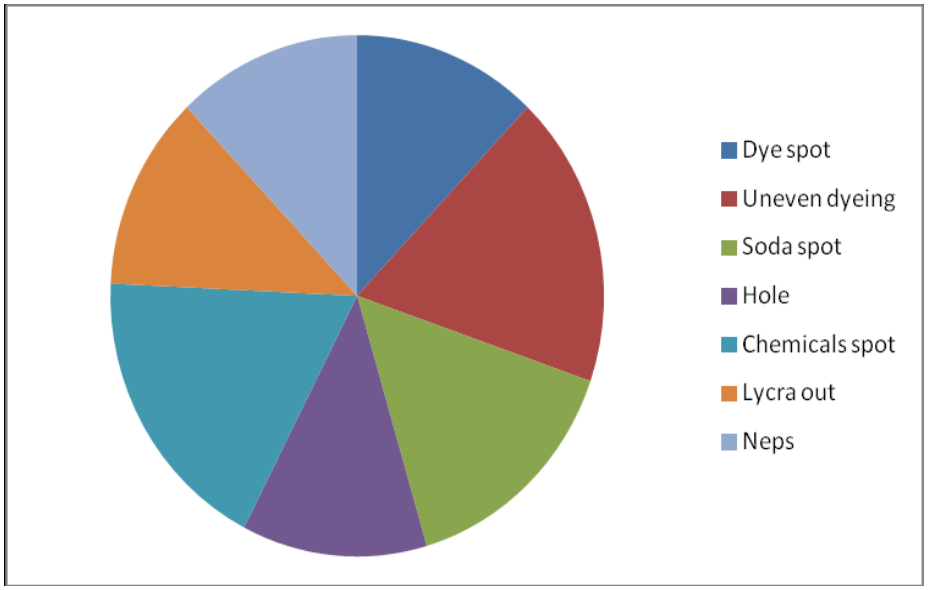
Percentages of Dyeing Fault Tropical Knitex Ltd.



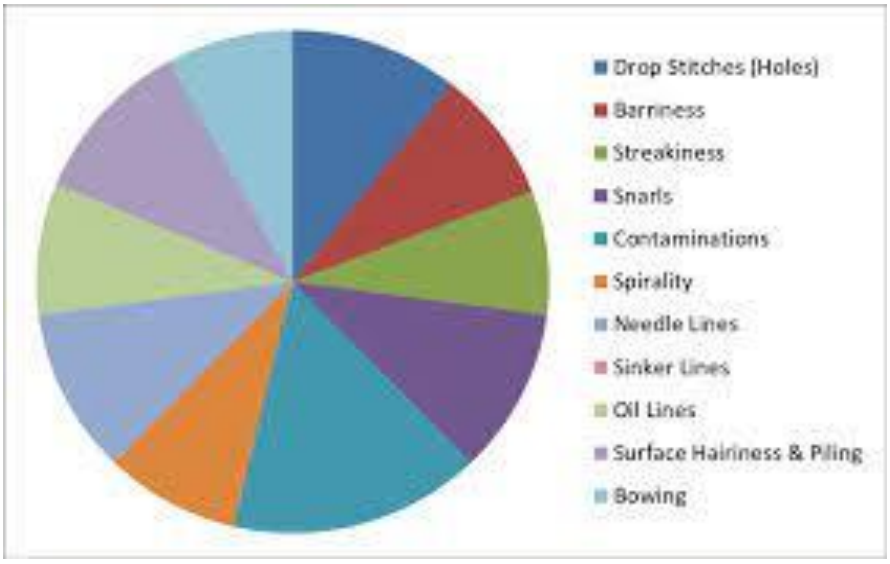
Percentages of Finishing Fault Tropical Knitex Ltd.



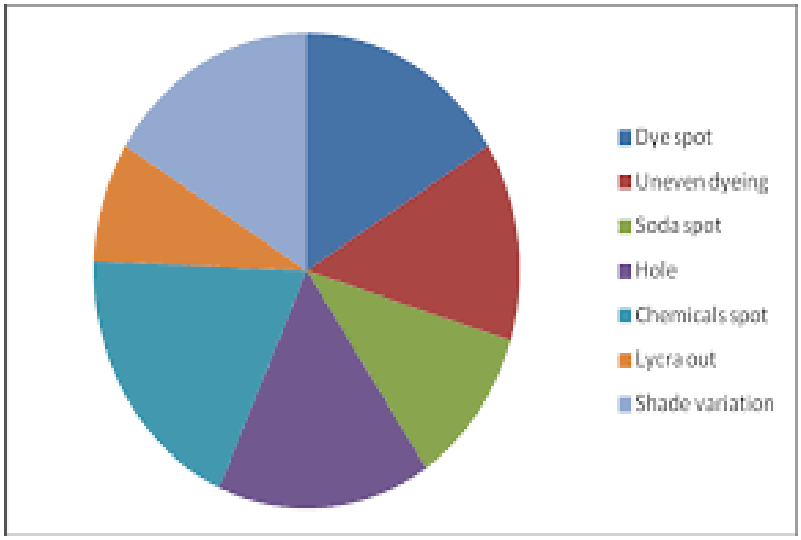
Percentage of dyeing faults in fleece fabric:



Dyeing faults in Single Jersey fabric circular Percentage:



Dyeing faults in Interlock fabric:



At Tropical Knitex Ltd., we conducted a seven-day trial and discovered that the Percentage indicated below is in correct. Which production report, daily production percentage, dyeing fault, and finishing fault datasheet have these been added to? I've

worked on the most prevalent flaws and provided recommendations for how to fix them.

We tried to match all of the documents to the actual items in the industrial plant as closely as possible.

CHAPTER – 5

CONCLUSION

Conclusion:

In my Report, I identify the most common and some unique knit dyeing flaws. According to this Report, we can see how and when defects occur in the process, as well as how to control or eliminate them. It is a practical basis of knowledge on which only an experienced person can solve field faults. Some knitting flaws persist until the Fabric is finished, but I've just identified the knit dyeing flaws here. This study can provide a thorough understanding of knit dyeing flaws, their causes, and their solutions. Finally, I believe the Report will greatly contribute to the development and enrichment of our understanding of knit dyeing flaws.

At Tropical Knitex Ltd., we conducted a seven-day trial and discovered that the Percentage indicated below is correct. Which production report, daily production percentage, dyeing fault, and finishing fault datasheet have these been added to? I've worked on the most prevalent flaws and provided recommendations for how to fix them.

We tried to match all of the documents to the actual items in the industrial plant as closely as possible.

REFERENCES

- All the data is to be collected from the factory.
- All technical information is to be collected from the technical person.
- Academicals lecture sheet.
- A. D. Broadbent, Basic Principle of Textile Coloration. 2001,
- England: Society of Dyers and Colourists.
- M. F. Hossain, Practice of Textile Coloration. Vol. 1. 2007, Dhaka: Book Fair Publications.
- J. E. Both, Principle of Textile Teasting 1968, England: Butterworths.
- P. S. Chinta and S. Dhar, Problems in Dyeing and Their Remedies, Research Gate, 2007.
- E. FEILMANN, Some Unsolved Dyeing Problems, Journal of the Society of Dyers and Colourists, 2008.
- W. S. Perkins, Textile Coloration and Finishing. 1996, U.S.A: Carolina Academic Press.
- Md. Tanjin Amin, Overview of a Knit-Dyeing Factory with Necessary Production Formulas, Global Journal of Researches in Engineering, Volume XIV Issue 1 Version 1 Year 2014, P1-7.
- Moin, C.J., and Mahabubuzzaman, A.K.M. 2009. Process for level dyeing of 100% cotton knit fabrics with reactive dye. J. innov.dev.strategy 3(4): 01-08

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http://textilelearner.blogspot.com/2011/07/dyeing-process-process-of-dyeing_3729.html

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Department of Textile Engineering THESIS REPORT ON Studies on The Knit Fabric Dyeing Defects. Course Title: Project (Thesis) Course Code: TE-4214 Submitted By Md. Fokhrul Hasan ID. 191-23-659 Mnowar Hossain ID. 191-23-688 Supervised By Mr. Tanvir Ahmed Chowdhury Assistant Professor, Department of Textile Engineering Daffodil International University A thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Textile Engineering Advance in Wet Processing Technology, Fall-2021 ©Daffodil International University LETTER OF APPROVAL This project report was prepared by MD. Fokhrul Hasan bearing ID:191-23 -659 and Mnowar Hossain, bearing ID:191-23-688, is approved in Partial Fulfillment of the Requirement for the Degree of Bachelor of Science In Textile Engineering, The Said student has completed their project work under my supervision. During the research period, I found them sincere, Hardworking, and Enthusiastic. ..... Tanvir Ahamed Chowdhury Assistant Professor Department of Textile Engineering Daffodil International University. DEDICATION First and first, I would want to express my gratitude to Almighty Allah for allowing me to complete this Theses Report. Then I'd want to convey my heartfelt gratitude to my teacher, Mr. Tanvir Ahmed Chowdhury, for providing me with this great Theses report on this issue. Sir, your valuable guidance has been the wants that help me research this Report and make it full proof success your suggestion and your instruction yes sir as the major contributor towards the completion of the assignment I am making this project not only for marks but also to increase my knowledge thanks again to you. ACKNOWLEDGEMENT First and first, we would want to express our gratitude to Almighty Allah for patiently allowing us to complete our internship program and, finally this Thesis Report Preparing this Report based on "Wet Processing Technology (Knitted Fabric)", We have realized that it is extremely difficult to learn the basic and essential aspects of Wet Processing since they are so far apart from theoretical bookish knowledge. Daffodil International University and Tropical Knitex Ltd. providing us with huge support and direction for our internship program to be accomplished successfully. It is the first time we have had the opportunity to gain real-world experience working on an evaluation report. We would like to appreciations specially to our honorable teacher Mr. Md. Mominur Rahman, Assistant Professor & Head (In Charge), Department of Textile Engineering, whose track & instruction has taken us to our destination. I also like to express our genuine sense of gratefulness to our supervisor Mr. Tanvir Ahmed Chowdhury, Assistant Professor, Department of Textile Engineering for his nonstop advice, help and guide to make this Report. We would like to