



Daffodil
International
University

**Faculty of Engineering
Department of Textile Engineering**

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**“Study on Quality Reports of Gray Fabric,
Finish Fabric, Sewing & Finishing Quality
Reports”**

Submitted by:-

Name: Rakib Howlader	ID: 182-23-511
Name: Tariqur Rahman	ID: 182-23-504
Name: Md. Al-Muntasir Billah	ID: 123-23-3231

Supervised by:-

Md. Abdullah Al Mamun
Assistant Professor
Department of Textile Engineering
Daffodil International University

**This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Textile Engineering**

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Approval Letter

This project report was prepared by **Rakib Howlader (ID: 182-23-511)**, **Tariqur Rahman (ID: 182-23-504)**, **Md. Al-Muntasir Billah (ID: 123-23-3231)** is approved in Partial Fulfillment of the Requirement for the Degree of Bachelor of Science in Textile Engineering. They said student has completed their project work under my supervision. During the research period, I found them sincere, hardworking, and enthusiastic.



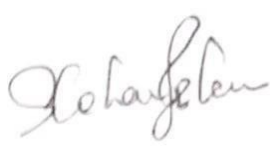
Supervisor:



Md. Abdullah Al Mamun
Assistant Professor
Department of Textile Engineering
Daffodil International University

DECLARATION

We hereby declare that this internship has been done by us under the supervision of, **Md. Abdullah Al Mamun Assistant Professor**, Department of Textile Engineering, Faculty of Engineering, and Daffodil International University. We also declare that the work which is being presented in this thesis entitled, “**Study on Quality Issue in Knit Garments Industry concerning Fabric Defect** ” is original work of us, has not been presented for a degree of any other university and all the resource of materials uses for this thesis have been duly acknowledged.

Name	ID	Signature
Rakib Howlader	182-23-511	
Tariquer Rahman	182-23-504	
Md. Al-Muntasir Billah	123-23-3231	

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We are grateful to all our classmates for their encouragement to work on the project. In particular, we express our gratitude and love to our parents who inspire us to do the work successfully.

- The Authors

Abstract

This study on textile finishing low-cost fabric reduces the percentage of defects in the manufacturing process through process control parameters and it is well known that some possible steps to get the desired fabric quality to follow process control parameter analysis and reliable measurement to reduce fabric defects. To optimize the defects of the finished fabric woven to do. The quality of fabric in this modern textile arena is a great concern. The quality in the textile fabrics produced is the highest aspect demand which is mainly due to two factors one is the fabric properties and the other fabric defects. We did our experimental part with some process control data for six woven fabrics and the biggest problem with the finishing process is our shrinkage. Next, we analyzed the root cause of the fabric error by visualizing the problem. About 80% of errors can be solved by controlling the daily parameters of the manufacturing field. This paper deals finely with textile trends to optimize defects with process parameters to protect fabric quality and customer satisfaction.

Quality control plays an important role in the production of quality weaves. Nowadays the buyer needs certain quality in all the big parts of the finished products. Defect detection is very important during the production of knitted fabric for improved quality and productivity.

- In grey fabric inspection section 1790 yard fabric is inspected and 114 fault is found.
- In cutting section defect percentage 2.76% is found from inspected 7785 pcs for three days.
- In sewing section total defects are found 181pcs, total QC passed are 4016 pcs and defect percentage is found 4.31% for three days.
- In finishing section 7762 pcs fabric is inspected and 2109 fault is found.

By analyzing the inspections of different sections we concluded that the maximum error of 2109 errors was found in the completion section. And the minimum defects were found in 114 defective gray fabric inspection quantities

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CHAPTER 1: INTRODUCTION

1.1 Quality Introduction

Every industry or business needs to maintain a level of quality to increase sales and gain a better name among customers and affiliates. A high level of quality must be maintained to ensure better business worldwide, especially for businesses involved in exports. The companies that are involved in the export business maintain the dignity of the country and because of this quality control standards are generally strictly set for exports. Export houses have to maintain good quality control over their products as they earn foreign exchange for the country. In the garment industry, quality control is practiced in the early stages of raw material sociability to the stage of final finished garments. A thesis paper is known as a research paper that provides sufficient information about specific topics. In our thesis paper "Knitted garments have quality problems related to fabric defects." We have seen the dawn of civilization. The quality is

One of the important factors in the textile sector. So quality control is needed to create quality full products in this competitive world market. It is important to maintain quality in the textile sector as well as in garment production. So we chose this topic. Therefore, a study was conducted in the garment industry called Centex Textile and Apparels Limited, Kachukhet Puran Bazar, Dhaka Cantt, Bangladesh, to identify buildings to eliminate errors in maintaining the map. Improving product quality.

1.2 Objectives of the Study

Objectives of this study are given below:

- To improve the quality of garments product
- To know about the reasons of defects
- To implement technical solution
- To know which fault can be highly occur in garments
- To identify the faults that are occurred in different section of a garments industry
- To increase efficiency and productivity

1.3 Significance of the Study

Every study has some significance. Some significance of this study is given below:

- ❖ During our internship, we have gathered practical knowledge about quality control.
- ❖ Beside this we have learned about different types of faults
- ❖ From this report, we can decide which step should be taken or should not be taken based on faults.
- ❖ It helps us to learn various fault occur daily in sampling, cutting, sewing, finishing.

1.4 Limitations

During our thesis period we have faced some problem. Those are given below:

- We can't collect all data due to some restrictions
- Without the permission of higher authorities, we can't bring some necessary papers.
- Some sections still following the old QC system.
- Time was also a limitation
- Gathering information during working was a tough job

CHAPTER -2: LITERATURE REVIEW

2.1 Quality

Quality is characterized as the degree of acknowledgment of a decent or administration. It absolutely advances any supported, any item. The standard level of every item should be kept up. In this twenty-first century of globalization, markets are turning out to be more unpredictable, so every industry faces a more significant level.

Vie for their business. So the item should meet the prerequisites of the client. Thus, the quality level of every item should be kept up. For the material business and the garment business, item quality is determined as the quality of fiber, yarn, fabric construction, colorfastness, design, and final finished garment. These days purchasers know about numerous characteristics. On the off chance that it is feasible to keep an exclusive requirement of an assessment strategy, purchasers will be propelled and greater quality items can be made. Everybody understands "quality" yet it is hard to decide. Quality alludes to the general highlights and attributes of an item relying upon the usefulness and strength of that item to the client. Qualities vary from one individual to another according to their decision. Quality is the mark settled upon by the two players to acknowledge any item. Client fulfillment is a definitive object of attire quality

As indicated by the Global Association for Standardization (ISO) - "Quality is the satisfaction of explicit prerequisites for an item or administration".

2.2 Importance of Quality

Overseeing quality is pivotal for business. Quality items help keep up consumer loyalty and dedication and lessen the danger and cost of supplanting inadequate items. Organizations can acquire a standing for quality by acquiring acknowledgment with perceived standards, for example, ISO 9001 distributed by global associations. Contingent upon the kind of item, the item should fulfill the client as far as excellence, appeal, taste, shape, design, and life span.

2.3 Quality Control

Quality control is an operational strategy and activity that is used to meet quality requirements. Quality control can be defined as examining, verifying, and controlling the degree of excellence of a feature or property of something. The quality is not like the blossoming of a flower that it blooms spontaneously and the colors of all the petals come from the inside and eventually spread the fragrance in the air to attract everyone. Garments will not come automatically until there is a quality system. To achieve quality in garments, everyone should be quality conscious and at the same time, people of different levels should know the tools and techniques for controlling and achieving garments. Some should be controlled by quality format, some by figure, some by aesthetic vision, some by instruction, some by common sense, and some by constraint.

Satisfactory quality can only be ensured through:

- Realizing the client's need.
- Designing to meet them.
- Flawless construction.
- Ensured execution and security.
- Clear guidance manual.
- Appropriate bundling.

Satisfaction quality can be ensured from the customer's point of view by providing:

1. Right item.
2. Right quality.
3. Correct time.
4. Intact condition.

To ensure the quality level of a garment we need to observe some specific sector

1. Issue-free fabric.
2. Shade coordinating of the garments.
3. Making the example according to purchaser necessity.
4. Every one of the various pieces of the garment ought to have ideal size.
5. Great sewing, crease development ought to be awesome.
6. Extra embellishments like catch, zipper, tag, the level are in the correct position.
7. Pressing and bundling.

2.3.1 Objective of Quality Control

1. To identify different types of faults during Inspection
2. To reduce per unit cost of a product
3. To utilize the raw materials, men, machines
4. To gain customer satisfaction by reducing faults

2.3.2 Types of Quality Control

There are two types of QC:

1. Process control
2. Product control

1. Process Control:

The technique picked for the cycle should be furnished with the vital exact boundaries. In each phase of pH ought to be looked after truly.

2. Product Control:

The control which is utilized to diminish blemished things inside various loads of delivered merchandise is known as item control. Again measure control can be separated into the accompanying advances:

1. Online quality control
2. Offline quality control

Online quality control:

This sort of quality control measure happens at the stage for example ceaselessly

The creation cycle, the creation running time, consequently checks the variety and finds a way quick way to address the importance.

Checking and adjusting mistakes at the handling stage is known as online quality control.

Model: Inline inspection.

Offline Quality Inspection:

This type of quality control consists of laboratory tests that shut down the manufacturing process

Example: Pre-final inspection by factory people.

2.4 Acceptable Quality Level (AQL)

AQL is one of the most used terms when it comes to quality in the garment export industry. Since most of the acceptance decisions for the supply of garments for the export market are made based on SQL. AQL means acceptable quality level. In any business process, the manufacturer checks the products before accepting the finished product from the buyer. This is so important in the export garment sector. Foreign buyers are so concerned about the quality of the product. They give AQL on the product to the manufacturer. Buyers inspect products as a random process. If the AQL pass means that the products are at an acceptable quality level, he gives a certificate for transporting the goods. The AQL level varies from process to process, from product to product, and from buyer to buyer. The following table provides a sample plan for inspection of the final consignment. Recognition Quality Level (AQL) refers to the maximum number of defective items that can be randomly considered acceptable during sample testing and inspection. Errors found during the inspection are classified into 3 categories:

1. Critical: Must be 100% accurate. There is no range.
2. Major: Normally 2.5%
3. Minor: Normally 4%

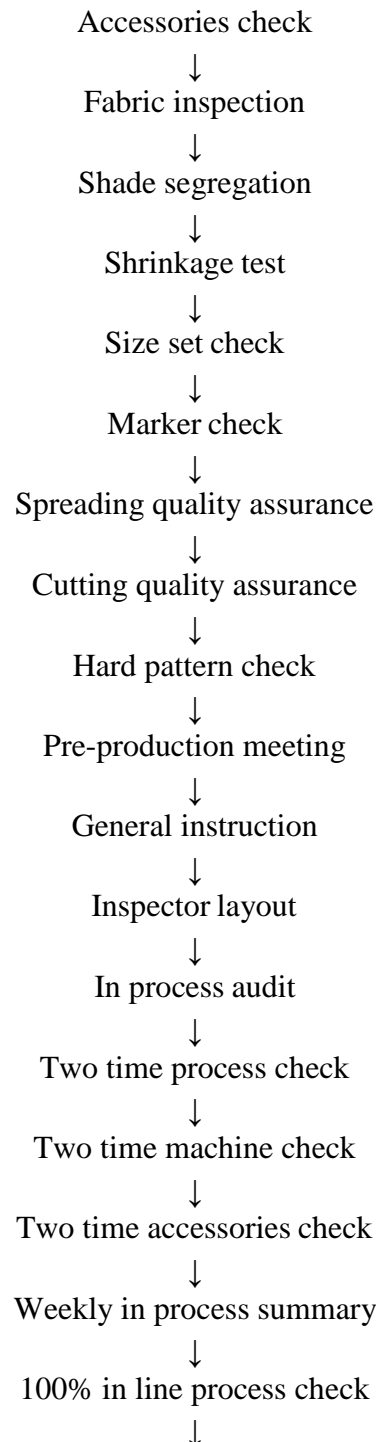
Table 2.4.1: AQL

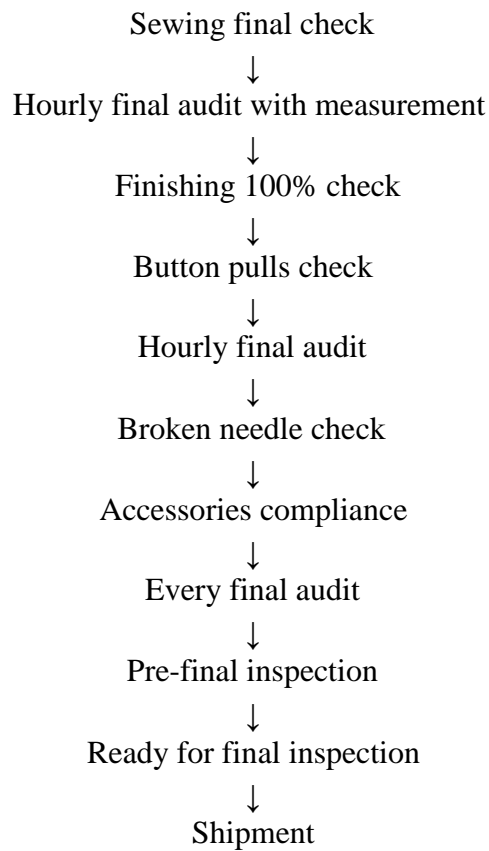
Footwear Industry Standard Final Inspection Sampling Plan (Normal)*								
Lot Size or Quantity Audited	Acceptable Quality Level (AQL) Level							
	1.5		2.5		4		6.5	
	Inspect	Accept	Inspect	Accept	Inspect	Accept	Inspect	Accept
Less than 150	20	1	20	1	20	2	20	3
151 – 280	32	1	32	2	32	3	32	5
281 – 500	50	2	50	3	50	5	50	7
501 – 1,200	80	3	80	5	80	7	80	10
1,201 – 3,200	125	5	125	7	125	10	125	14
3,201 – 10,000	200	7	200	10	200	14	200	21
10,001 – 35,000	315	10	315	14	315	21	315	21
35,001 – 150,000	500	14	500	21	500	21	500	21
150,001 – 500,000	800	21	800	21	800	21	800	21
500,001 & Over	1250	21	1250	21	1250	21	1250	21

2.5 Quality Assurance

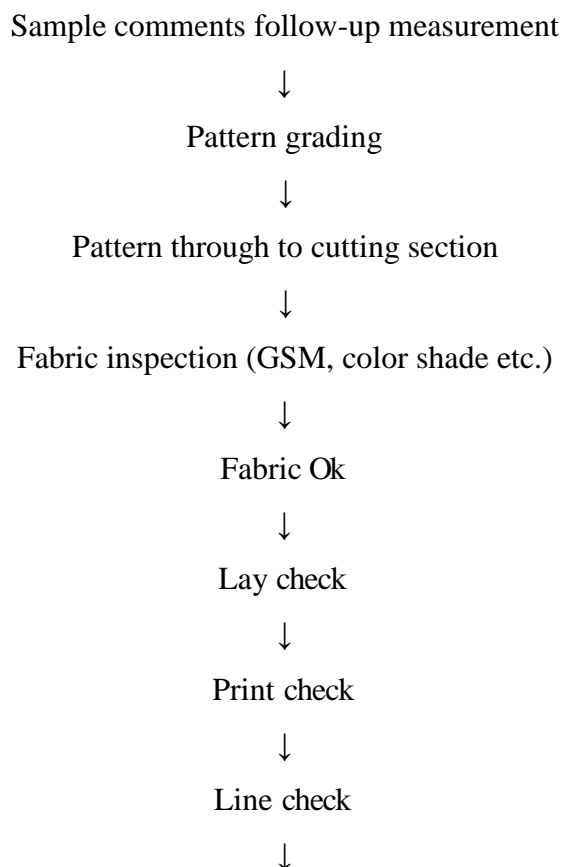
Quality Assurance (QA) is a way to prevent mistakes or errors in manufactured products and to avoid problems when providing solutions or services to customers; which defines ISO 9000 as part of quality management with a focus on providing this confidence “will meet quality requirements”.

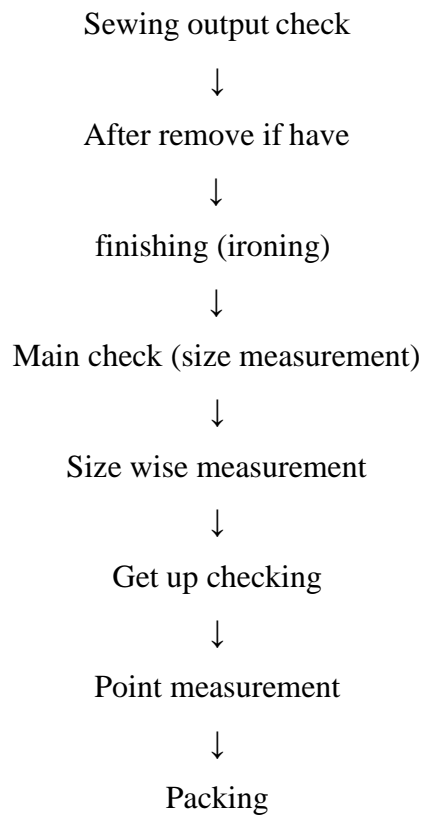
2.5.1 Process Flow Chart of Quality Assurance Department





2.6 Working Sequence of Quality Section

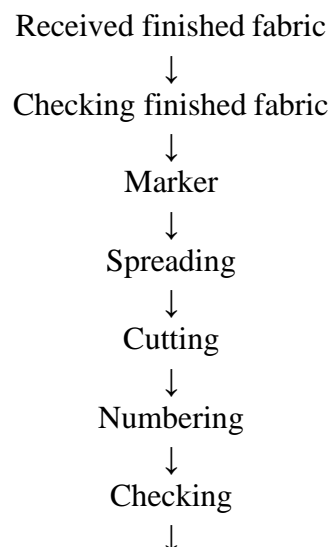


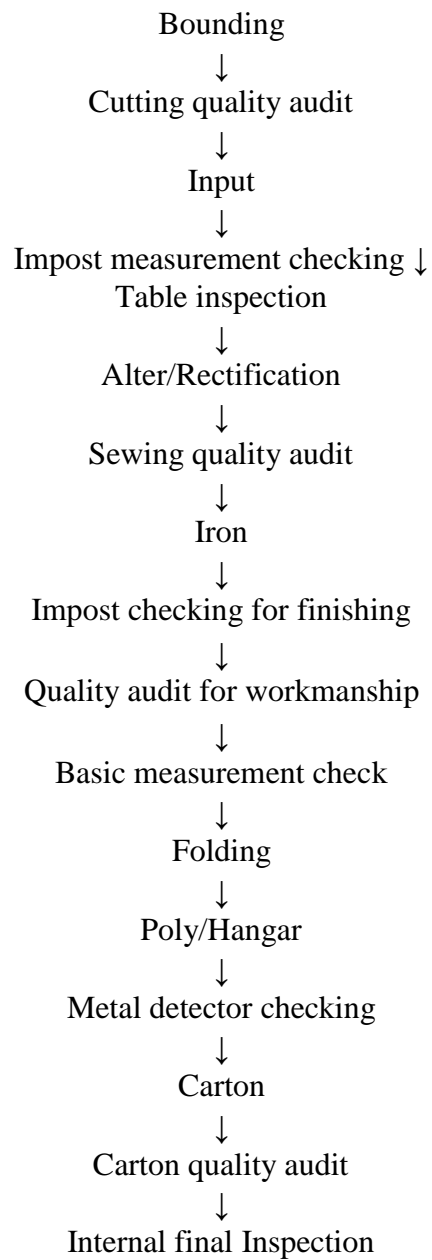


2.7 Quality Control in Garments Production

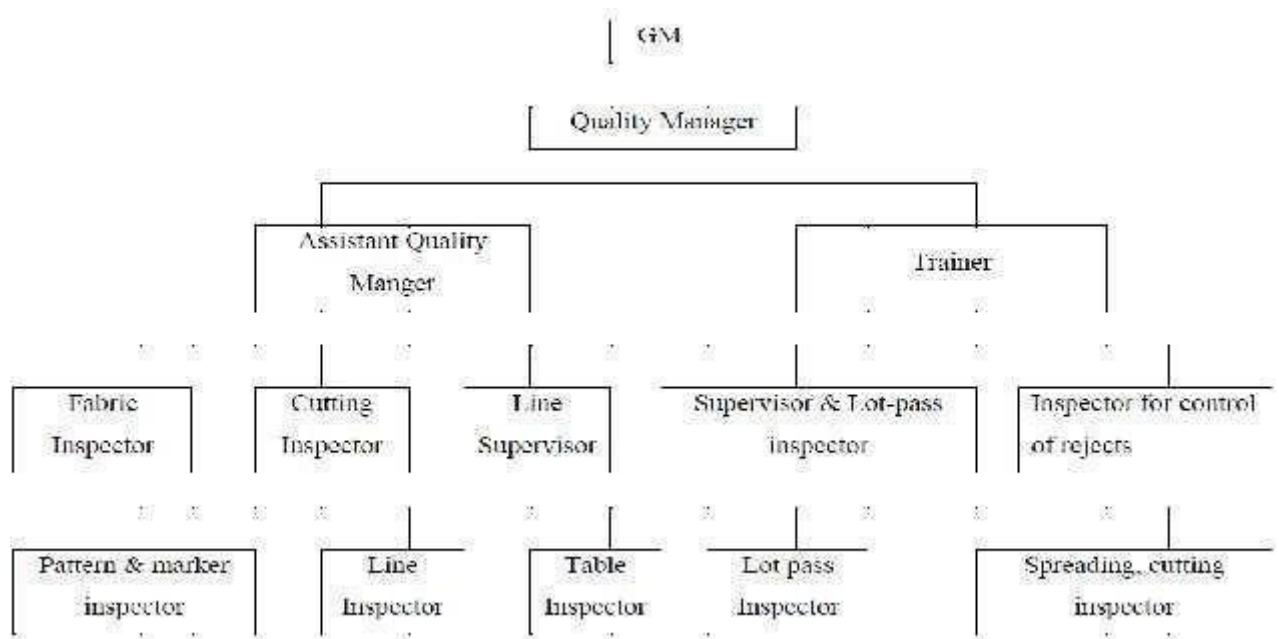
1. Garment production has various stages where process inspection and quality control are done. Basically, three categories are mentioned below:
2. Quality control in cutting section
3. Quality control in sewing section
4. Quality control in finishing section

2.7.1 Flow Chart of Garments Quality Control





2.8 Quality Management Department



2.9 Some Faults and Their Remedies in Cutting Section

Some common errors occur regularly in the cutting section. If we reduce these errors, we can get a quality product. Some of the cut faults and their remedies are given below:

❖ Wrong Cutting:

When different sizes are mixed and cut together then this type of fault is occurred.



Figure 2.9 (I): Wrong Cutting

✓ Remedies:

If these types of faults are occurred then it will be rejected.

❖ Miss Cut:

Miss cut occurs if proper line is not maintained during cutting. Tolerance is 1/16".



Figure 2.9 (II): Miss Cut

✓ Remedies:

If these types of faults are occurred then it will be rejected.

❖ Numbering Mistake:

If size number of cut pieces is not attached then it will call numbering mistake.



Figure 2.9 (III): Numbering Mistake

2.10 Quality Control in Cutting Section

Cutting is done manually or on the auto-cutting machine. A skilled worker can reduce cutting errors. Before starting fabric cutting, the cutting machine knife must be inspected and the cutting machine knife must be sharpened. The fabric should be spread evenly on the table when cutting by an auto-cutting machine. The cutter must be as perfect as possible to follow the pattern line as closely as possible to ensure that the quality has been cut. The following factors should be considered to obtain fault free cutting fabric:

- By reducing the height of the lay
- By reducing the cutting speed
- By using anti-fusion paper in the lay at regular interval
- By using lubricate on the knife during cutting

Cutting Quality Checking List

- ❖ Pattern quality checking
- ❖ Marker quality checking
- ❖ Fabric diameter Measurement Checking
- ❖ Cutting Laid Checking
- ❖ Fabric Roll to Roll Shade Checking
- ❖ Fabric G.S.M Checking
- ❖ Bundle Mistake Checking
- ❖ Size Mistake Checking
- ❖ Fabric Color Mistake Checking
- ❖ Yarn contaminated Checking
- ❖ Any Fabric Problem Checking

2.11 Sewing Faults, Their Causes and Remedies

Seam Pucker:

Seam pucker is occurred after sewing. It may be defined as a ridge, wrinkle or corrugation of the sewn fabric running across the seam.

Causes:

- Improper fabric feeding
- Wrong tension setting
- Sewing thread extension



Figure 2.11 (I): Seam Pucker

Remedies:

- By given proper tension, which can reduce puckering.
- By adjusting bobbin thread tension, first then needle thread tension.
- By adjusting feed timing and fabric control for maximum pulling of the fabric.

Skipped Stitch:

Skipped Stitch is occurred due to miss stitch formation or gap of stitch formation. Causes:

- If sewing tension is incorrect in the needle.
- Thread loop failure due to incorrect setting of thread control mechanism
- Thread loop failure due to incorrect needle size for thread size
- Needle deflection

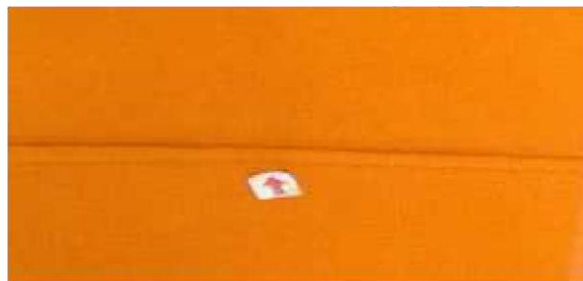


Figure 2.11 (II): Skipped Stitch

Remedies:

- By adjusting pressure foot pressure
- Proper needle insertion or alignment can reduce skipped stitch.
- By adjusting thread tension.
- By changing needle size / style.

Broken Stitch:

If any stitch are broken after sewing than it will be called broken stitch. Causes:

- Due to high thread tension
- It is found due to use of low quality thread



Figure 2.11 (III): Broken Stitch

Remedies:

- By adjusting thread tension.
- By using good quality thread

Oil or Dust Spot:

When the spot of oil, dust or wax are found on the fabric surface are known as oil or dust spot. Causes:

- If oil, wax or dust deposit from the machine to the fabric surface during sewing then oil or dust spot are occurred.



Figure 2.11 (IV): Oil Spot Remedies:

- It can remove by using special type of spray. The name of that spray is ‘Spot lifter’.

Label Displacement:

If Position of label is not correct then it will occur.

Cause:

- For lack of concentration



Figure 2.11 (V): Label Displacement

Remedies:

- By removing the label and attached it again.

Variable Stitch Density:

This type of faults occurred during sewing. Cause:

- Poor fabric feed control



Figure 2.11 (VI): Variable Stitch Density

Remedies:

- Increase the presser foot pressure.
- Change to a more positive feed mechanism.

Needle Mark:

Needle is the main elements of sewing. Needle mark occurs due to needle speed during sewing.

Causes:

- When wrong stitching arises then this defect arises



Figure 2.11 (VII): Needle Mark

Remedies:

- By avoiding wrong stitching during sewing

Sewing Line Quality Check List

1. Buyer Approved Sample & Measurement Sheet Check.
2. Sample Wise Input Check.
1. Buyer Approved Trims Card Check.
2. Buyer Approved Sample Wise Style Check.
3. All Machine thread Tension Check.
4. Style Wise Print & Embroidery Placement Check.
5. All Process Measurement Check.
6. All Machine Oil Spot Check.
7. All Process S.P.I Check as Per Buyer Requirement.

8. Input Time Shading, Bundle Mistake & Size Mistake Check.
9. Buyer Approved Wise Contrast Color Check.
10. As per Buyer Requirement Wise Styling Check.
11. All Machine Stitch Tension Balance Properly.

2.12 Garment Finishing Section

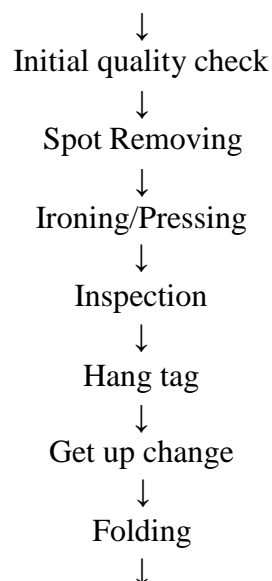
The last step in making garments finishing garments. All finishing processes are pressing, folding, packing, and cartooning of garments. Is done here. The term garment finishing applies primarily to garment pressing, folding, packing, and cartooning.

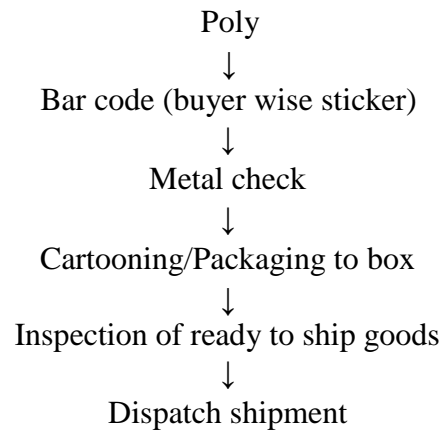


Figure: 2.12 (I) Finishing Section

Process Sequence of Finishing Section

Finishing input (style, color & size wise)





Finishing Faults, Their Causes and Remedies

Different faults are found in finishing section. Some are given below:

Barcode Mistake:

If the main label and hang tag barcode are not similar then it will call barcode mistake.

Causes:

- It is a mistake of worker.



Figure: 2.12 (II): Barcode Mistake

Remedies:

- By attaching similar main label and hang tag again.

Wrong Folding:

If finished garments are not fold properly before packing than it will occur.

Causes:

- This type of problem occurs when packing operation done quickly.



Figure 2.12 (III): Wrong Folding

Remedies:

- It can remove by folding it again.

Wrong Packing:

After packing any corner or side is folded then it is known as wrong packing. Causes:

- These types of fault occur because of quick operation
- Lack of concentration



Figure: 2.12 (IV): Wrong Packing

Remedies:

- It can remove by packing it correctly.

Wrong Ironing: Due to wrong ironing, some problems are occurred like shoulder up down, bottom up down, hem up down etc. Causes:

- Due to lack of concentration
- Due to lack of experienced



Figure: 2.12 (V): Wrong Ironing

Remedies:

- It can remove by ironing them again in proper way.

2.11.3 Finishing Quality Checking List

- i. Proper inspection of garments including measurement, spot, dirt etc.
- ii. Shade variation check
- iii. Smooth and unfold in pocket
- iv. Wrong fold
- v. Proper shape in garments
- vi. Proper ironing
- vii. Barcode attaching
- viii. Tag attaching
- ix. Collar closing

CHAPTER – 3: EXPERIMENTAL DETAILS

3.1 : Fabric inspection

Fabric is the main raw material for the production of garments and it involves 60-70% of the total cost of garments. If the defective fabric is being used to make the garment, at the end the garment maker gets a defective or defective garment, not any quality garment. Garment manufacturing is considered an important process of fabric inspection. The 4 point system is widely used for fabric inspection. Garments considered as garments are loop, set up, needle mark, stop mark, hole, knot/slab, thick and thin, Y / C fly, star, strap, light out, stripe, oil spot, etc.

Table 3.1.1 Grey fabric inspection report day 1(20-02-2021)

Buyer# marubeni	Fabrication# Twill Fleece	Yarn count # 3481+75(D+)-5081	Receved roll Quality# 12	Total length# 642
Style no#	Composition#	Yarn lot# 34008+N63B+004BN	Inspection Roll #qty.12	Total fault pont# 86
Order no :#	Total roll wt.:# 294 kg	Yarn brand # nahar+shovo+Blosu	Acceptable rolls#12	Req width# 80 (90)
Order quality:#	Color and code:# Navy	Req.GSM#	Rejected Roll#	

Shift	Roll no	G.dia	M/c Dia	Gauge	Roll Weigh	Length yrd	Grey GSM	Loop	Set up	Fault description		knot	Thick And thin	y/c fly	Oil spot	Total pont	Points/100 Lenier YD	Class A,B,C
										Hole								
										<1	>1							
A	1	87	36	20	22	52	210		1					2		6	4.77	A
	2	87	36	20	28	66	210	1	2							10	6.26	A
	3	87	36	20	22	52	210			2				2		6	4.77	A
	4	87	36	20	22	52	210		1					4		8	6.36	A
B	1	87	36	20	28	66	210		2	1						16	6.26	A
	2	87	36	20	22	52	210		1	1				2		8	6.36	A
	3	87	36	20	22	52	210		1	1						6	4.77	A
	4	87	36	20	28	66	210		2	1						10	6,26	A
C	1	87	36	20	28	66	210		1	1				4		10	6.26	A
	2	87	36	20	28	66	210		2					2		10	6.26	A
	3	87	36	20	22	52	210		1					2		6	4.77	A
	4	87	36	20	22	52	210	1		1				2		6	4.77	A
Total					294	642		2	14	8				20		86		

This table indicates the individual faults per hour grey fabric inspection of a day. Here 294 kg garments are inspected.

Table 3.1.2 Grey fabric inspection report day 2 (21-02-2021)

MAHMOUD KUTUB & SONS LTD
Al-Sayid Co. Ltd. (Pvt.) Ltd.
 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Buyer# marubeni			Fabrication# H/J					Yarn count # 280			Receved roll Quality# 12			Total length# 476				
Style no#			Composition# 5%gm					Yarn lot# 88091			Inspection Roll #qty.12			Total fault pont# 60				
Order no :#			Total roll wt.:# 236 kg					Yarn brand # S.pur			Acceptable rolls#12			Req width# 70 (90)				
Order quality:#			Color and code:# Light grey					Req.GSM#300			Rejected Roll#							
Shift	Roll No	G.dia	M/c dia	Gauge	Roll W eight kg	Length yrd	Grey GSM	Loop	Set up	Fault descriptio n		knot	Star	y/c fly	Oil spot	Total pont	Points/100 Lenier YD	Class A,B,C
										Hole								
										<1	> 1							
A	1	77	36	34	30	60	280		1				9			4	33.37	Reject ed
	2	77	36	34	08	16	280						8			8	23.33	B
	3	77	36	34	20	32	280		1							4	5.05	A
	4	77	36	34	18	36	280						4			4	5.19	A
B	1	77	36	14	20	36	280		1							4	5.05	A
	2	77	36	14	30	60	280		2							8	6.23	A
	3	77	36	14	18	36	280		1							4	5.19	A
	4	77	36	14	20	37	280		1							4	5.05	A
C	1	77	36	14	30	60	280		2							8	3.23	A
	2	77	36	14	30	60	280	1		3						8	6.23	A

A graph is given below on the basis of this table:

	3	77	36	14	30	60	280								0	6.0	A
	4	77	36	14	20	37	280		1						4	5.05	A
Total					236	476		1	10	3				21		60	

Table 3.1.2 Grey fabric inspection report day 2 (21-02-2021)

This table indicates the individual faults per hour grey fabric inspection of a day. Here 236 kg garments are inspected and roll no. is rejected for maximum defect point.

Table 3.1.3 Grey fabric inspection report day 3 (22-02-2021)

The image shows a handwritten inspection report form for Metro Knitting & Trading Mills Ltd. The form is titled 'Metro Knitting & Trading Mills Ltd.' and 'Metro Knitting & Trading Mills Ltd.' It contains various fields for inspection details, including date, time, and inspector name. It also features a large table with multiple columns for recording inspection data, such as roll number, weight, and defect counts. The form is filled with handwritten entries in blue ink.

Table 3.1.3 Grey fabric inspection report day 3 (22-02-2021)

Buyer# marubeni			Fabrication# H/J					Yarn count # 280			Receved roll Quality# 12			Total length# 672				
Style no#			Composition# 5% gm					Yarn lot# 88091			Inspection Roll #qty.12			Total fault pont# 72				
Order no :#			Total roll wt.:# 336 kg					Yarn brand # S.pur			Acceptable rolls#12			Req width# 70 (90)				
Order quality:#			Color and code:# Light grey					Req.GSM# 300			Rejected Roll#							
Shift	Roll no	G.dia	M/c dia	Gauge	Roll weight	Length yrd	Grey GSM	Loop	Set up	Fault description		knot	Thick And thin	Y/C fly	Oil spot	Total point	Points/100 Lenier YD	Class A,B,C
										Hole								
										<1	>1							
A	1	77	36	14	29	58	280		1					2	6	4.83	A	
	2				29	58			1	2					8	6.44	A	
	3				29	58			1	1					6	4.83	A	
	4				26	52				2					4	3.59	A	
B	1	77	36	14	29	58	280		2						8	6.44	A	
	2				29	58			1	1					6	4.83	A	
	3				26	52			1						4	3.59	A	
	4				29	58			1	1					6	4.83	A	
C	1	77	36	14	29	58			1	2					8	6.49	A	
	2				29	58			1						4	3.59	A	
	3				26	52			2						8	6.44	A	
	4				29	58				2					4	3.59	A	
Total					336	672			12	11				2	72			

This table indicates the individual faults per hour grey fabric inspection of a day. Here 336 kg garments are inspected.

It is an important sector of the garment industry. Cutting is the process of cutting a pattern piece from a specific fabric to make a garment. The fabric is cut to prepare the garments assembly using grade patterns and markers made by the issue plan. This is the main operation of the cutting room, all the activities of the cutting room it is the most decided, because when the fabric is cut, very little can be done to correct serious mistakes. So we collected some data by analyzing it to find out how many errors occur every day. That information is given below:

[illegible]

Table 3.2.1: Cutting Inspection Section

Date	Hours	Patta	Crease Mark	Shade Variation	Spot	Slubs	Pin Hole	Contamination	Others	Total Inspection	Total Defect	QC Pass	Total Defect %
02-02-2021	8-9 am		1	2		1		1		325	5	320	1.54%
	9-10 am	1	1		1				1	320	6	314	1.88%
	10-11 am	1		1		1	2			325	5	320	1.53%
	11-12 am	1	1	2	2	1	1	2	1	327	11	316	3.36%
	12-1 pm	1	1	1	1	1				310	5	305	1.61%
	2-3 pm		1	2	2		2	3	1	330	11	319	3.33%
	3-4 pm					1	1		1	300	3	297	1.00%
	4-5 pm	1	1	3	3	1	3	1	1	308	14	294	4.54%
Total	8 hours	5	6	11	9	6	9	9	5	2545	60	2485	2.36%

This table indicates individual errors for each day. Falls like stripes, pin holes, contamination, slubs, crease marks, shade variations, etc. are found in the cut section. Here 2545 pcs garments are inspected in a day which is passed by 2485 pcs garments QC where there is 2.36% garment defect.

Table 3.2.2: Cutting Inspection Section

Table 3.2.2: Cutting Inspection Section

Date	Hours	Patta	Crease Mark	Shade Variation	Spot	Slub	Pin Hole	Contamination	Others	Total Inspection	Total Defect	QC Pass	Total Defect %
03-02-2021	8-9 am	2	1	2		1	2	2	1	340	11	329	3.24%
	9-10 am		3	2	1	3			2	330	11	319	3.33%
	1011 am	1		1		1	2		3	350	8	342	2.28%
	1112 am	1	1	2	1	1	1	2		315	9	306	2.85%
	12-1 pm	1	1	2		1		3		335	8	327	2.38%
	2-3 pm	1	1	3	1		2	2	2	345	12	333	3.48%
	3-4 pm			3			1		4	340	8	332	2.35%

	4-5 pm	1	3		2		3	4	2	335	15	320	4.47%
Total	8 hours	7	10	15	5	7	11	13	14	2690	82	2608	3.05%

Table 3.2.2 indicates the individual faults per hour Cutting faults of day 2. Faults like Patta, Pin hole, Contamination, slub, Crease mark, Shade variation etc. are found in cutting section. Here 2690 pcs garments are inspected in a day which 2608 pcs garments are passed by QC where 3.05% garments are defected.

Graph 3.2.2 shows cutting faults of day 2 where the highest fault's value is 15 (Shade Variation) and lowest value is 5 (Spots).

Table 3.2.3: Cutting Inspection Section

Table 3.2.3: Cutting Inspection Section

Date	Hours	Patta	Crease Mark	Shade Variation	Spot	Slub	Pin Hole	Contamination	Others	Total Inspection	Total Defect	QC Pass	Total Defect %
04-02-2021	8-9 am		1			1	3	3		320	8	312	2.50%
	9-10 am		1	1				2	3	335	7	328	2.08%

	1011 am			2		1	2	1	1	325	7	318	2.15%
	1112 am		1	2	2		1	2		315	8	307	2.53%
	12-1 pm		1	2	3	1	1		2	320	10	310	3.12%
	2-3 pm				3		3	3	4	310	13	297	4.19%
	3-4 pm	1		3					3	315	7	308	2.22%
	4-5 pm			3	2		2	4	2	310	13	2977	4.19%
Total	8 hour s	1	4	13	10	3	12	15	15	2550	73	2477	2.86%

Table 3.2.3 indicates the individual faults per hour Cutting faults of day 3. Faults like Patta, Pin hole, Contamination, slub, Crease mark, Shade variation etc. are found in cutting section. Here 2550 pcs garments are inspected in a day which 2477 pcs garments are passed by QC where 2.86% garments are defected.

3.3 Sewing Section (Sample)

Sewing is one of the significant cycles in the material and garment industry. It assumes a significant part in keeping up the quality of the fabric. It is accordingly significant that all deformities ought to stay away from when sewing any garment. In this paper, different mistakes or exclusions that may happen during sewing are talked about. So we gathered some information by examining it to discover the number of mistakes that happen each day. That data is given beneath:

Table 3.3.1 Sewing Quality Report

The image shows a handwritten 'Sewing Quality Report' form. At the top, it reads 'Metro Knitting & Young Millinery Co. Ltd. Bangladesh'. Below this, there are several sections for data entry, including 'Production Details', 'Quality Control', and a large table for recording quality data. The table has columns for 'Date', 'Time', 'Machine No.', 'Operator', 'Defects', 'Remarks', and 'Total'. The data is handwritten in blue ink. The form is dated '10/10/2019' and includes a signature at the bottom.

Table 3.3.1 Sewing Quality Report

Date	Hours	Skip Stitch	Uneven Stitch	Puckering	Spot	Broken Stitch	Uncut Thread	Seam Opening	Others	Total Inspection	Total Defect	QC Pass	Total Defect %
13-02-2021	8-9 am	1			1		1		1	190	4	186	2.11%
	9-10 am	1	1	2		1	2			190	7	183	3.68%
	10-11 am				1	1			2	205	4	201	1.95%
	11-12 am	1		1		1	4	1	1	185	9	176	4.86%
	12-1 pm	1	2	2	1		1		1	210	8	202	3.81%
	2-3 pm	2		2	1	1		1		175	7	168	4.00%
	3-4 pm		2			1	3			180	6	174	3.33%
	4-5 pm	1	2	1	1		1	2	1	205	9	196	4.39%
Total	8 hours	7	7	8	5	5	12	4	6	1540	54	1486	3.51%

This table indicates individual errors per hour. Faults like skip stitch, hole, needle mark, oil spot, broken stitch, packing, etc. are found in the sewing section. Here 1540 pcs garments are inspected in one day which 1486 pcs garments are passed by QC where 3.51% garments are defective.

Table 3.3.2 Sewing Quality Report

The image shows a handwritten sewing quality report form. The form is titled 'Sewing Quality Report' and contains various fields for data entry, including date, time, and quality metrics. The handwriting is in blue ink on a white background. The form is divided into several sections, including a header section with company information, a main data entry section with multiple columns for different quality metrics, and a footer section with additional notes and signatures.

Table 3.3.2 Sewing Quality Report

Date	Hours	Skip Stitch	Uneven Stitch	Puckering	Spot	Broken Stitch	Uncut Thread	Seam Opening	Others	Total Inspection	Total Defect	QC Pass	Total Defect %
14.02.2021	8-9 am	1		1	1	3			1	170	7	163	4.11%
	9-10 am		1	1		1	2	1		180	6	184	3.33%
	10-11 am	1	1		3		1	1	1	165	8	157	4.84%
	11-12 am	2	1	1	2	1	1		1	150	9	141	6.00%
	12-1 pm	1			2	2	1	1	1	175	8	167	4.57%
	2-3 pm		1	2	1			1	2	146	7	140	4.29%
	3-4 pm			2	1	1	1			155	5	150	3.22%
	4-5 pm	2	2	1	2	1	1	2	1	180	12	168	6.67%
Total	8 hours	7	6	8	12	9	7	6	7	1321	62	1260	4.62%

Table 3.3.2 indicates the individual faults per hour Sewing faults of day 2. Faults like Skip Stitch, Hole, Needle Mark, Oil spot, Broken Stitch, Puckering etc. are found in Sewing section. Here 1321 pcs garments are inspected in a day which 1260 pcs garments are passed by QC where 4.62% garments are defected.

Table: 3.3.3 Sewing Quality Report

Metro Knitting & Young Silks Ltd.
Q) Res Cam Knit Wear Limited
 Knitting, Finishing, Packing, Inspection, Sewing, Pressing
 Q227, Narayana Industrial Estate, Narayana
QUALITY CONTROL DEPARTMENT

Job No: 92/100

Job No: 92/100										Part No: 1										Order No: 92/100										Plant No: 1									
Production No: 1										Customer No: 1										Order No: 1										Plant No: 1									
Inspection No: 1										Inspector: 1										Inspector: 1										Inspector: 1									
Item	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Item	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Item	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Defect	Defect										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																				

Table: 3.3.3 Sewing Quality Report

Date	Hours	Skip Stitch	Uneven Stitch	Puckerin g	Spot	Broken Stitch	Uncut Thread	Seam Opening	Others	Total Inspectio n	Total Defect	QC Pass	Total Defect %
15-02-2021	8-9 am	1	1	1	2		1		1	140	7	133	5.00%
	9-10 am		1	1		2	1	1		135	6	129	4.44%
	10-11 am	1	1		1		2	1	1	150	7	143	4.67%
	11-12 am		1	1	2	2	1		2	180	9	171	5.00%
	12-1 pm	1		3	2	1	1	1	1	190	10	180	5.26%
	2-3 pm	2	1	2	1			1	2	185	9	176	4.87%
	3-4 pm			2		1	2	1	1	196	7	189	3.57%
	4-5 pm	1	2	1		2	2	1	1	160	10	150	6.25%
Total	8 hours	6	7	11	8	8	10	6	9	1336	65	1271	4.86%

Table 3.3.3 indicates the individual faults per hour Sewing faults of day 3. Faults like Skip Stitch, Hole, Needle Mark, Oil spot, Broken Stitch, Puckering etc. are found in sewing section. Here 1336 pcs garments are inspected in a day which 1271 pcs garments are passed by QC where 4.86% garments are defected.

3.4 Finishing:

In textile finishing, it recovers by reducing the percentage of defects in the manufacturing process through low fabric-related process control parameters and it is well known that some possible steps to get the desired fabric quality to follow process control parameter analysis and reliable measurements to reduce fabric defects. To optimize the defects of the knitted finished fabric.

Table 3.4.1 finishing quality report (15-02-2021)

Table 3.4.1 Finishing quality report (15-02-2021)

Buyer	Order no.	Style	Inspected Price	Broken Stitch	Oil Spot	Loose Thread	Needle Hole	Open Seam	Poor Ironing	Poor Shape	Skip Stitch	Part Shading	Up-Down	Uncut Thread	Others	Total Defect Piece
H&M	18990	A.N.T	702	17	12	22	2	2	22	22	10	14	12	22	2	160
H&M	303200	T.S.P	826	21	20	20	6	6	12	20	12	11	12	19	4	166
H&M	553860	C.R.T	318	6	6	6	2	3	10	10	3	3	6	9	3	60
H&M	180990	A.N.T	317	14	12	20	6	8	20	19	12	8	14	17	4	152
H&M	303200	T.S.P	242	10	6	10	2	2	10	14	6	4	6	10	2	82
H&M	553860	C.R.T	318	6	6	6	2	3	10	10	3	3	6	9	3	70
Total			2723	74	62	84	20	24	84	95	46	43	56	86	18	690

This table indicates the individual errors of the day by eliminating the errors of the day. False Broken Stitch, Oil Spot, Loose Thread, Needle Hole, Needle Mark, Open Sew, Poor Iron, Poor Shed, Leave a Sew, Part Shading, Up-Down, Un-Sum, Un-Cut Thread, etc. . Here 2723 pcs garments are inspected in one day

Table 3.4.2 Finishing quality report (16-02-2021)

Table 3.4.2 Finishing quality report (16-02-2021)

Buyer	Order no.	Style	Inspected Price	Stitch Broken	Oil Spot	Thread Loose	Needle Hole	Open Seam	Ironing Poor	Poor Shape	Skip Stitch	Shading Part	Up-Down	Thread Uncut	Others	Total Defect Piece
H&M	18990	A.N.T	602	18	11	23	3	3	22	16	10	16	13	21	3	159
H&M	303200	T.S.P	726	22	21	20	5	6	12	19	13	13	16	20	2	170
H&M	553860	C.R.T	328	8	7	9	3	4	11	10	4	2	8	8	4	78
H&M	180990	A.N.T	337	11	13	21	6	7	22	10	14	7	12	16	3	142
H&M	303200	T.S.P	262	12	7	14	3	2	10	15	5	4	6	11	3	92
H&M	553860	C.R.T	308	7	7	5	2	4	11	11	2	3	5	6	2	64
Total			2563	78	66	92	22	26	88	81	48	45	58	72	17	705

This table indicates individual daily errors 2-day completion errors. Broken stitching, oil spots, loose thread, needle hole, needle mark, open seam, poor shade, avoid a stitch, part shading, up-down, un-even, un-cut thread, etc. are available in the finishing section. Here 2563 pcs garments are inspected in one day.

[illegible]

Table 3.4.3 Finishing quality report of day 3 (17-02-2021)

Buyer	Order No.	Style	Inspected Price	Broken Stitch	Oil Spot	Loose Thread	Needle Hole	Open Seam	Poor Ironing	Poor Shape	Skip Stitch	Part Shading	Up-Down	Uncut Thread	Others	Total Defect Piece
H&M	18990	A.N.T	607	17	13	20	4	7	19	22	9	14	8	23	3	159
H&M	303200	T.S.P	626	19	25	19	4	5	14	19	16	11	15	21	7	175
H&M	553860	C.R.T	348	7	5	6	3	5	13	10	3	4	6	5	3	70
H&M	180990	A.N.T	327	10	15	23	5	6	21	29	11	8	11	13	4	156
H&M	303200	T.S.P	242	14	4	17	2	4	9	11	4	5	7	15	2	94
H&M	553860	C.R.T	328	8	3	4	3	3	12	11	3	2	3	4	3	60
Total			2476	75	65	89	21	30	88	102	46	44	50	81	22	714

This table indicates the individual faults per day finishing faults of day 3. Faults like Broken Stitch, oil Spot, Loose thread, Needle hole, Needle mark, Open seam, Poor ironing, Poor shade, Skip stitch, Part shading, Up-down, Un-even, Un-cut thread etc. are found in finishing section. Here 2476 pcs garments are inspected in a day.

CHAPTER – 4: DISCUSSION OF RESULTS

Garment products are produced by some important processes. During production, various types of defects often occur in the gray fabric inspection department, cutting department, sewing department, and finishing department. After the above analysis, we have often found more sensitive errors and it is comparatively higher than each other.

4.1 Fabric Inspection Section

Result:

In fabric inspection section different types of fault are found per day. So we have analyzed the faults for a day and got some result. The calculated result is

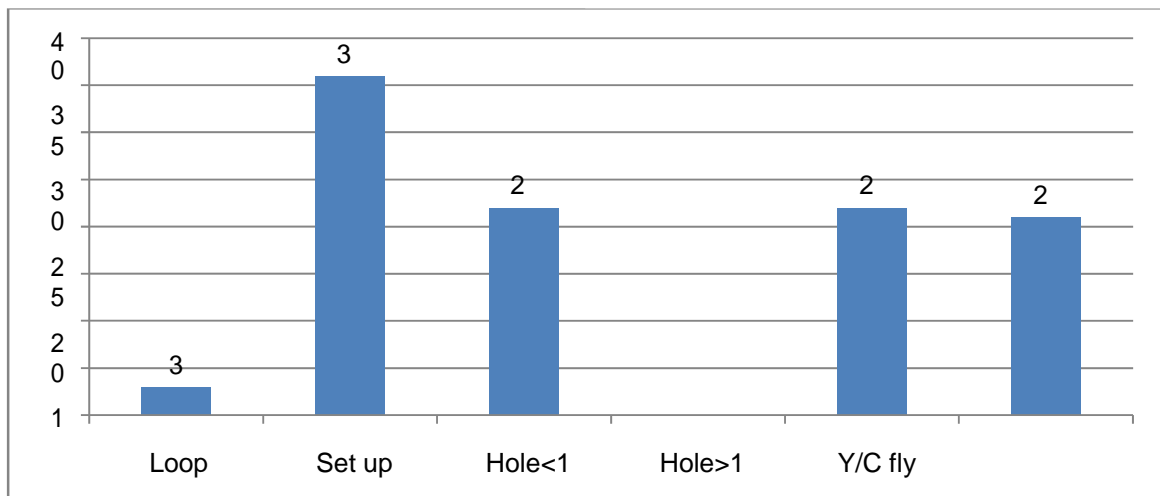
Table 4.1: Data Analysis of Total Result in grey fabric inspection section

Month	Date	Length (yrd)	Loop	Set up	Hole<1	Hole>1	Y/C fly	Star	Total defect	Total point
February	20-02-2021	642	2	14	8		20		44	86
	21-02-2021	476	1	10	3			21	35	60
	22-02-2021	672		12	11		2		35	72
Total	3 days	1790	3	36	22		22	21	114	218

Table 4.1 indicate the individual fabric inspection faults per day here 1790 yards fabric is inspected and total defect are found is 114 and their total point is 218 for 3 days.

A graph is given below on the basis of this table:

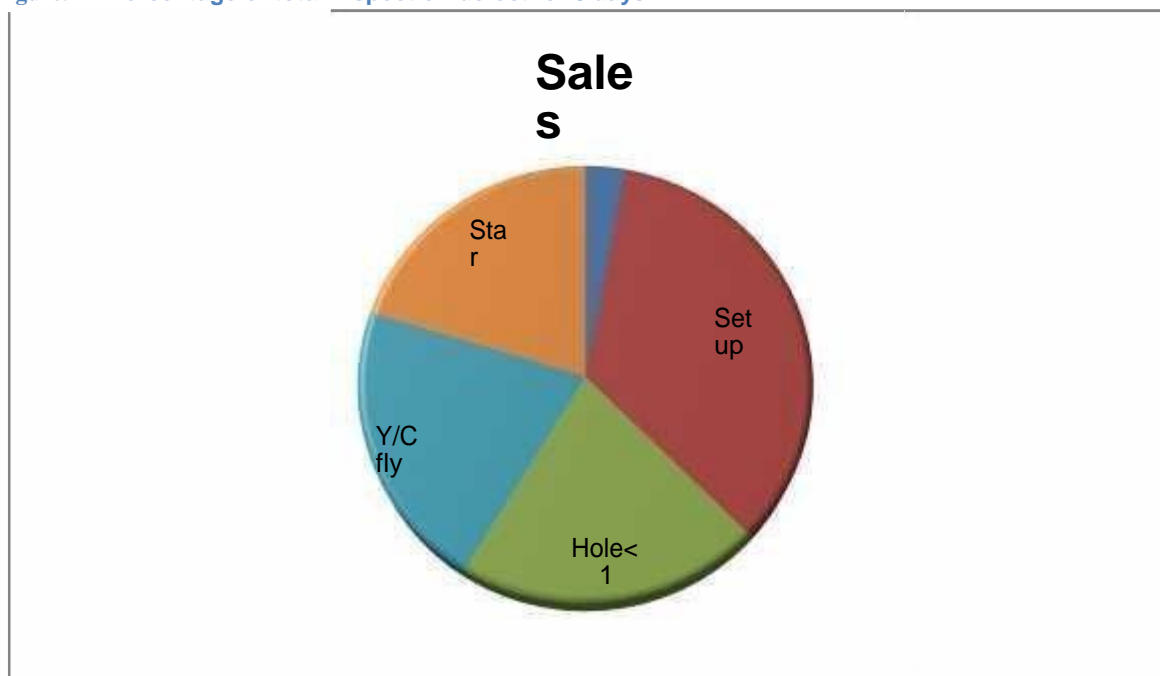
Figure .4.1 Total inspection faults for 3 days



Graph 4.1 shows grey fabric faults where the highest fault value is 36 (set up) and lowest fault value is 3 (loop) in grey fabric inspection section.

A graph is given below on the basis of this table:

Figure.4.1 Percentage of total inspection defect for 3 days



Here the highest fault is Set up which is 35% and medium faults is Y/C fly and Hole which is 21% and the lowest fault percentage is 3% (loop).

From the graph 4.1 graph and 4.1 percentage graph we can see that,

- ❖ Within 114 faults Loop found 3 which is 3% and this is the lowest fault.

- ❖ Within 114 faults Set up is found 36 which percentage is 35% and this is the highest percentage of defect in inspection system.
- ❖ Within 114 faults Hole <1 is found 22 which percentage is 21% and this medium stage of fault occur in inspection system.
- ❖ Within 114 faults Y/C fly is found 22 which percentage is 21% this is also in in medium stage but less found in inspection system.
- ❖ Within 114 faults Star is found 21 and its percentage is 20% and rarely found in inspection system.

Discussion:

Perforation is a common problem in gray fabric inspections. The main reason is broken yarn which is a very tight takedown pull, with weak spots of yarn, garbage surface of yarn guide or feeder, defective or damaged needle, and high takedown pull, worn or old needle.

- a) Daffodil International University
- b) Y / C fly is playing an important role in inspection errors. This error occurs when the flying yarn merges with the yarn during weaving.
- c) Star is also a common problem with a knitted fabric. This is due to the change in yarn tension during production, the buckling of the needle latch, the production of low GSM fabric.

4.2 Cutting Inspection Section

Result:

Different types of errors are found in the cut section every day. So we analyzed the errors for a week and got some results. The result of the calculation is-

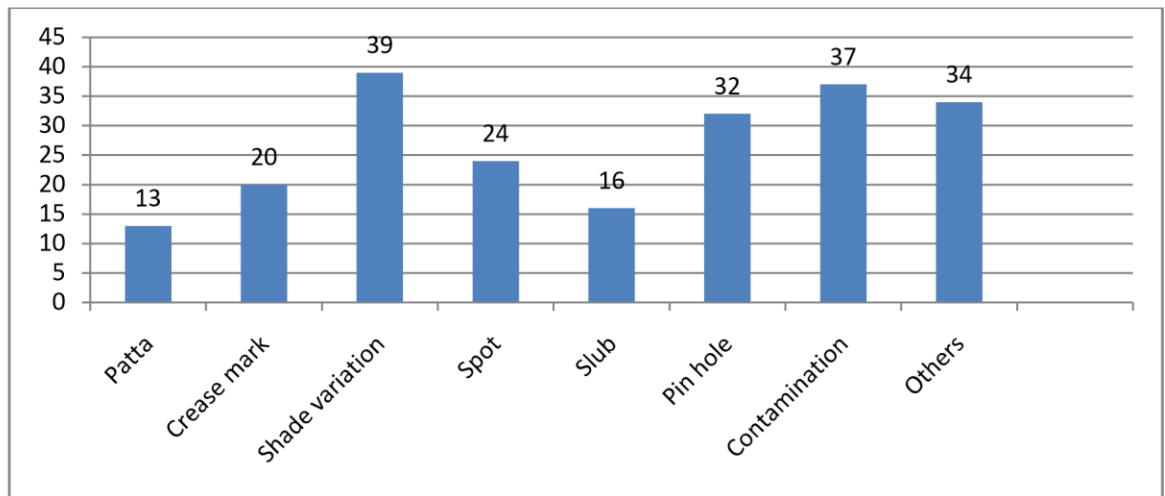
Table 4.2: Data Analysis of Total Result in Cutting Section

Month	Date	Patta	Crease mark	Shade	Spot	Slub	Pin hole	Contamination	Others	Total inspection	Total defect	QC pass	Total defect
March	02-02-2021	5	6	11	9	6	9	9	5	2545	60	2485	2.36%
	03-02-2021	7	10	15	5	7	11	13	14	2690	82	2608	3.05%
	04-02-2021	1	4	13	10	3	12	15	15	2550	73	2447	2.86%
Total	3 days	13	20	39	24	16	32	37	34	7785	215	7570	2.76%

Table (4.2) indicates the individual Cutting faults per day are inspected cut pcs are 7785 pcs, total defects are found 215 pcs and total QC passed cut pcs are 7570 pcs for three days

A graph is given below on the basis of this table:

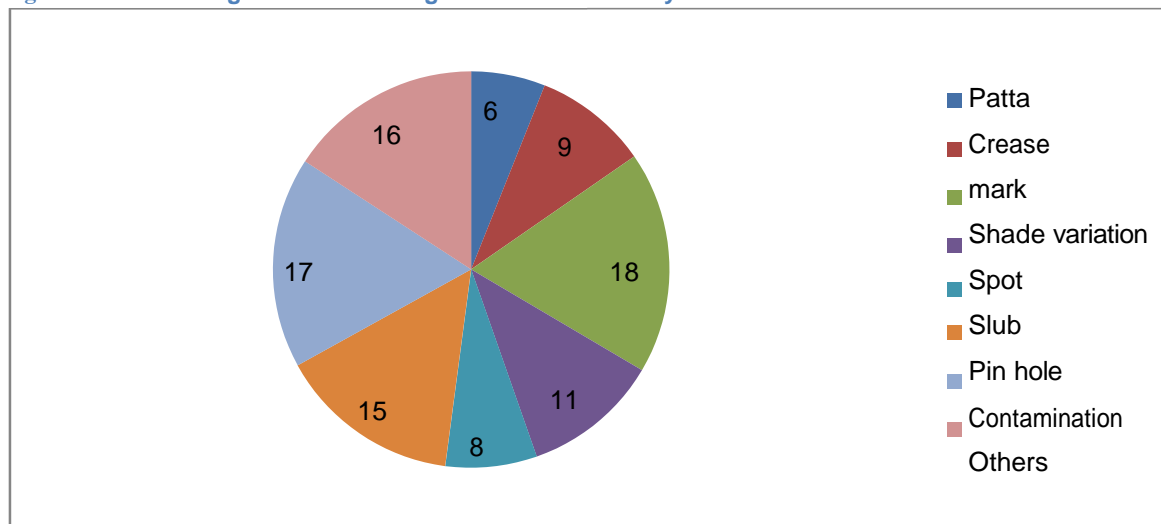
Figure .4.2: Total Cutting Faults for Three Days



Graph 4.2 shows Cutting faults where the highest fault's value is 39 (Shade Variation) and lowest value is 13 (Patta) in Cutting section.

A percentage graph is given below on the basis of this table

Figure.4.2: Percentage of Total Cutting Faults for Three Days



Here the average error percentage (%) is 2.7676%. Among these errors, the shade variation is more than any other error of the day. The value of the shadow variation remains after that. The defect has an average position according to the value of the percentage of spots and pin holes. Signs of straps, slabs, and creases have the lowest position.

From the graph (4.2) and percentage graph (4.2) we can see that,

- ❖ Among the 21 215 pc errors, the shade variation was found to be 39 pcs and the percentage value was 18%. So this error is highly seen in the cutting section.
- ❖ Among the 21 215 pc errors, the shed variation was found to be 37 pcs and the percentage value was 17%. So this fault is the 2nd highest fault that occurs most often in the cutting section.
- ❖ Among the 21 215 pc errors, pinholes and spots were found in 32 pcs and 24 pcs. Their percentage values are 15% and 11%. These errors are being considered as average values in the cutting section.
- ❖ Of the 21 215 pcs defects, the straps and slabs were found to be 13 pcs and 16 pcs. Their percentage values are 6% and 7%. So these two faults are the least common errors that occur most often in the cutting section.

Discussion:

- Contamination plays an important role in determining the quality of cotton by omitting the necessary properties like length, strength, fineness. The presence of dead fibers and other foreign substances such as pigment fibers, buds, synthetic fibers, etc. are mainly responsible for this defect. Contamination, even if it is a tiny single fiber, can be reduced by lowering the yarn, fabric, and garments to a second quality or by increasing the overall rejection of the whole batch or shipment by using a rich fiber blend in the yarns used for weaving. As a result, less dead fiber fabric will appear and less contamination will occur. The use of strict control measures in the blow room can prevent the mixing of foreign substances in the cotton blend.
- Men's A common problem is the variety of shades seen in garments made of colored or printed fabrics. A dress with shade variations is considered a flawed dress. Shades of a garment vary when different garment elements have different skin colors (shades) or the garment parts of the same garment do not match the shade. Changes in the shade of the fabric of the order cause variations in the shades in the garments. Most of the time the shed varied due to incorrectly spreading the fabric rolls during cutting.
- The pinhole also comes from the time of fabric weaving. A pinhole may come into the fabric due to breakage or bending of the latch. Reflection of cam box, broken

needle butt, needle damage, improper tension, etc. can create pinholes. It can be removed by changing the needle and the knot should be given properly after the yarn is broken. Proper arousal and feeding arrangements can reduce pinholes.

Slab contraction joints should intersect at the openings for columns and should intersect at the openings for columns. Fine yarn as well as any slab part of the yarn cannot reduce the slabs. We use fine yarn during the weaving process but the slab is less important. Slab contraction joints should intersect at the openings for columns and should intersect at the openings for columns.

4.3 Sewing Section

Result:

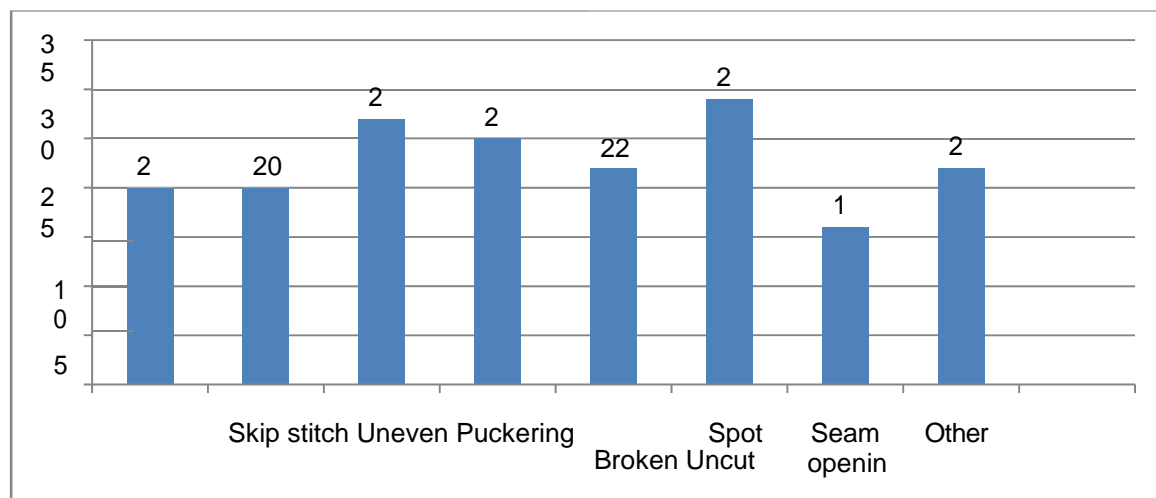
In sewing section different types of fault are found per day. So we have analyzed the faults for one week and got some result. The calculated result is-

Table 4.3: Data Analysis of Total Result in Sewing Section

Month	Date	Skip stitch	Uneven stitch	Pucker in	Spot	Broken stitch	Uncut thread	Seam opening	Others	Total inspectio	Total defect	QC pass	Total defect %
April	13-02-2021	7	7	8	5	5	12	4	6	154 0	54	148 6	3.51 %
	14-02-2021	7	6	8	12	9	7	6	7	132 1	62	126 0	4.62 %
	15-02-2021	6	7	11	8	8	10	6	9	133 6	65	127 1	4.86 %
Total	3 days	20	20	27	25	22	29	16	22	419 7	18 1	401 6	4.31 %

Table (4.3) indicates the individual Sewing faults per day are inspected cut pcs are 4197 pcs, total defects are found 181 pcs and total QC passed cut pcs are 4016 pcs for three days.

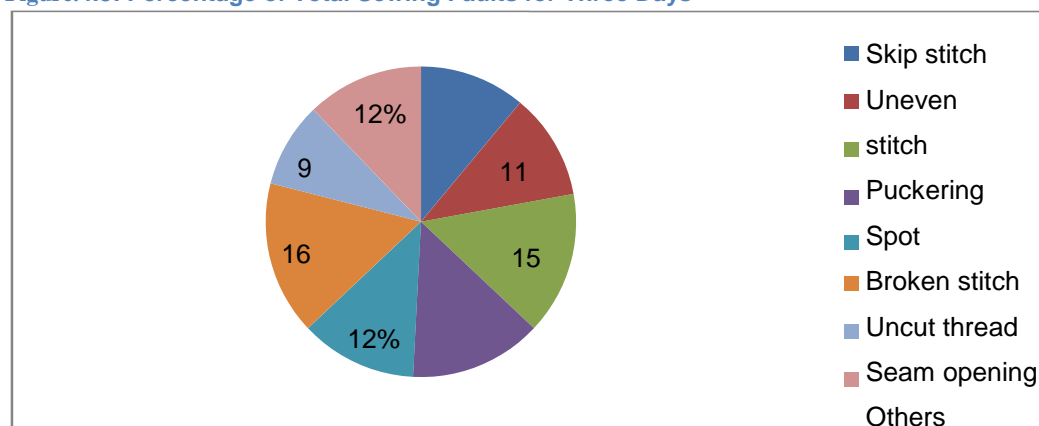
Figure .4.3: Total Sewing Faults for Three Days



Graph 4.3 shows Sewing faults where the highest fault's value is 29 (Uncut Thread) and lowest value is 16 (Seam Opening) in Sewing section.

A percentage graph is given below on the basis of this table:

Figure.4.3: Percentage of Total Sewing Faults for Three Days



Here the average error percentage (%) is 4.31%. Among these errors, the uncut thread is more than any other error of those days. Then the trafficking values go astray. Stains and broken sewing problems have a moderate position of a defect according to the percentage value. They have the lowest seam opening position.

From the graph (4.3) and percentage graph (4.3) we can see that,

- ❖ Of the 18 181 pcs Garment Error, Undot Thread, and Packing 29 pcs and 27 pcs are available. Their percentage values are 16% and 15%. So these errors are highly seen in the sewing section.
- ❖ Of the 18 181 pcs garments error, the stains were found to be 25 pcs and the percentage value 14%. So this error is the third-highest fault that occurs most often in sewing chapter.

- ❖ Skip stitch, uneven stitch, broken stitch are found 20 pcs, 20 pcs and 22 pcs. Their percentage values are 11%, 11% and 15%. Those faults are considering as average value in sewing section.
- ❖ Within 181 pcs garments fault, Seam opening is found 16 pcs and percentage value is 9%. So this fault is lowest fault value that's frequently occurred in sewing section.

Discussion:

- Uncut/loose threads are one of those errors that are accidentally passed by the sewing checker as well as the finishing section. This causes the style to crumble during the next inspection process, thus not meeting the AQL standards set by the buyer. Be aware of uncut threads to reduce this defective thread cutter.
- Packing is the distortion or wrinkling of the fabric along the sewing line. SIM ripening is the most common problem in the make-up trade. This is a problem that also concerns fabric finishers, sewing machine manufacturers, and sewing thread manufacturers. This problem has been exacerbated by the introduction of new and obsolete fabrics and finishes. Avoiding seam packing is very effective as there must be some buckling along the seam line. There is no standard level of acceptability. Select the right sewing thread thickness, needle thickness, and a fine feed dog according to the fabric being used considering the strength of the required stitching. Regular inspection and maintenance of sewing machines and regular needle replacements can reduce seam packing.
- Wing spots are another big problem in the sewing department. These defects occur when oil and wax spots are found on the fabric surface. Stains mainly occur on older machines. The stains are removed from the fabric by a special type of spray called 'spot lifter' and 'millet powder'.

4.4 Finishing Section

Result:

In finishing section different types of fault are found per day. So we have analyzed the faults for one week and got some result. The calculated result is-

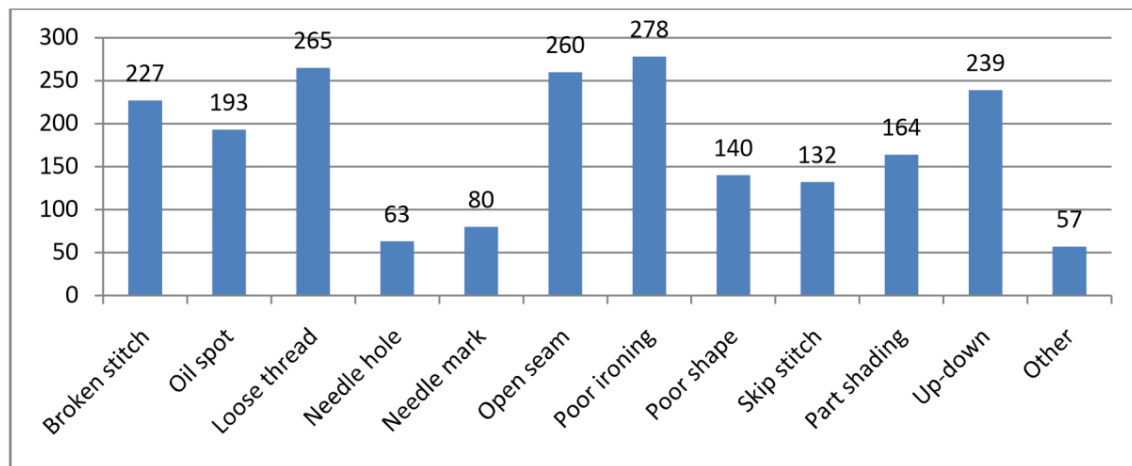
Table 4.4: Data Analysis of Total Result in Finishing Section

Month	Date	Inspected piece	Broken stitch	Oil spot	Loose thread	Needle hole	Needle mark	Open seam	Poor ironing	Poor shape	Skip stitch	Part shading	Up-down	Other	Total defect piece
February	15-02-2021	2723	74	62	84	20	24	84	95	46	43	56	86	18	690
	16-02-2021	2563	78	66	92	22	26	88	81	48	45	58	72	17	705
	17-02-2021	2476	75	65	89	21	30	88	102	46	44	50	81	22	714
Total	3 days	7762	227	193	265	63	80	260	278	140	132	164	239	57	2109

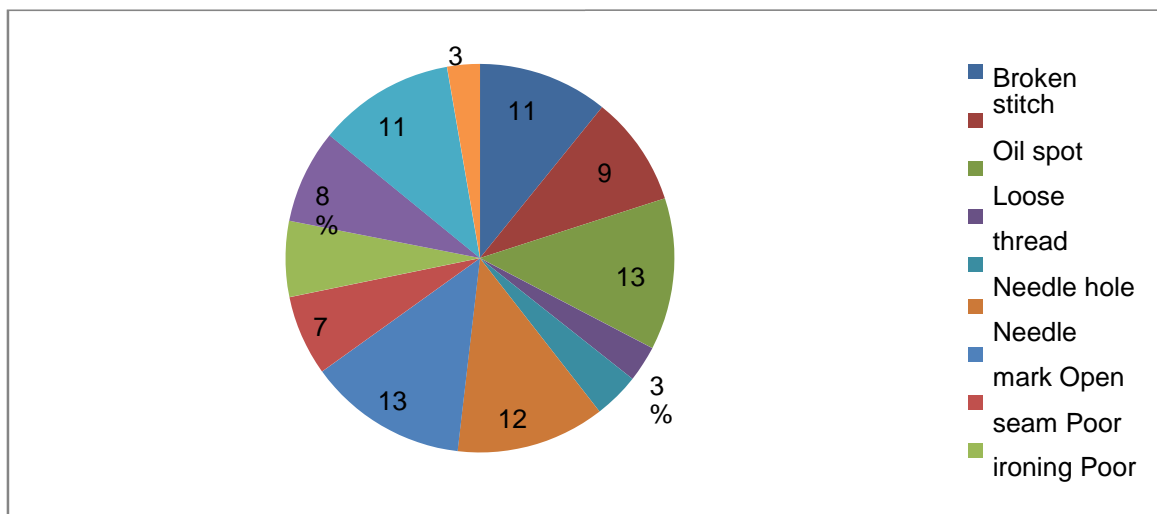
Table 4.4 indicate the individual finishing inspection faults per day here 7762 pcs fabric is inspected and total defect are found is 2109 for 3 days.

A graph is given below on the basis of this table:

Figure . 4.4: Total finishing Faults for Three Days



Graph 4.4 shows finishing faults where the highest fault value is 278 (Poor ironing) and lowest fault value is 57 (Others) in finishing section.



Here the highest fault is 13 % (Poor ironing and loose thread) and the lowest fault percentage is 3% (Other).

From the graph (4.4) and percentage graph (4.4) we can see that,

- ❖ Within 2109 pcs garments faults loose thread and skip stitch found 13% and their quantity is 265 and 278.
- ❖ Within 2109 psc garments faults broken stitch and up-down found 11% and their quantity is 227 and 239.
- ❖ Within 2109 pcs garments faults Needle whole and other found 3% and their quantity is 63 and 57.

Discussion:

- The measurement check is very important in the measurement section. This process is done after ironing. These errors are mainly due to dimensional instability or compressive properties. Quality control must ensure that before cutting the knitted fabric, the fabric is in a comfortable or near comfortable condition - i.e. the fabric/garment will shrink slightly when it is in the customer's hands. P spots are another big problem in the sewing department. These defects occur when oil and wax spots are found on the fabric surface. Stains basically happen for an old machine. The stains are removed from the fabric by aspecial type of spray called 'spot lifter' and 'millet powder'.
- When ironing, if the side of the shoulder is not held properly, the upper part of the shoulder occurs. This is not a big problem. This defect can be recovered by dressing.

CHAPTER – 5: CONCLUSION

- ✓ Quality control plays an important role in the production of quality weaves. Nowadays the buyer needs certain quality in all the big parts of the finished products. Defect detection is very important during the production of knitted fabric for improved quality and productivity. This paper ends as-
- ✓ In grey fabric inspection section 1790 yard fabric is inspected and 114 fault is found.
- ✓ In cutting section defect percentage 2.76% is found from inspected 7785 pcs for three days.
- ✓ In sewing section total defects are found 181pcs, total QC passed are 4016 pcs and defect percentage is found 4.31% for three days.
- ✓ In finishing section 7762 pcs fabric is inspected and 2109 fault is found.

By analyzing the inspections of different sections we concluded that the maximum error of 2109 errors was found in the completion section. And the minimum defects were found in 114 defective gray fabric inspection quantities.

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