Faculty of Engineering

Department of Textile Engineering

"Study on Quality Control in Cutting Section''

Course Title: Project (Thesis)

Course Code: TE-4214

Submitted By

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Supervised By

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Daffodil University

This Report Presented in Partial Fulfillment of the Requirements for the

Degree of Bachelor of Science in Textile Engineering.

Advance in Apparel Manufacturing Technology

May 2019

Letter of Approval

To

The Head

Department of Textile Engineering

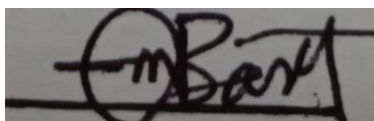102, Sokrabad, Mirpur Road, Dhanmondi-32, Dhaka-1216.

Subject: Approval of Project of B.Sc. in Textile Program

Dear Sir,

I'm just writing to let know that, this project report titled **as "Study on Quality Control in Cutting Section' has been prepared by the Md. Ashraful Islam, ID: 162-23-4744** completed for final evaluation. The whole report is prepared based on the proper investigation and interruption trough critical analysis of empirical data with required belongings. The student was directly involved in his project activities and the report become vital to spark of many valuable information for the readers.

Therefore, it will highly be appreciated if you kindly accept this project consider it for final evaluation.

Yours Sincerely

Engr. Mohammad Abdul Baset

Assistant Professor

Department of Textile Engineering

Daffodil International University

ACKNOWLEDGEMENT

At first, I grateful to Allah who gives us sound mind & sound health to accomplish this project successfully.

I am also grateful to our supervisor Mohammad Abdul Baset, Assistant professor, Department of Textile Engineering, Faculty of Engineering, Daffodil international University. Her endless patience, scholarly guidance, continual encouragement, energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting these at all stages have made it possible to complete this project.

I am also thankful to our all teachers, lab assistant, register sir, coordinators and all the employees of Daffodil International University. I'm highly delighted to express our regards & amp; gratitude to honorable Head Prof. Dr. Md. Mahbubul Haque for providing his best support to us.

Finally, I would like to express a sense of gratitude to our beloved parents and friends for their mental support, strength and assistance throughout writing the project report.

DECLARATION

I attest that this report is totally my own work, except where i have given fully documented references to the work of others and that the materials contained in this report have not previously been submitted for assessment in any formal course of study. If I do anything, which is going to breach the first declaration, the examiner/supervisor has the right to cancel my report at any point of time.

Submitted By

Md. Ashraful Islam,   ID: 162-23-4744

Department of Textile Engineering

Daffodil International University

Faculty of Engineering

Department of Textile Engineering

Approval Sheet

This research entitled "**Study on Quality Control in Cutting Section**", **at Daffodil International University, May- 2019''** prepared and submitted by **Md. Ashraful Islam ID: 162-23-4744** in partial fulfillment of the requirement for the degree of BACHELOR OF SCIENCE IN TEXTILE ENGINEERING has been examined and hereby recommended for approval and acceptance.

Muhammad Abdul Baset

Assistant Professor

Department of Textile Engineering

Abstract

My Thesis Topic is Study On "**Quality Control in Cutting Section''** for collecting Fabric inspection data of **N.A.Z Bangladesh Ltd**. In this project I have prepared based on the Fabric Cutting procedure, Fabric Inspection, spading, fabric relaxation, Marker Making, Marker placing on the lay, fabric cutting, Numbering, bundling, fault of cutting, types of different fault and their remedies which is done before assembled into a completed a product. In here i have Inspected 2240 pieces of Fabric where 2156 pieces are passed and 84 pieces are defective.

Fabric Cutting is deeply related with cost. To consume the cost, it is important to identify the fault and recover it. Otherwise production cost would be rise which causes a great damage for the industry.

In order to produce a quality product, it is important to inspect the product with proper care.

Proper Cutting could be save more production damage.

The main purpose of properly pattern and Marker Making is to fulfill the buyer requirement so; Cutting should be done as per the buyer requirement.

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Chapter- 1
Introduction

1.1 Introduction

A thesis paper referred to as research paper that provides the reader with sufficient information about particular topic. Thesis is a document submitted in support of candidature for an academic degree or professional qualification presenting the author's research and findings. Our thesis paper introduced as "Quality Control in Cutting Section". I realized that it is too much important to maintain quality in textile sector as well as garments production, so I choice this type of topic and try how to improve quality in garments production. I worked in one garment manufacturing industry named N.A.Z Bangladesh Ltd. that is 100% export and import industry. At first I have to know about sequence of garments production.

1.2 Aim of Project

The study requires a systematic procedure from selection of the topic top final report preparation. In this study, exploratory research was undertaken to gain insights and understanding of causes of frequently different stages knit garments production and there defects & remedies. To perform the study data sources Ire identified and collected, Ire analyzed, interrupted and presented in a systematic manner and key points are found out. This overall process of methodology is given in below that has been followed in the study.

1.3 The following are the main objective of the study

➢ To know about the Garments Factory.
➢ To know about the garments Wastage.
➢ To know about the working procedure as well increase the productivity.
➢ To know about to separate fabric parts from the spread of lay according to the dimension of the marker.

Chapter-2.0
Literature Review

2.1 Introduction

Cutting requires skilled employees because failure to properly cut the fabric correctly could result in quality problem with fit and assembly. A quality control operation is performed after the components are cut and fused. The replacement of faulty components is more convenient at this stage as it does not affect the previously finished cutting process, or the forthcoming sewing process. All the cut components are inspected and the following quality parameters are controlled: fabric quality; check miscut, the conformity of the size and shape of cut components to their pattern pieces; the quality of notches and drill marks. They are described below.

2.2 Types of quality control cutting section

Quality control of cutting section mainly divided into four parts. Those are:

- ➢ Marker Inspection
- ➢ Spreading Control
- ➢ Cutting Quality control
- ➢ Piece Goods Inspection

2.3 Object of Cutting

- ➢ To separate fabric parts from the spread of lay according to the dimension of the marker.
- ➢ To make the garments according to required design and shape.
- ➢ To prepare garments pieces to forward with next process of garments manufacturing.

2.4 Cutting

Cutting is one of the major process in garments industry. Here garments parts are cutting according to the pattern. Cutting is separating of garments in to components and in a general form. It is production process of separating a spread in to garments parts that are the precise size and shape of pattern pieces on a marker. In garments cutting department, a process flow chart have to maintained to send the right measurement parts in the next process for making quality garments.

Figure2.1: Fabric cutting

2.5 Flow sequence of cutting

<div align="center">

Pattern received from pattern department
↓
Cutting ratio received from merchandiser
↓
Marker making
↓
Fabric received from the store
↓
Fabric relaxation
↓
Fabric Spreading
↓

</div>

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Marker placing on to the lay
↓
Cutting the fabric
↓
Numbering

Quality inspection
↓
Sorting and Bundling
↓
Send to the sewing section
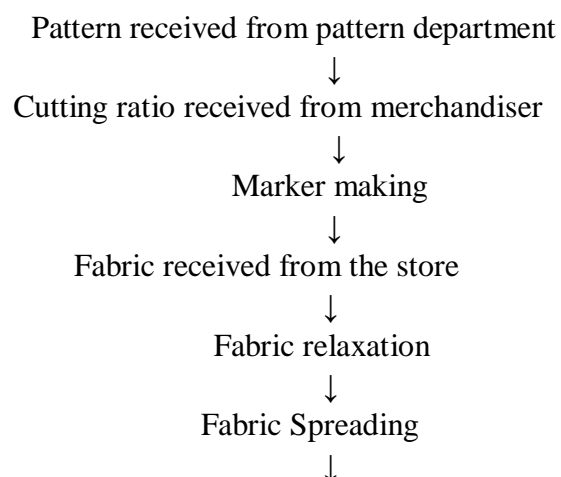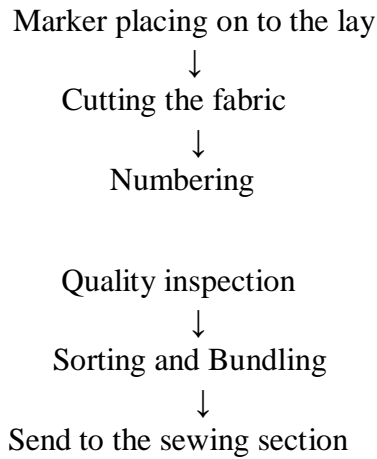
2.5.1 Pattern received from pattern department

At first I have received different size pattern for each style garments from the pattern department. It is the most important part of cutting section.

2.5.2 Cutting ratio received from merchandiser

Cutting ratio for each style garments should be received from merchandiser.

2.5.3 Marker making

To complete cutting process in each way, I have to make marker for each style of garments. Marker is the perfect way to reduce fabric wastage. Marker gives actual guide line for completing the flawless or correct fabric cutting. Marker making can be done in both ways like manually and computerized method.

Figure2.2: Marker Making.

2.5.3.1 Types of Marker

There are four kinds of marker such as:

- ➢ Shading marker,
- ➢ Non shading marker,
- ➢ Group marker, and
- ➢ One /two way marker.

2.5.3.2 Objectives of marker making

There are different objectives of marker making-

- ➢ To help the size and style.
- ➢ It is essential of bulk production.
- ➢ It helps to minimize the fabric wastages.
- ➢ To save the production time and cost.
- ➢ It is important of fabric cutting.

2.5.3.3 Methods of marker making

There are two methods usually used for marker making in cutting section-

- ➢ Manual method
- ➢ Computerized method

2.5.3.4 Manual method

Manual market making is the oldest, traditional and typically used method. In this processes pattern maker make the all pattern pieces manually and after that fabrics are spread on cutting table and set up all pattern pieces directly onto the marker paper.

2.5.3.5 Types of manual marker making method

Manual methods are two types-

- ➢ Marker planning with full size pattern
- ➢ Marker with minimized pattern

2.5.3.6 Computerized marker making method

Computerized method is the best and most popular method of marker making. Generally it gives higher efficiency. During this marker making method every specific style and part of the patterns. Computer Aided Design (CAD) system are used to make marker. Comparison between manual and CAD marker making is huge.

2.5.3.7 Types of computerized marker making method

Computerized marker making method is mainly two types-

- ➢ Automatic marker making
- ➢ Interactive marker making

2.5.4 Fabric received from the store

At the main time, I have to received fabric from the store each style of garments. Fabric requirement for an order is calculated according to the average consumption of the fabric. From the marker In case of multiple color order, color wise requirement is made.

2.5.5 Fabric relaxation

This process is optional. Specially used for knits fabric. During rolling of fabric it get stretched. So it is essential to bring the fabric on stable form otherwise garment would shrink after making. To relax the fabric roll or than is opened and spread and kept for about 24 hours. In real practice (N A Z) fabric relaxation time is 12 hour. Fabric relaxation is performed for a certain period. This time is varied from fabric to fabric. But the minimum time of relaxation is twelve (12) hours.

Figure 2.3: Fabric relaxation

2.5.6 Fabric Spreading

Spreading refers smooth lying out of the fabric in superimposed layers of specific length. Cutting marker paper is laid in the top of the fabric layers. The maximum width of the cutting marker constrained by the usable width of fabric. The number of plies depends upon the thickness of fabric. When the above process is completed then I have to spread the fabric with correct lay highet and ply tension.

Figure2.4: Fabric Spreading

2.5.6.1 Types of spreading

➢ Flat spreading

➢ Stepped Spreading

2.5.6.2 Methods of spreading

➢ **Manual Method**

By Hand By,

Hook,

Spreading Truck (with the help of operator).

Mechanical method

- ➢ **Semi-Automatic spreading:** Semi-automatic machine is working almost similar to Hand process with spreading. This methods working prouder are same but this process are working by electric motor.

- ➢ **Fully automatic spreading:** Fully automatic machine is upgrade version of Semi-Automatic. This machine has the all of quality which is included in Semi-Automatic.

Figure 2.5: Mechanical cutting machine

2.5.7 Cutting the fabric

Fabrics have to cut by maintaining marker. Fabric cutting should be done accurately as per exact dimension of the pattern pieces in the marker. Accurate cutting depends on methods of

cutting and marker planning. During fabric cutting, the friction between the fabric and the blade produces temperature in the blade; the temperature may be up to 300°C. If the fabric contains synthetic fibers, e.g. nylon, polyester, acrylic or their blends, then fused edge may result in the fabric**.**

2.5.7.1 Methods of cutting

Basically Cutting Methods are of two types:

➢ Complete manual technique M/C Used:

    Scissors.

➢ Manually Operated power knife M/C Used:

     Scissor and Straight knife.

Figure 2.6: Fabric Cutting

Figure 2.7: Straight Knife cutting machine

Figure 2.8: Scissor.

2.5.7.2 Straight Knife cutting machine

Brand name : KM

Model: MACK-AUV

Country of origin: Japan

Speed: 300-3600 rpm

Bleed length: 8 inch to 10 inch

Weight: 15 kg

Per hour's capacity: 110-160 lay

2.5.7.3 Main parts of straight knife cutting machine

➢ A base plate based on rollers for easy movements
➢ Handle
➢ A base plate based on rollers for easy movements
➢ Handle
➢ Knife
➢ Knife guard
➢ Knife clamp
➢ Pressure float
➢ Roller
➢ Pressure feed lifter
➢ Wheel
➢ Safety guard liver
➢ An electric motor
➢ Stand or up right
➢ Grinding wheel
➢ Sharp level

2.5.7.4 Feature of Straight knife cutting machine

- ➢ Knife is driven by electricity
- ➢ Base plate is on for easy movement.
- ➢ Handle to make cutting direction.
- ➢ High cutting speed.
- ➢ Bleed stroke 2.5 to 4.5 cm.
- ➢ Bleed height 8 to 10 inch.

2.5.8 Numbering

After cutting the fabrics, each parts of different style fabrics should be numbered to avoid mixing with the others style fabric parts. Normally the numbering code contains garment size (e.g. Small, Medium, Large), Marker number and layer sequence. The worker can set the numbering format for each style and marker as desired. This process is also called as layer marking and ply numbering. If there is layer number in each component then at the time of stitching only correct components will be stitched together.

Figure 2.9: Numbering machine

2.5.9 Sorting

According to production system (Make through, progressive bundle or one piece flow system) cut components are sorted. In sorting all component of a garment placed together. Size wise Sorting and in case multiple colors are cut in a single lay, color wise sorting will be required.

2.5.10 Quality inspection

Checking the cutting fabric accurately by comparing with its mistake.

Figure 2.10: Quality inspection

2.5.11 Bundling

As per the production line requirement a certain number of pieces with all components are tied together. This process is known as bundling. Each bundle is marked with bundle number, style name, size number and quantity of pieces in that bundle. At this stage cutting are ready to send to production line for stitching.

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Figure 2.11: Bundling

2.5.12 Send the sewing section

All process is completed to send the sewing section. Cutting fabric parts have to send into next process where required like printing, embroidery, sewing etc.

2.6 Process sequence of QC in cutting section

Shade check with buyer approved swatch
⇓
Check GSM
⇓
Running shade check
⇓
Roll wise shade check
⇓
Batch to batch shade check

⇓
Shrinkage test
⇓
Marker check
⇓
Cutting panel check

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<div align="center">

⇓

Pattern check

⇓

Shape check of different parts

⇓

Measurement check

⇓

Check number of different parts in bundle

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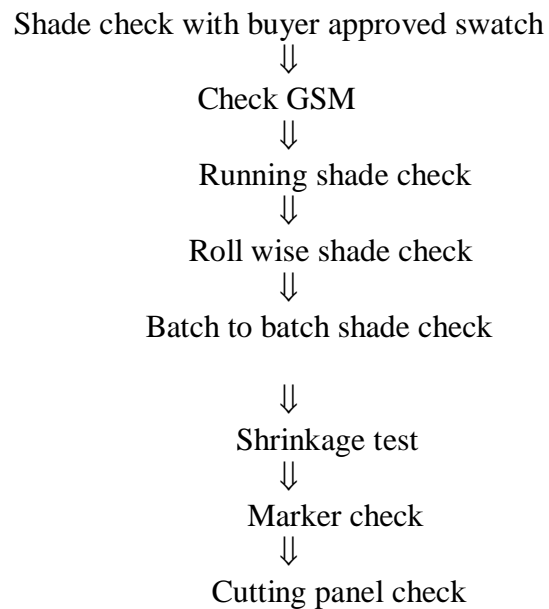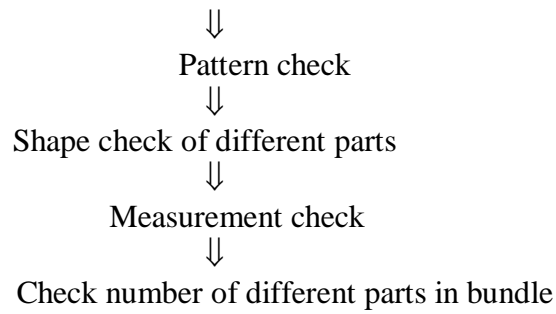
2.7 Defect of Cutting section

- ➢ Miss cut
- ➢ Running shade
- ➢ Matching plies
- ➢ Number &bundling
- ➢ Bowing
- ➢ Notch mark
- ➢ Narrow goods
- ➢ Rugged cut
- ➢ Fabric way
- ➢ Measurement
- ➢ Leaning
- ➢ Tension Loose
- ➢ Bias
- ➢ Alignment

2.7.1 Wrong cutting

- ➢ Un direction wise bundle sticker used in cut pieces.

Remedies

- ➢ Remove the bundle sticker from cut pieces and again attached correctly.

Figure 2.12: Wrong cutting

2.7.2 Number Mistake

- ➢ Number missing of cutting parts.
- ➢ Different parts of same number of cutting parts.

Remedies

- ➢ Cutting parts are rejected by this fault

Figure 2.13: Numbering mistake

2.7.3 Bias cut

- ➢ Fabric line do not match.
- ➢ Cutting machine move un direction wise.

Remedies

- ➢ Fabric line must be match.
- ➢ Knife move marking direction wise.

2.7.4 Shade variation

- ➢ Fluctuation of temperature.
- ➢ Dyes lot variation.
- ➢ Improper pretreatment.

Remedies

- ➢ Use standard dyes and chemical.
- ➢ Maintain the same liquor ratio.

2.8 The cutting sections quality is insure in two stage

➢ **Spreading of quality controls**

Following the point are check during spreading

a. Cutting Table marking.

b. Ends.

c. Fabric Tension.

d. Leanings.

e. Narrow Goods.

f. Fabric Count.

➢ **After cutting quality controls**

After cutting block bundle are checks by the following points.

a. Fabric Miss cut.

b. Fabric Ragged cutting

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c. Pattern checking.

d. Matching Ply.

Chapter 3
Experimental Details

3.1 Experimental Details

I visited for collect information once is another is **"N.A.Z Bangladesh Ltd"** at 23 February 2019. I know how to inspect garments and Collected many information about Garments Cutting section form different sector in marker making, Spreading ,Numbering, sorting, Fabric receiving , fabric relaxation, Fabric cutting ,bundling, various defect and how to reduce it.

3.2 Experimental Data Day 1: Final Cut panel inspection (Cutting) Report

Figure 3.1: Final Cut panel inspection (Cutting) 1st day

3.1 Experimental Details

I visited for collect information once is another is **"N.A.Z Bangladesh Ltd"** at 23 February 2019. I know how to inspect garments and Collected many information about Garments Cutting section form different sector in marker making, Spreading ,Numbering, sorting, Fabric receiving , fabric relaxation, Fabric cutting ,bundling, various defect and how to reduce it.

3.2 Experimental Data Day 1: Final Cut panel inspection (Cutting) Report

Figure 3.1: Final Cut panel inspection (Cutting) 1st day

N.A.Z Bangladesh Ltd.

5,Bishuya Kuribari, Mirzapur,Gazipur-1700

100% CUT PANEL INSPECTION REPORT

Buyer: LI& FUNG   **Date: 21.3.2019**

Style NO	Color	Cutting No	Lot No	Check Qty	Good Qty	Defect Qty	Hole knit	Hole GSM	Hole Shade	Spot	Yarn	Yarn Conta	Knot	Slub	Needle Line Knit	Needle Line Dying	Patta	Thik& Thin	Crease/ Mark Lina	Pin Hole	Star Mark	Others Knit	Others Dying	Others Cutting	Defect%	Remarks
541096	White	128;129	13o5	2712	2637	75	10	17		14											8	2	10	14	2.77%	Recount
5410197	White	735	1185	2208	2168	40	6	8		15													10	1	1.82%	=
5410197	White	737	930	1632	1595	37	4	8		10					4						3		8		2.27%	
5410197	White	732	ciP	186	180	06	2	1		2															3.23%	
5410197	White	733	1215	90	87	3	1	1		1															3.34%	
5410197	White	738	1132	1184	1148	36	6	5		8			3							3	4	2	4	1	3.04%	
5410145 M-3	Grey	3o7	1188	840	820	20	4	5		2					2							2	3	3	2.48%	

Table 3.1 (rotated). Values transcribed per column; some middle rows contain blank cells in the original.

	MAFAU 1925BD / D-White / Y/D	5410144 M-2 / D-Blue / 121,122	541014 M-1 / Pink / 226	5410144 M-K4 / Pink / 219	5410196 / Blue / 316,317, 277	5410196 / White / 126,120	5410196 / White / 125	5410196 / White / 123	5410196 / White / 127	5410196 / White / 127	5410144 M-1 / Grey / 304	5410145 M-2 / Grey / 28	Total
	-	1441	9830	306		219	131	131	133		190	444	31579
	6635	2412	960	996	4524	1836	1248	1416	1512		504	684	30780
	6461	2345	940	972	4424	1784	1205	1376	1473		491	674	799
	174	67	20	24	100	52	43	40	39		13	10	152
	50	13	4	4	15	10	8	5	5		1	4	177
	12	8	6	8	20	10	17	7	9		4	1	138
	12	5	2	3	30	10	10	6	6		2		38
	32						3						
		5	2		4								52
	35	5	2		6							2	15
											2		6
		8	1	1	10	4		3	2				43
			1	2	4	3	2	4	2		1	1	22
	5	1	2	3	6	2	6	6		1	1	70
	3	18	1	4	8	9	3	7	9		3	1	86
	2.63%	2.78%	2.09%	2.41%	2.21%	2.84%	3.45%	2.58%	2.58%	2.58%	2.58%	1.47%	2.53%

Total

Table3.1: Final cut panel inspection 1St day

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Description

This is the stage where the garments Cutting section before complete sewing. First day 21.03.2019 at Thursday I made this Cutting report. This cutting line is fabric cut **LI& FUNG** buyer requirement. Total quantity check is 31579 pieces and then found ok Good quantity 30780 pieces. Type of defects quantity 799 are knit 152 pieces, GSM 177 pieces, spot is 138 pieces, knot 38 pieces, dying is 15 pieces, knit is 52 pieces, pin hole is 6 pieces, Star mark/set up is 43 pieces, kint is 22 pieces, Dying is 70 pieces, cutting is 86 pieces, Here total defects quantity is 799 pieces. At finally total defects 2.53%.

Formula of Defect %

Defect%=Defect Quality/Total Quality*100

3.3 Experimental Data Day 2: Final Cut Panel Inspection (Cutting) Report

Figure 3.2: Final Cut panel inspection (Cutting) Report 2nd day

N.A.Z Bangladesh Ltd.

5 ,Bishuya Kuribari, Mirzapur,Gazipur-1700

100% CUT PANEL INSPECTION REPORT

Buyer: GP   Version No :C2   , Serial No: 16,   Date : 23.3.2019

Style NO	Color	Cutting No	Lot No	Check Qty	Good Qty	Defact Qty	Hole knit	Hole GSM	Hole Shade	Spot	Yarn	Yarn Conta	Knot	Slub	Needle Line Knit	Needle Line Dying	Patta	Thik& Thin	Crease/ Mark Lina	Pin Hole	Star Mark	Others Knit	Others Dying	Others Cutting	Defect%	Remarks
6011013 -004	Blue	134	479	942	912	30	3	5		5	2					5						4	6	5	3.19%	RECOT
6011013 -004	Blue	147,145	512	1620	1560	60	6	25		5	4					3				2			5	8	3.74%	
6421013 -004	Blue	149,150	379	1530	1445	85	20	20		5	3				2	1				5		4	5	18	**5.56%**	
5123136 -501	Indigo	55	CIP	448	438	10	1	1		1						3				1		2	1	2	2.24%	
6421013 -M-2	Black	232,233	600	2637	2575	62	10	15		5					3					4		5	5	12	2.36%	
6421013 -M-2	Black	240	1395	582	565	17	5	6		1												1		4	2.92%	
6011013 -004	Blue	144	512	984	959	25	5	8		3												3		6	2.54%	

Table 3.2: Final cut panel inspection report of 2nd day

Style	Color																	Defect %
6801014-004	Blue	730	479	117	94	23	2	6	9			2		2	2	2		**19.66%**
6801014-004	Blue	728	405	928	891	37	5	6	21					2	3			3.99%
6003047-13	Grey	701 T.R	135	126	9	3	2	1	2					1				**6.67%**
5801070-103	Navy	711	750	212	201	11	5	2		2			2					**5.19%**
6001014-004	Blue	723.725	496	2488	2416	72	14	14	7	6		6	13	12				2.59%
6011071-353	White	201	712	612	598	14	4	3	2	2			1	2				2.29%
6011071-311	Grey	2ol EXT	486	469	17	3	4		3				2	5				3.50%
Total		13721	13249	472	86	117	68	19	2		5	12			14		23	48	78	3.44%

Table 3.2: Final cut panel inspection report of 2nd day

Description

This is the stage where the garments Cutting section before complete sewing. Second day 23-03-2019 at Saturday I made this Cutting report. This Buyer name is "GP". Total quantity check is 13721 pieces and then found ok Good quantity 13249 pieces. Type of defects quantity 472 are knit 86 pieces, GSM 117 pieces, spot is 68 pieces, Yarn missing 19 pieces, Needle line faults knit 5 pieces, dyeing 12piece, pin hole is 14 pieces. Others faults kint is 33 pieces, Dying is 48 pieces, cutting is 78 pieces, Here total defects quantity is 472 pieces. At finally total defects% 3.44%.

3.4 Experimental Data Day 3: Final Cut Panel (Cutting) Report

Figure 3.3 Final Cut panel inspection (Cutting) Report 3rd day

N.A.Z Bangladesh Ltd.

5,Bishuya Kuribari, Mirzapur,Gazipur-1700

100% CUT PANEL INSPECTION REPORT

Buyer: LIDL, Version No: C2 , Serial No: 12,   Date: 24.3.2019

Style NO	Color	Cutting No	Lot No	Check Qty	Good Qty	Defect Qty	Hole knit	Hole GSM	Hole Shade	Spot	Yarn	Yarn Conta	Knot	Slub	Needle Line Knit	Needle Line Dying	Patta	Thik& Thin	Crease/ Mark Lina	Pin Hole	Star Mark	Others Knit	Others Dying	Others Cutting	Defect%	Remarks
321-21-B	Navy	804	196	2040	1990	50	5	10		10	2	1	2	1	1	2				8		2	4	2	2.45%	recot
321721 B	Navy	701	153	496	490	06	1	1		1												1	1	1	1.21%	
321721 B	Navy	805	204	3320	3280	40	3	5	2	4	1	2	1	1	2	1				2		2	4	10	1.21%	
321721 B	Navy	205	136	2640	2605	35	6	9		4												2	3	11	1.33%	
321721 B	Navy	805	CIP	292	287	05	1	1		1	1													1	1.72%	
Total				8788	8652	136	16	26	2	20	4	3	3	2	3	3				10		8	12	25	1.55%	

Table 3.3 Final cut panel inspection report of 3rd day

Description

This is the stage where the garments Cutting section before complete sewing. Third 24.3.2019 at Wednesday. This fabric is cutting Oder the buyer requirement. This buyer name is LIDL. I made this Cutting report. Total quantity check is 8788 pieces and then found ok Good quantity 8652 pieces. Type of defects quantity 136 are knit 16 pieces, GSM 26 pieces, Shade 2 pieces, spot is 20 pieces, Yarn Missing 4 pieces, Yarn Conta 3 Pieces, knot 2 pieces, Slub 2 pieces, Dying is 3 pieces, knit is 3 pieces of needle, pin hole is 10 pieces, Others kint is 7 pieces, Dying is 2 pieces, cutting is 25 pieces. Here total defects quantity is 135 pieces. At finally total defects 1.55%.

3.5 Experimental Data Day 4: Final Cut Panel (Cutting) Report

Figure 3.4 Final Cut panel inspections (Cutting) Report 4th day

N.A.Z Bangladesh Ltd.

5,Bishuya Kuribari, Mirzapur,Gazipur-1700

100% CUT PANEL INSPECTION REPORT

Buyer: ZXY, Version No: C2 , Serial No: 12,   Date: 19.3.2019

Style NO	Color	Cutting No	Lot No	Check Qty	Good Qty	Defect Qty	Hole knit	Hole GSM	Hole Shade	Spot	Yarn Missing	Yarn Conta	Knot	Slub	Needle Line Knit	Needle Line Dying	Patta	Thik& Thin	Crease/ Mark Lina	Pin Hole	Star Mark	Others Knit	Others Dying	Others Cutting	Defect%	Remarks
TSADLLS20	White	308	201	142	132	10	3	4		2													2	1	7.05%	RECOT
TSRAY AS20	Blue	Y/D	-	1061	1045	16	6	5		1		2													1.51%	
TSRAY AS20	Multi	Y/D	-	541	531	10	4	4		1														1	1.85%	
TSRAY AS20	Multi	Y/D	-	1505	1485	20	6	3		5					2	4									1.33%	
TSRAY AS20	R.N.O.F	Y/D	-	2820	2765	55	16	6		15		15												3	1.935	
TS-EMB.PC	Multi	Y/D	-	156	152	4	2	1																1	2.57%	

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TS-EMB.PC	N.R.Whi Y/D	-	54	48	6		6													11.12%	
Total		6279	6158	121	37	23	30	17		2	4							2	6	1.93%	

Table 3.4 Final cut panel inspection report 4th day

Description

This is the stage where the garments Cutting section before complete sewing. Fourth day 19.3.2019 at Wednesday. This fabric is cutting Oder the buyer requirement. This buyer name is ZXY. I made this Cutting report. Total quantity check is 6279 pieces and then found ok Good quantity 6158 pieces. Type of defects quantity 121 are knit 37 pieces, GSM 23 pieces, , spot is 30 pieces, , Yarn Conta 17 pieces, , Dying is 4 pieces, knit is 2 pieces of needle, pin hole is 10 pieces, Others Dying is 2 pieces, cutting is 6 pieces. Here total defects quantity is 121 pieces. At finally total defects 1.93%.

3.6 Experimental Data Day 5: Final Cut Panel (Cutting) Report

Figure 3.5 Final Cut panel inspection (Cutting) Report 5th day

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100% CUT PANEL INSPECTION REPORT

Buyer: M-CARE, Version No: C2 , Serial No: 12,   Date: 25.3.2019

Style NO	Color	Cutting No	Lot No	Check Qty	Good Qty	Defect Qty	Hole knit	Hole GSM	Hole Shade	Spot	Yarn	Yarn Conta	Knot	Slub	Needle Line Knit	Needle Line Dying	Patta	Thik& Thin	Crease/ Mark Lina	Pin Hole	Star Mark	Others Knit	Others Dying	Others Cutting	Defect%	Remarks
TC-755	N-White	Y/D	-	1092	1066	26	16	4		2		1			3	1						1	1	1	2.38%	Recut
TC-755	N-White	Y/D	-	2404	2368	36	6	8		9		7			4								1	1	1.50%	
Tc-749	R-White	Y/d	-	3425	3374	51	19	9		17		2													1.49%	
SF-872	Grey	501	501	168	164	4	1	1		1														1	2.38%	
Sc-507	Grey	01	C/P	126	123	3	1	1																1	2.38%	
Total				7215	7095	120	43	23		29		10			7	1						1	2	4	1.67%	

Table 3.5 Final cut panel inspection report 5th day

Description

This is the stage where the garments Cutting section before complete sewing. Fifth day 25.3.2019 at Monday. This fabric is cutting Oder the buyer requirement. This buyer name is M-CARE. I made this Cutting report. Total quantity check is 7215 pieces and then found ok Good quantity 7095 pieces. Type of defects quantity 120 are knit 43 pieces, GSM 23 pieces, , spot is 29 pieces, , Yarn Conta 10 pieces, , Dying is 1 pieces, knit is 7 pieces of needle, Others defect knit is 1 pice, Dying is 2 pieces, cutting is 4 pieces. Here total defects quantity is 120 pieces. At finally total defects 1.67%.

3.7 Summaries

Table 1 Summaries of Cutting Inspection data

No. Of check	1st day	2nd day	3rd day	4th day	5th day	Total	Individual
Quantity Check	31579	13721	8788	6279	7215	67582	defects
Good Quantity	30780	13249	8652	6158	7095	65934	percentage %
Hole knit	152	86	16	37	43	334	1.05%
Hole GSM	177	117	26	23	23	366	1.15%
Hole Shade			2			2	0.006%
Spot	138	68	20	30	29	285	0.90%
Yarn Missing		19	4			23	0.07%
Yarn Conta	38	2	3	17	10	70	0.22%
Knot			3			3	0.009%
Slub			2			2	0.006%
Needle line knit	52	5	3	2	7	69	0.02%
Needle line Dying	15	12	3	4	1	35	0.11%
Patta	11					11	0.03%
Thik & Thin							
Crease line mark							
Pin-Hole	6	14	10			30	0.09%
Star mark set up	43					43	0.13%
Others knit	22	23	7		1	53	0.16%
Others Dying	70	48	12	2	2	134	0.42%

Others cutting	86	78	25	6	4	199	0.63%
Total Defects	799	472	136	121	120	1648	100%

Table 3.6 Summarized of five days production

Description

This is the cutting panel inspection final summary of 5 days show there. I see their day by day increase and decries of fabric cutting section. In the N.A.Z Bangladesh Ltd. in cutting Line take place in every 20 munities. The cutting panel for a line started at 8.15am, and end 5.00 pm. By this time inspector cutting inspection total calculate finishing quantity, defect quantity percentages.

Chapter 4.0
Result and Discussion

4.1 Result and Discussion

I have analyzed on different stages knit garments production and I found different types of frequently occurs fault might's in various causes. I also found that frequently knitting and dyeing more affects which comparatively higher than other defects.

4.2 Quantity of cutting section first day flow Chart of (3.2)
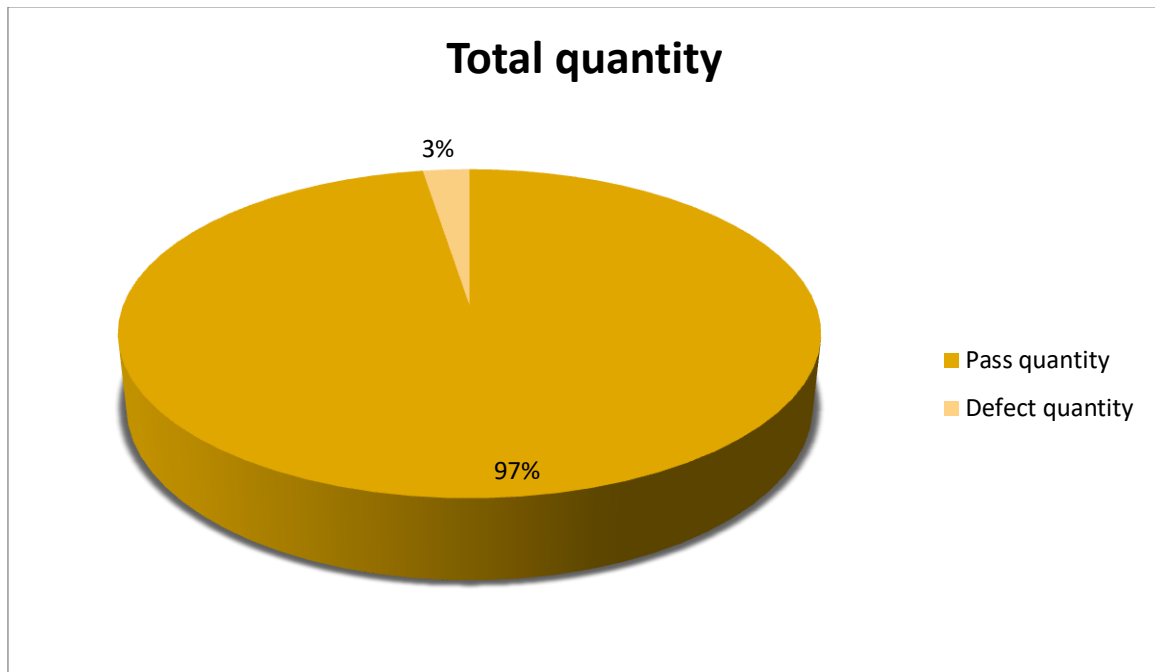
Figure 4.1 Total quality of first day cut panel 3.1

Description

Pass quantity 30780 (97%)

Defects quantity 799 (3%)

Some defects of cutting section flow chart of (3.1)
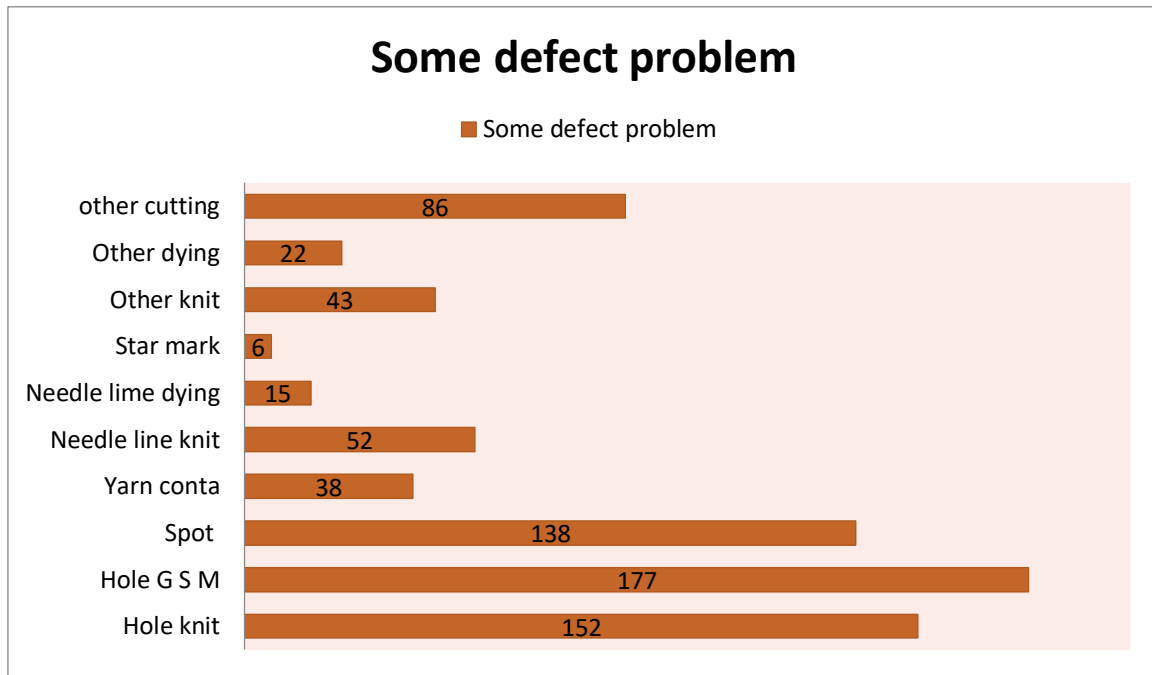
Figure 4.2 Some problem of Cutting Panel 3.1

Description

Some problem in cutting section I found that Hole knit 152 pieces, Hole GSM 177 pieces, Spot138 pieces, Yarn conta 38 pieces, Needle line Kint47 pieces, Needle line dying 58 pieces, Star mark 6 pieces, Other kint 43 pieces, Other Dying 22 pieces, Other cutting86 pieces. Another problem is not found miss cut, uneven pattern spreading.

4.3 Quantity of cutting section Second day flow chart of (3.3)
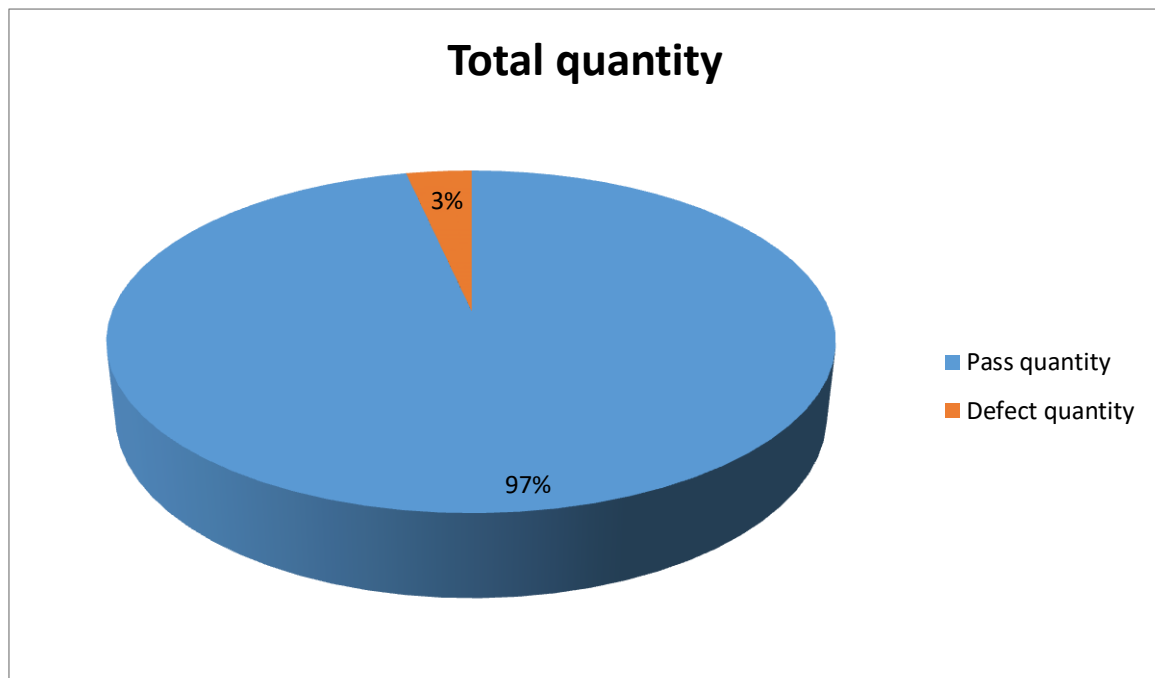
Figure 4.3 Total quantity of second day 3.2

Description

Second day of cutting panel of cutting section total quantity of GP buyer order requirement.

Pass quqntity13249 (97%)

Defect quantity 472 (3%)

Some problems of cut panel of second day flow chart of (3.3)
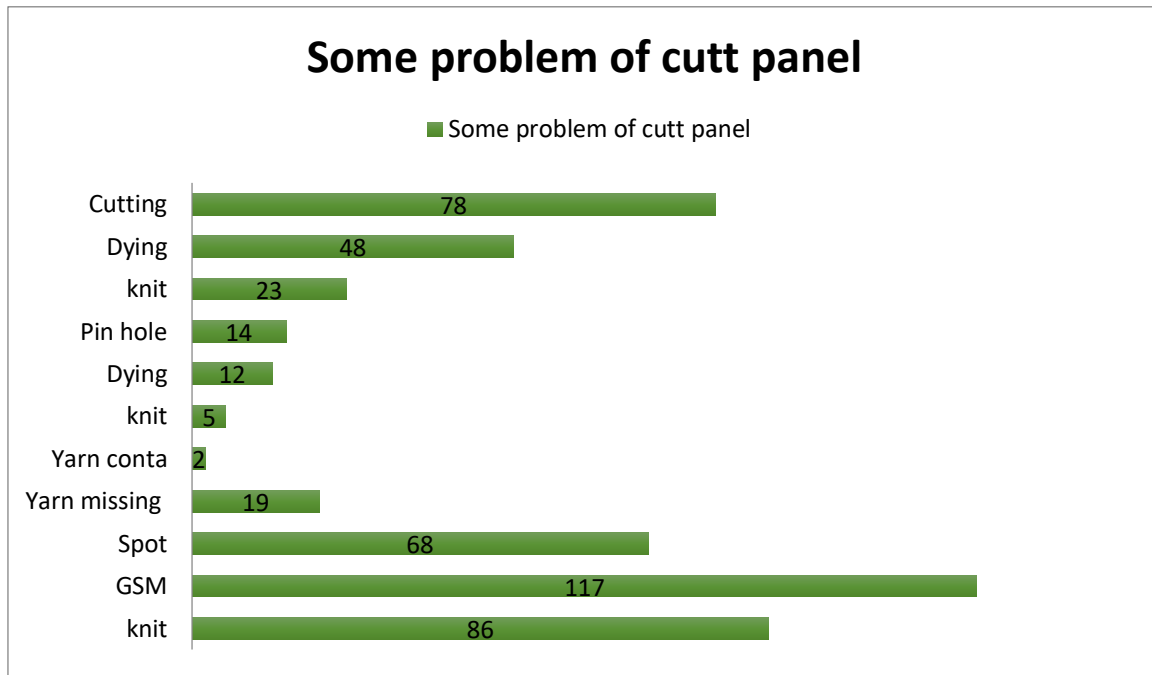
Figure 4.4 Some cutting problem in cut panel second day 3.2

Description

Some problem in cutting panel I found that hole knit 86 piece, hole GSM 117 pieces, Spot 68 pieces, Yarn missing 19 pieces, Yarn conta 2 pieces, needle knit 5 pieces , needle dying 12 pieces, pin hole 14 pieces, others knit 23 pieces, others dying 48 pieces, other cutting 78 pieces.

## 4.4 Quantity of cutting section Third day flow chart of (3.4)

Total quantity

2%

98%

- Pass quantity
- Defect quantity
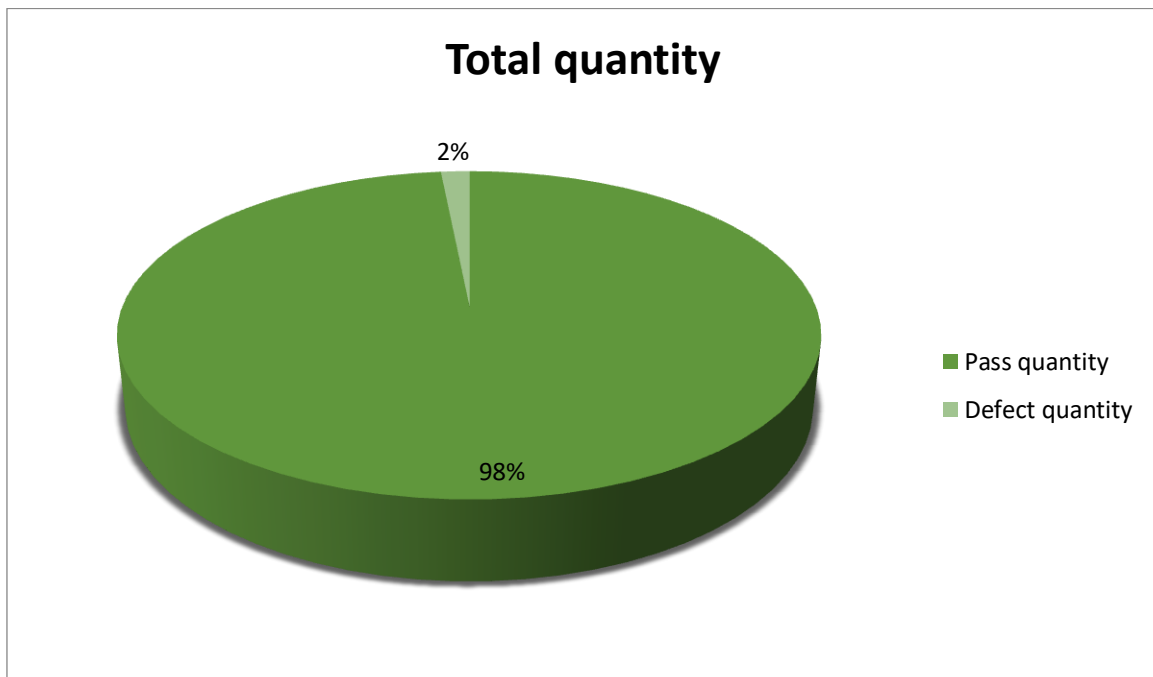
Figure 4.5 Total quantity of cut panel in third day 3.3

Description

Pass quality 8652 (98%)

Defects quantity 136 (2%)

Some Defect of cut panel of third day flow chart of (3.4)
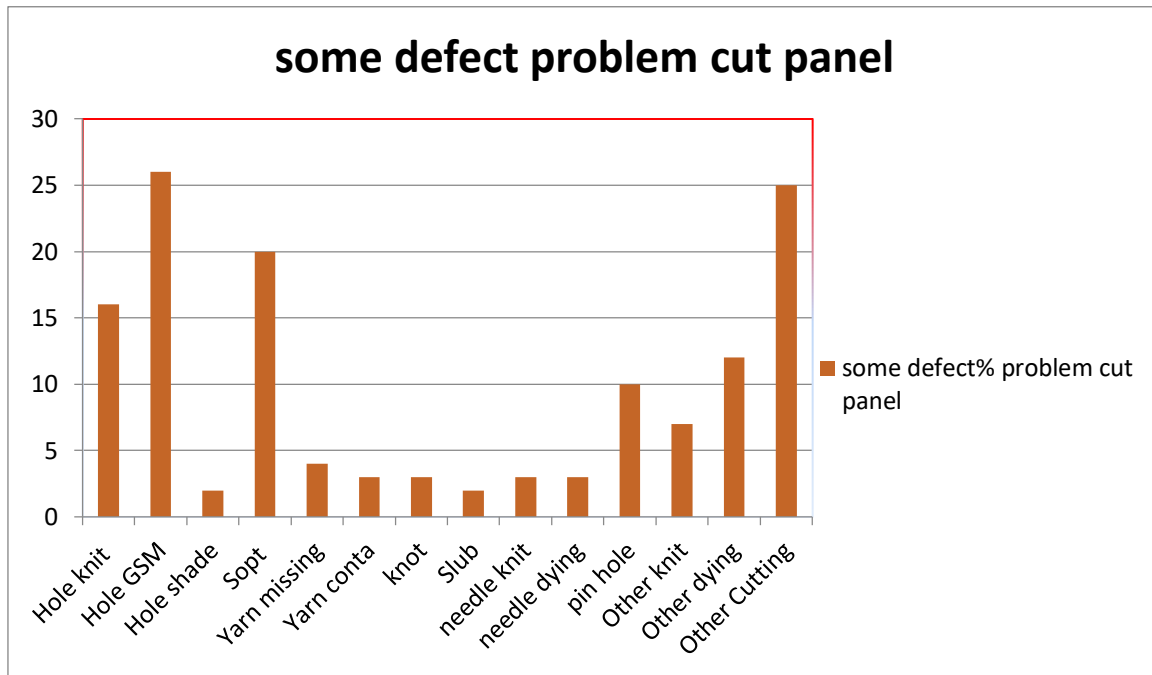
Figure 4.6 Some defects problem cut panel 3.3

Description

Some problem in cutting panel I found that hole knit 16 piece, hole GSM 26 piecs, hole shade2 pieces, Spot 20 pecs, Yarn missing 4 pieces, Yarn conta 3 pieces, knot 3 pieces,slub 2 pieces, needle knit 3 pieces , needle dying 3 pieces, pin hole 10 pieces, others knit 7 pieces, others dying 12 pieces, other cutting 25 pieces.

4.5 Quantity of cutting section fourth day flow chart of (3.5)
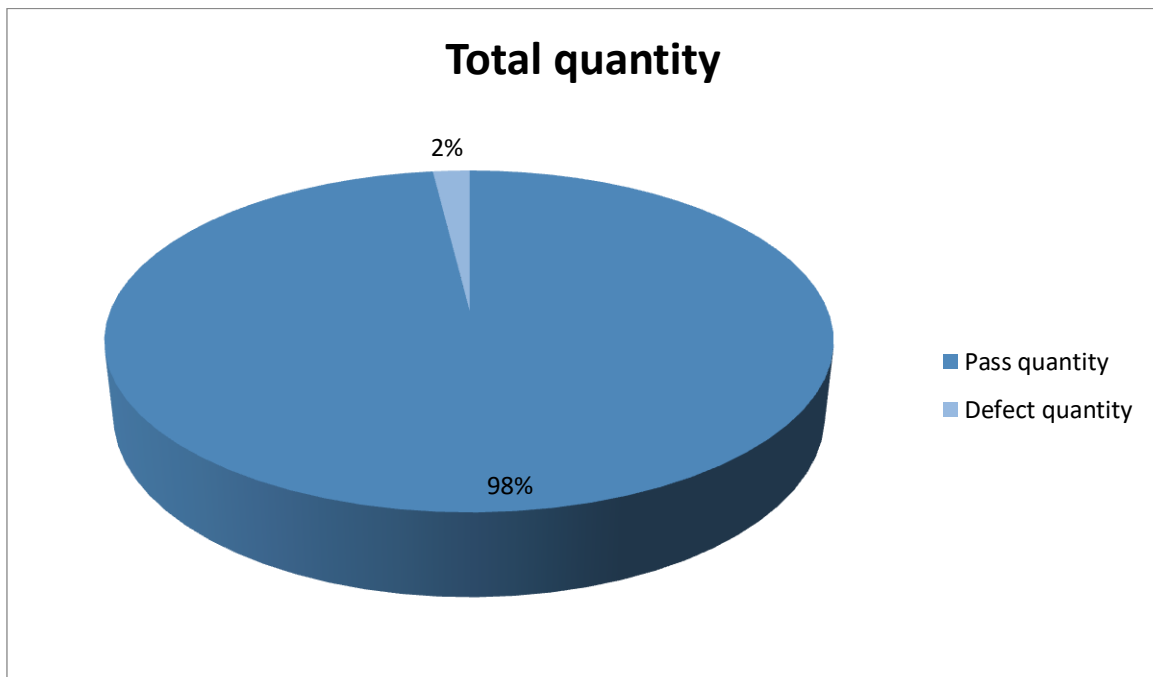
Figure 4.7 Total quantity of fourth day 3.4

Description

Fourth day cut panel total quantity report

Pass quantity 6158 (98%)

Defect quantity 121 (2%)

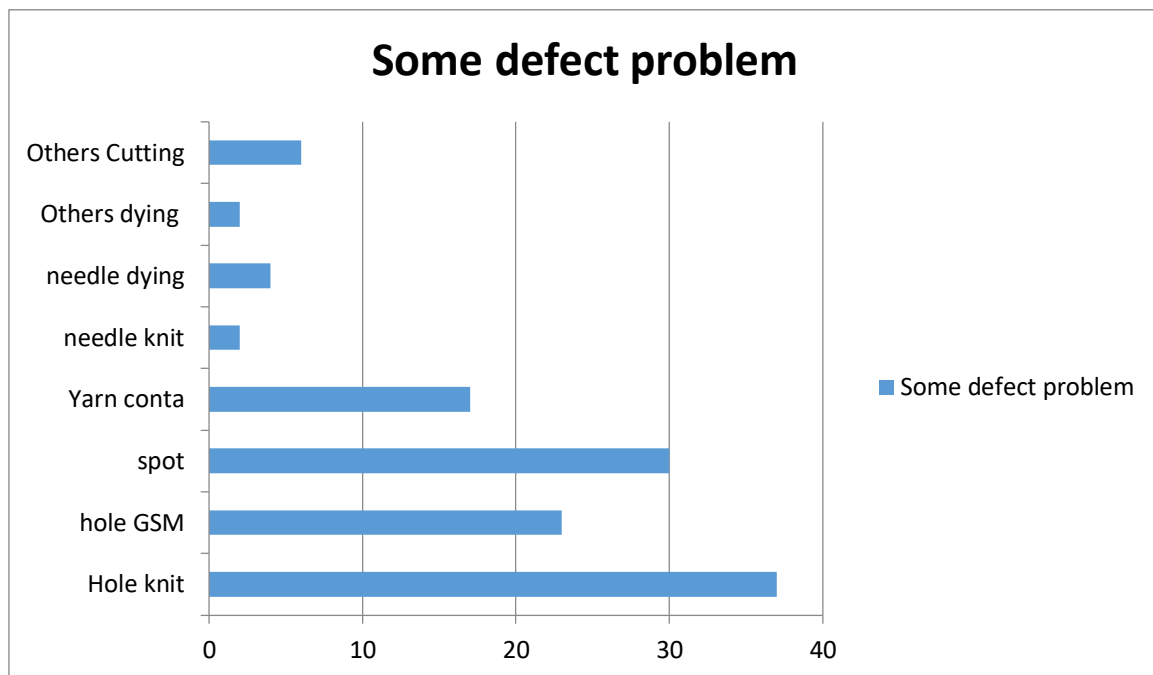**Some defect problem fourth day flow chart of (3.5)**

Figure 4.8 some defect of cut panel fourth day 3.4

Description

Some problem in cutting panel I found that hole knit 37 piece, hole GSM 23 pieces, spot 30 pieces, Yarn conta 17 pieces, , needle knit 2 pieeces , needle dying 4 pieces, others dying 2 pieces, other cutting 6 pieces. Another cutting fault is no folloeed in cutting panel.

4.6 Quantity of cutting section Fifth day flow chart of (3.6)

Total Quantity

2%

98%

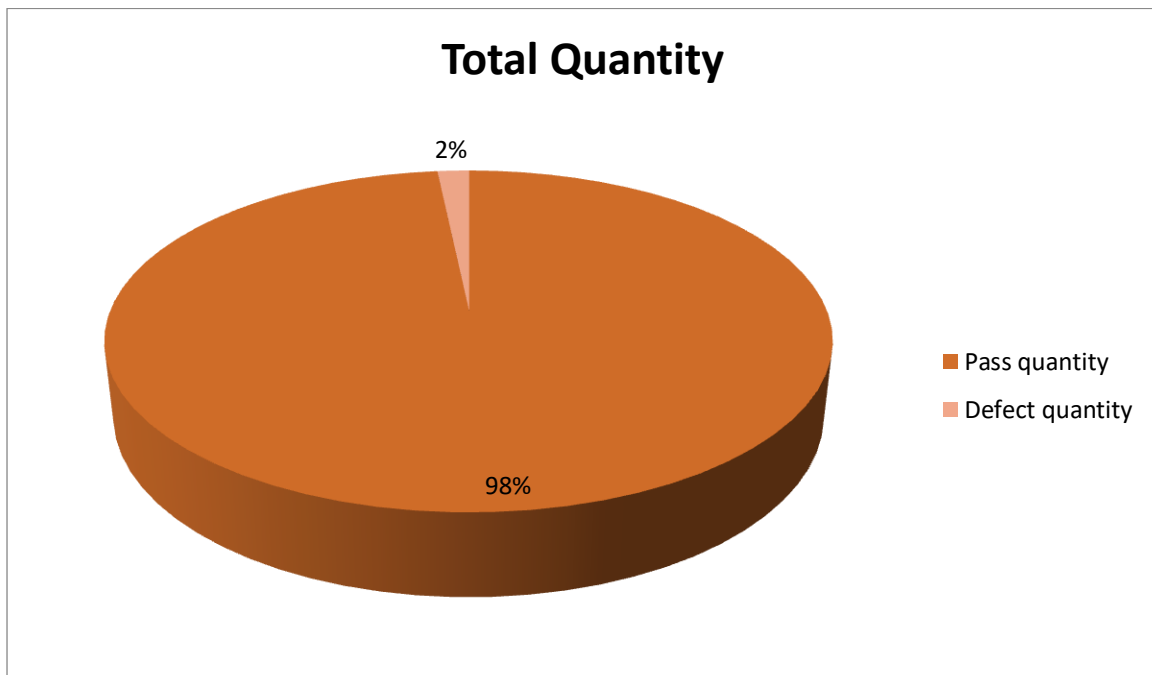- Pass quantity
- Defect quantity

Figure 4.9 Total quantities of fifth days of flow chart 3.5

Description

Fifth day cut panel total quantity report

Check quantity 7215 (50%)

Good quantity 7095 (49%)

Defect quantity 120 (1%)

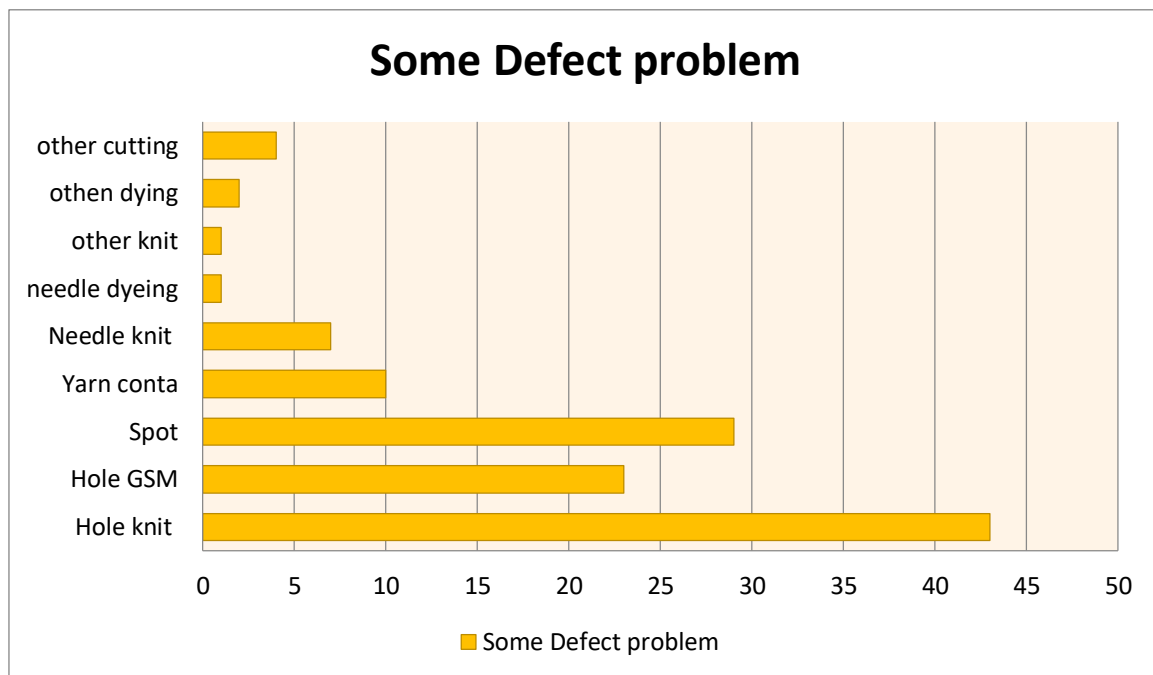**Some defect problem in cut panel flow chart of (3.6)**

Figure 4.10 Some defect problem fifth day 3.5

Description

Some problem in cutting panel I found that hole knit 43 piece, hole GSM 23 pieces, spot 29 pieces, Yarn conta 10 pieces, , needle knit 7 pieeces , needle dying 1 pieces, others knit 1 pieces, others dying 2 pieces, other cutting 4 pieces. Another cutting fault is no folloeed in cutting panel.

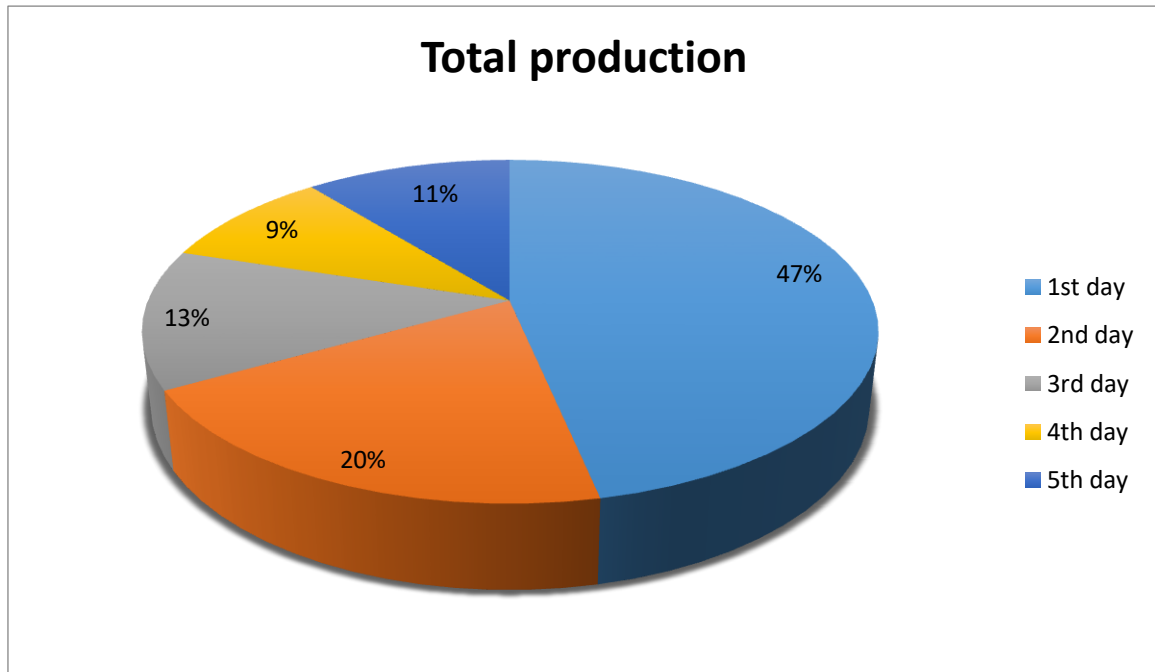## 4.7 Five days production flow chart of (3.7)

Figure 4.11 Graphical view of total production 3.6

Description

This cutting is done N.A.Z Bangladesh Ltd. A cutting section is inspected various Garments, parts and finishing check various in Garments. Five day I found that 1st day of cutting pass good quantity 30780 pieces (47%), 2nd day of cutting pass good quantity 13249 pieces(20%), 3rd day of cutting pass good quantity 8652 pieces(13%) , 4th day of cutting pass good quantity 6158 pieces(9%), 5th day of cutting pass good quantity 7095 pieces(11%).

Chapter 5
Conclusion

5.1 Conclusion

Quality control in cutting section is very important in garments sector. Either it cannot be help to increase sewing and finishing production or it's also a costly project but it maintains the standard of the cutting section. Its increase the finishing production quality and bring the belief of the ultimate user on their product. I am very much thankful to our honorable teacher who has supervised us and help me to take a thesis topic like Investigation on Quality problem in cutting section. To do the job I have investigated in the different section like knitting section, dyeing section and finished fabric. During this period I have found various types of quality problem which is occurred in different section. It helps me to identify these problems, what's the reason behind it and its remedies. I have seen that the major defects in finished fabric Hole Knit, Hole GSM, Hole Shade, Spot, Yarn Missing, Yarn conta , Knot, Slub, Needle line Knit, Needle line Dying, Patta, Thik & Thin, Crease line Mark, Pin Hole, Star Mark / Set Up, Other Knit, Other dying, Other Cutting, Dirty Spots missing. In cutting section I have found Uneven Marker Making, Drill Marks, Improper cutting, miscut, Improper Knife Sharpening, Knife or scissor cut, Ply to Ply Fusion and Pattern Precisions on. I am very much happy that I made the thesis on the quality control in cutting section and I wish that our work will be beneficiary to the garments cutting sector and they will be take more care on their product to maintain quality.

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