Faculty of Engineering
Department of Textile Engineering

REPORT ON

Industrial Attachment
At
MBM Garments Ltd.

M 19 & M 14 Section # 14, Mirpur, Dhaka-1206,
Bangladesh.

Course Title: Industrial Attachment

Course Code: TE-410

Submitted By

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Supervised By

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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.

Advance in Apparel Manufacturing Technology

Duration: From September 25, 2018 to November 15, 2018.

Letter of Approval

December 07, 2018

To

The Head

Department of Textile Engineering

Daffodil International University

102, Shukrabad, Mirpur Road, Dhaka 1207

Subject: Approval of Industrial Attachment Report of B.Sc. In TE Program

Dear Sir

I am just writing to let you know that this report titled as "Industrial Attachment" has been prepared by the student bearing ID 151-23-4174 is completed for final evaluation. The whole report is prepared based on the factory data with required belongings. The student is directly involved in his industrial attachment 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 report and consider it for final evaluation.

Yours Sincerely

Mr. Md. Mominur Rahman

Assistant professor

Department of Textile Engineering

Faculty of Engineering

Daffodil International University

DECLARATION

I hereby declare that the work which is being presented in this report entitled, "Industrial Attachment" is original work of my own, 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.

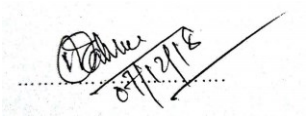
…….

Name: Md. Liton Ahmed

ID: 151-23-4174

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.

Supervisor:



Mr. Md. Mominur Rahman

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ACKNOWLEDGEMENT

Firstly I would like to thanks to almighty ALLAH for his kind blessing for complete of this internship report successfully.

I would like to thank our honorable course teacher & supervisor, **Mr.Md. Mominur Rahman, Assistant professor,** at Department of Textile Engineering, Daffodil International University for his helps, guidance and encouragement throughout the progress of the internship report. I am grateful for his kind advice and instructions.

I would like to thank Mr. Wasim Rahman Managing Director, MBM Garments Ltd. and Md. Mamunor Rahman Head of HR Department, MBM Garments Ltd. for giving me such that opportunity. They gives me guide lines, suggestions & inspiration which very important for me.

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Chapter 1

Executive Summary

I performed my internship on **MBM Garments Ltd**. By achieving practical knowledge from the industrial attachment it is possible to apply the theoretical knowledge in the technical field. For any technical education, practical experience is almost equally necessary in association with the theoretical knowledge. The industrial attachment is the most effective process of achieving the practical experiences. I performed my internship on **MBM Garments Ltd**. which is situated on M 19 & M 14 Section # 14, Mirpur. Dhaka-1206, Bangladesh. The length of my training period during nearly two months. I was joined my training on **September 25, 2018** and it finished on **November 15, 2018**. In a short span the company received the recognition as one of the market leaders. The factory has Sampling, Cutting, Sewing, Ironing & Finishing, Quality and IE section etc. All of this sections help us to improve my knowledge.

Chapter 2

Information about Factory

2.1 Introduction

By means of the practical knowledge it's possible to apply the theoretical knowledge in the practical field. For any technical education practical experience is almost equally important in association with the theoretical knowledge.

The industrial attachment is the process which builds understanding skills and attitude of the performer, which improves his knowledge in boosting productivity and services. University education provides me vast theoretical knowledge as well as more practical attachment, despite all these industrial attachment help me to be familiar with the technical support of modern machinery, stillness about various operation stages.

It also provides me sufficient practical knowledge about production management, productivity evaluation, work study, efficiency, industrial management, production planning and control, production cost analysis, inventory management, purchasing, utility and maintenance of machinery and their operation techniques etc. the above mentioned cannot be achieved successfully by means of theoretical knowledge only. This is why it should be accomplished with practical knowledge in which it is based on industrial attachment makes me reliable to accustomed with the industrial atmosphere & improve courage & inspiration to take self-responsibility.

I have prepared this report as required in completion of my attachment course in regarding guideline given by the university authority which will lead to a strong guideline and milestone for our future carrier.

2.2 History of the Company

1983

Chairman Mahmudur Rahman began the journey with 150 machines in Mohakhali area of Dhaka.

1988

Shifted to own purpose built facility in Mirpur. One of the first of its kind in Bangladesh at the time.

1988

Also first factory in Bangladesh to introduce free lunch to all the employees and workers.

1990

Was also the first unit to have its own washing plant in Bangladesh.

2008

Company was taken over by 2nd generation Mr Wasim Rahman as Managing Director to begin the second wave of growth.

2008

First expansion project, acquiring another new 08 lines manufacturing unit in Gazipur

2009

Began new sourcing unit in order to expand range of products offered to customers.

2012

In early 2012 moved to purpose built state of the art facility built on lean principles with 14 production lines

Today, MBM operates from both its production units, optimally utilizing its 25 production lines and workforce of around 5000 well trained and highly motivated employees. We have an annual turnover of around US$ 45 million and a capacity to produce 60,000 dozen woven garments. The company is not only compliant of the requirements of the COC but also maintains high standards of green production and social responsibility.

2.3 Funder and Director

The factory was founded by **Mr.** Mahmoud Rahman & Name of Managing Director is Mr. Wasim Rahman. It was established 33 years ago, it has earned very good reputation for its best performance over any other ready-made garments.

2.4 General Information about Factory

M 19 & M 14 Section # 14, Mirpur. Dhaka-1206, Bangladesh.

In 1983 chairman Mahmudur Rahman began the journey with 150 machines in Mohakhali area of Dhaka. In 1988 shifted to own purpose built facility in Mirpur. One of the first pioneer garments factory in Bangladesh at that time and at the same time one of the first factory who introduce free lunch to all the employees and workers in 1988. In 1990 was also the first unit who have its own washing plant in Bangladesh. In 2008 company was taken over by 2nd generation Mr. Wasim Rahman as a Managing Director to begin the 2nd wave of growth and his first expansion project after taking over was acquiring another 8 lines manufacturing unit in Gazipur present name of the company is Cutting Edge Industries Ltd. In 2009 began new sourcing unit in order to expand new range of products offered to customers.in early 2012 moved to purpose built state of the art facility built on lean principles with 14 production lines.

Today MBM operates from both its production unit, optimally using its 25 production lines and workforce of around 5000 well trained and highly motivated employees. MBM have annual turnover of around US$53 million and a capacity to produce 75000 dozen Woven Garments. The company does not compliant only the requirement of COC but also follow and maintain high standard of green production and social responsibility.

2.5 Lay out of the factory

Figure 2.5 Lay out of the factory

2.6 Organogram

The organogram of the administration is as follows:

Chairman or Managing director

↓

Director

↓

Executive director

↓

General Manager

↓

Production manager

↓

Production officer

↓

Supervisor

↓

Senior operator

↓

Operator

↓

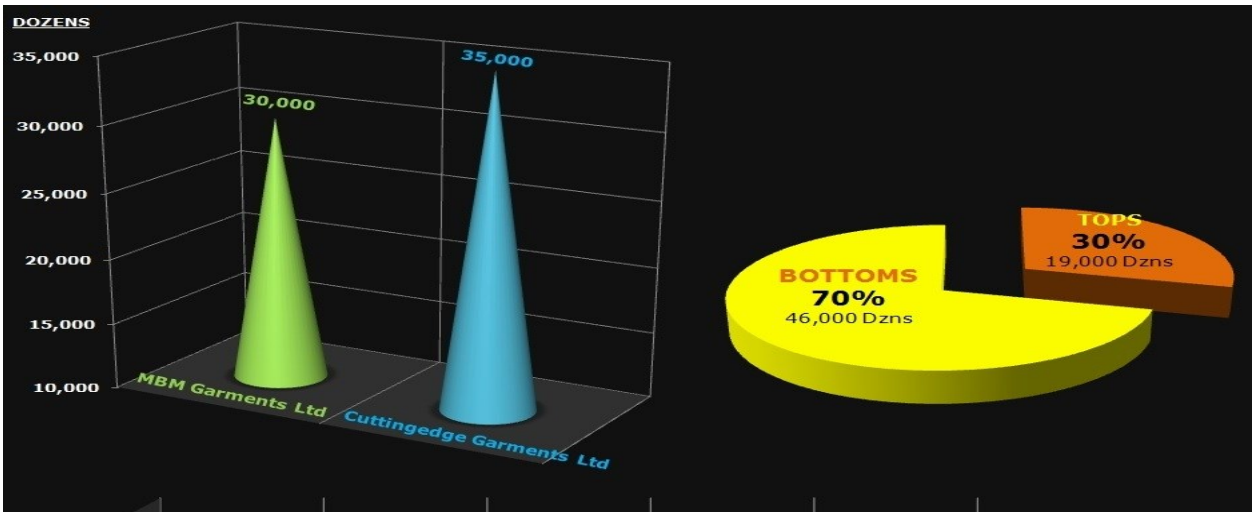
Helper

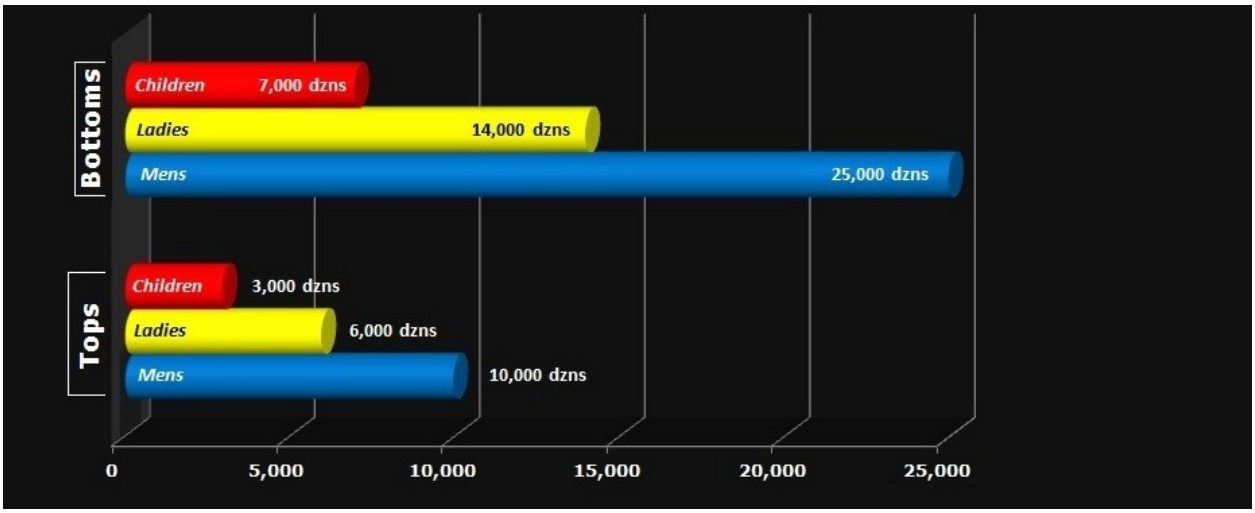
2.7 Sister Concerns

- Cutting edge Garments Ltd
- MBM Washing
- Cutting edge Industries LLC

2.8 Production Capacity

MBM Group has the capacity to produce 65,000 Dozens woven garments a month combining both the units.





2.9 Brief Profile of factory

Name	**MBM Garments Ltd**
Group Affiliation	MBM Group
Business Type	Garment Manufacturing andExporting
Year Establishment	1988
Location	Dhaka
Number of Production Line	11
Work force	2000
Production per month	350000pcs
Preferred Bank For Trading	AB Bank, Dhaka Bank
Status	Private Ltd Company

Corporate Office	M19 & M14, Section-14, Mirpur Dhaka-1206, Bangladesh. Phone- +88 02 8011790, +88 02 801173
Business Line	All woven. Men's, Ladies, Children Tops and Bottoms. High-end Dress Shirts, Formal Pants and Uniforms
Export Outlet	Germany, UK, France, Italy, USA

2.10 Major Buyers

- **LEVI'S**
- **DENIZEN**
- **5.11 TACTICAL SERIES**
- **IKEA**
- **DOCKERS**

Logo:

2.11 Certification & Awards

- Received National Export Trophy SIX times.
- Only factory in Bangladesh, to have JC Penney, self-audit certification.
- 15 Years of experience working with LEVI. Received 4 star award from Levi Strauss, for five years.
- Best Customer Award from AB Bank 2011-2012.

2.12 Mission of the Company

2.12.1 Mission Statement:

To keep setting an example by excelling in responsible and efficient operations focused on the creation of value.

Responsibility to customers:
The primary reason for us to exist is to service our customers. We have to ensure that we are providing the best value to our customers (external and internal) by giving them.

Responsibility to Fellow Associates:
A company is only as good as its employees. Although we exist to service our customers, we exist because of our employees and associates. For this we have to ensure the following to internal stakeholders of the company.

Responsibility to our community and environment:
Involvement in CSR activities that will improve the lifestyle and conditions of our own people and those of our external community. Efforts need to be made in controlling wastage and use of natural resources such as water, gas, and energy. As well as responsibility in disposal and proper reutilization of industrial waste.

2.13 Vision of the Company

To become the most successful, respected, innovative and highly reputed manufacturer of Garment in the International market by producing top quality product which conforms and surpasses the customer expectation.

2.14 Key products

Chapter 03

Description of the Attachment

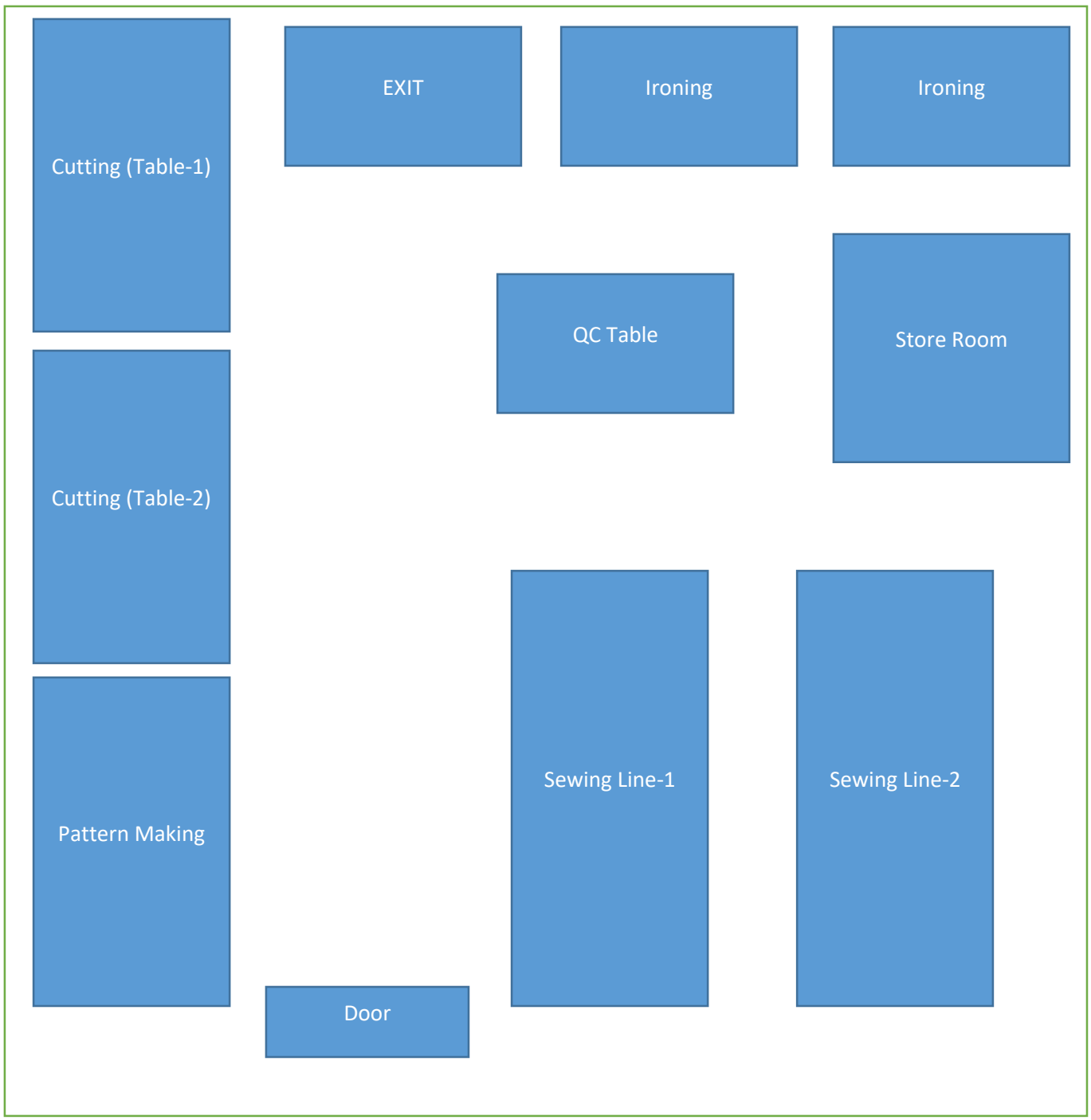
3.1 Sample Section

Garment sample section is very important department in apparel manufacturing process. Garment samples are inevitably important and are developed tested before starting the bulk production, because the buyers generally places the order after they are satisfied with the quality of the samples. The samples decide the ability of an exporter. If the samples are of good quality and with reasonable price naturally the buyers will be forced to place the order.

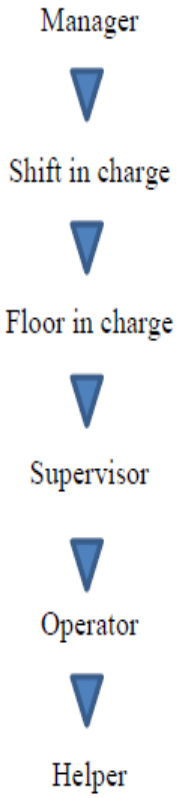
Sample section makes different types of sample. Such as Proto sample, Fit sample, Size set sample, Pre-production sample, Production sample, Shipment sample.

Figure 3.1 Sample section

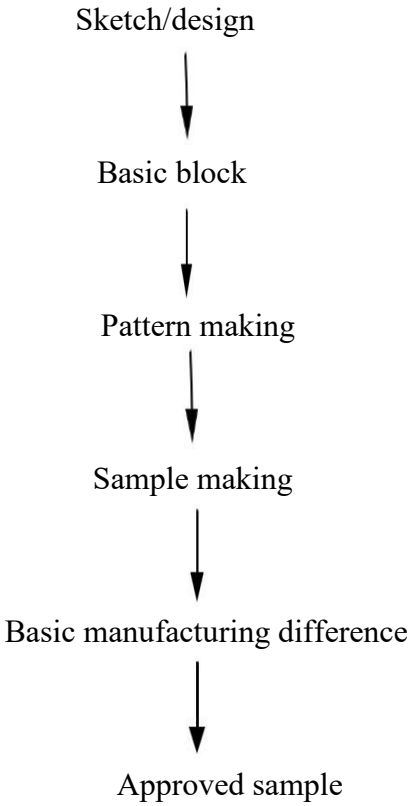
3.1.1 Sample section layout



3.1.2 Organogram



3.1.3 Sample section works according bellow sequence-



3.1.4 Machineries

- Cutting Machine
- Plain machine
- Over lock machine
- Flat lock machine
- Chain stitch machine
- Feed of the arm machine
- Button hole machine
- Button attaching machine
- Eyelet machine

3.1.5 Major operations carried out by the section

- Fabric sent to wash
- Fabric spreading
- Fabric Cutting
- Fabric Inspect

3.1.6 Quality control

- Fabric inspection is done
- Cutting part checked

3.2 Cutting Section

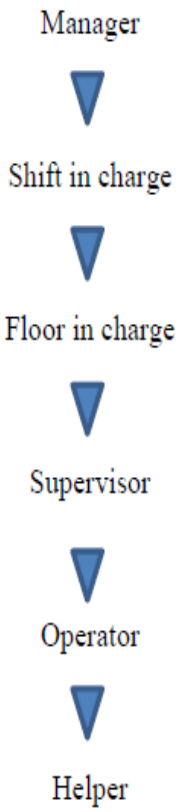
Cutting section mainly make the marker & cut the fabric lay for making the garments. They make marker before fabric spreading. After spreading fabric they cut the fabric and make bundles of them.

Figure 3.2 Cutting section

3.2.1 Cutting Section Layout

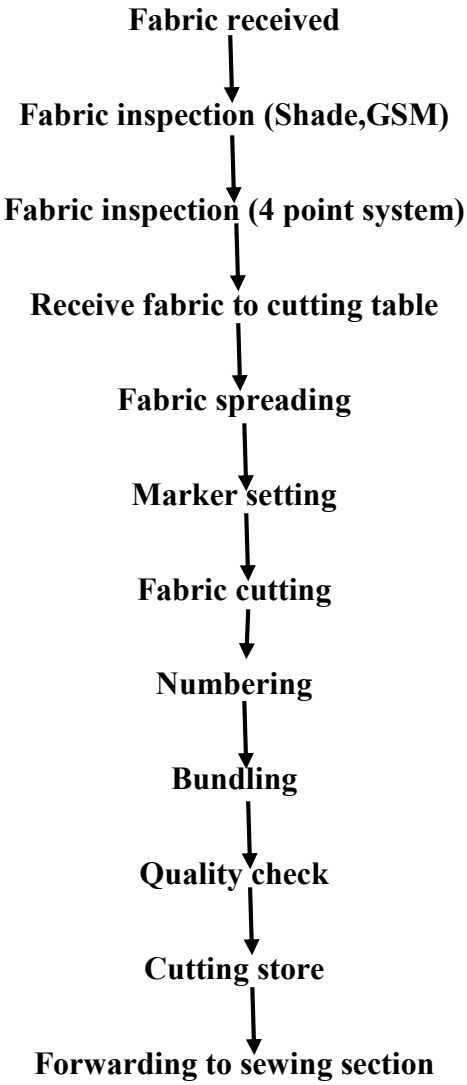
Figure 3.2.1 Cutting section layout

3.2.2 Organogram



3.2.3 Cutting section flow chart

The definition of cutting is very complex. In garments industries fabric is cut from lay and spreading with accuracy and properly which is termed as fabric cutting. Marker outline is used to cut the fabric. Fabric cutting is very important as if something is cut in wrong way, cannot be rectified.



3.2.4 Marker Making

Markers are layout of pattern pieces for fabric cutting. Marker is mainly made by two ways. Manual marker making & computerize marker making. In this factory they are making marker manually.

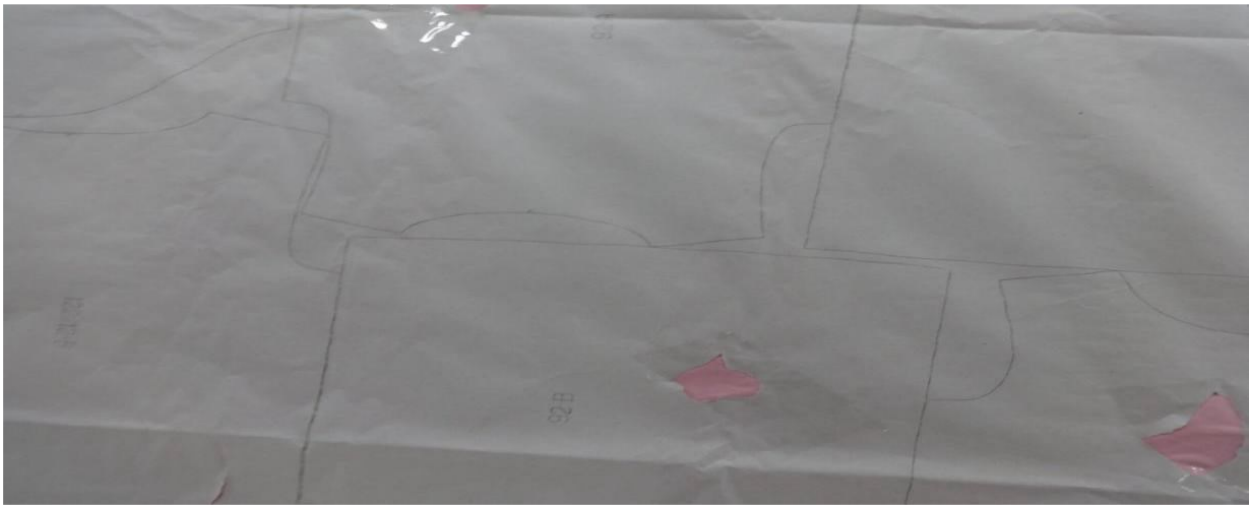


Figure 3.2.4 Marker paper

3.2.5 Fabric Spreading

Fabric spreading means spread the fabric lay one after another. It is mainly done by manually.

Figure 3.2.5 Fabric spreading

3.2.6 Cutting

Cutting section mainly cut fabric lay according to the marker. Fabric lay is cut manually with the help of cutting machine. When the fabrics are received from the dyeing and finishing section, cutting section checked the fabric, so that faulty fabrics can't be create any kind of problem during or after cutting. The fabric is inspected for checking by the quality inspector of the cutting section.

Figure 3.2.6 Cutting

3.2.7 Numbering

After cutting the fabric lay the cut part is numbering according their size. They divided different parts of garments like body part, sleeve, collar, cuff etc.

3.2.8 Machineries

- Cutting Machine
- Scissors

3.2.8.1 Straight knife cutting machine

Machine name: K.M company cloth cutting m/c

Model	: K.M KS_AUV
Origin	: JAPAN
Type	: Heavy duty industrial cloth cutting m/c self-sharpening
Dimension	: 8 inch width ×11 inch length ×24 inch height
Weight	: 33.5 lb
Current	: A.C (3.3/2.6 amps)
Speeds	: 3000/3600

Figure 3.2.8.1 straight knife cutting m/c

3.2.9 Major operations carried out by the section

- Marker making
- Fabric spreading
- Fabric cutting
- Fabric cut part check

3.2.10 Quality control process

- Fabric inspection is done before cut the fabric
- Grain line maintain during cutting
- Cut the fabric according to pattern
- Cut fabric according to design

3.3 Sewing Section

Sewing section mainly joined different parts of garments by sewing with the help of different sewing machines.

Figure 3.3 Sewing section

3.3.1 Sewing Section Layout plan

Here they make a list of the no of machine and types of machine for making the garments. Line balancing is done in this time. They set up machine for high productivity according to easy process sequence.

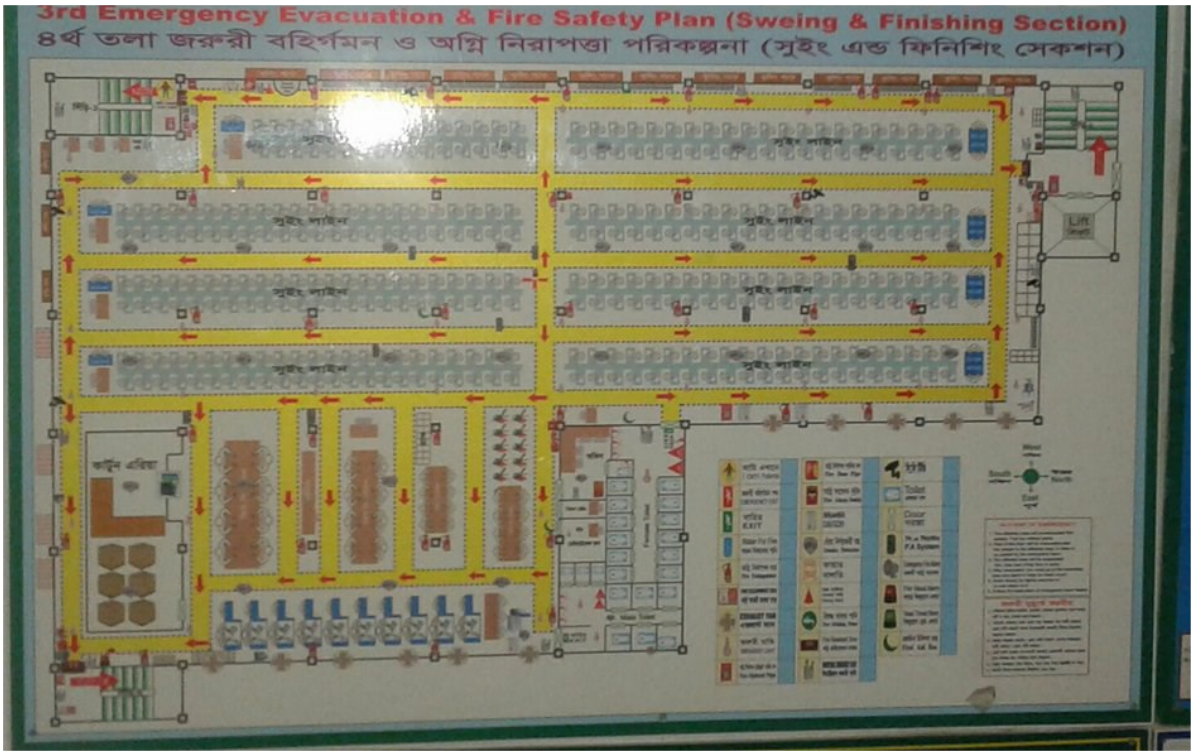
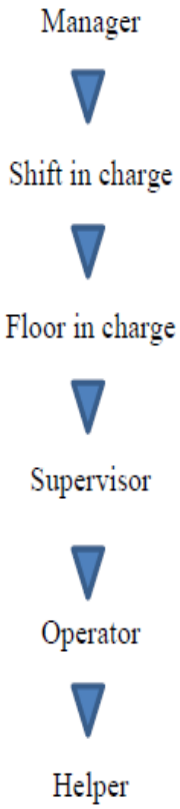
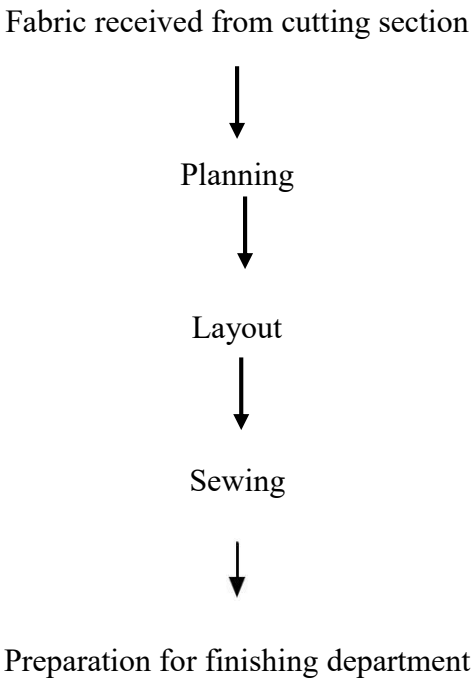


Fig: 3.3.1 Sewing section Layout

3.3.2 Organogram:



3.3.3 Process sequence of sewing section in garments industry



3.3.4 Sewing machines

There are different types of sewing machine for different joining purpose of a garment.

The machines which are used in sewing section.

- Plain machine
- Over lock machine
- Flat lock machine
- Chain stitch machine
- Feed of the arm machine
- Button hole machine
- Button attaching machine
- Eyelet machine

3.3.4.1 Plain machine

Figure 3.3.4.1 Plain machine

Brand name: JAK

Model: JK – SHIRLEY IIE

Origin: China

Needle type: DB

Stitch type: Lock stitch

Motor type: Servo motor

RPM: 400-4000

Properties:

- One needle
- Two threads
- Bobbin
- Thread tensioner
- Thread guide
- Stitch controller
- Back stitch lever
- Hand wheel
- Feed dog
- Throat plate

Application:

- Bottom hem
- Side join
- Neck join
- Pocket join

3.3.4.2 4 Thread over lock machine

Figure 3.3.4.2 4 Thread over lock machine

Brand name: JUKI

Model: JUKI MO – 6714DA

Origin: Japan

Needle type: DC

Stitch type: Chain stitch

Motor type: Servo motor

RPM: 400-8000

Properties:

- 2 needle for 5 thread
- 1 needle for 3 thread
- 4 tensioner
- 2 knife

Application:

- Shoulder join
- Cuff join
- Side seam
- Color piping

3.3.4.3 Flat lock machine

Figure 3.3.4.3 Flat lock machine

Brand name: PEGASUS WROOV

Model: J W264P –O1GB

Origin: Japan

Needle type: YA

Stitch type: Chain stitch

Motor type: Clutch motor

RPM: 2600

Properties:

- 2 needle for 5 thread
- 1 needle for 3 thread
- 4 tensioner
- 2 knife

Application:

- Body hem
- Sleeve hem

3.3.4.4 Chain stitch machine

Properties:

- One thread is used to interconnect each loop

Application:

- Pocket opening
- Basting
- Decoration purpose

3.3.4.5 Feed of the arm machine

Figure 3.3.4.5 Feed of the arm machine

Brand name: JACK

Model: JK – SHIRLEY IIE

Origin: China

Needle type: TV×64 , DV ×57

Stitch type: Chain stitch

Motor type: Clutch motor

RPM: 400-2800

Properties:

- 2 needle for 5 thread
- 1 needle for 3 thread
- 4 tensioner

Application:

- Shoulder join
- Neck piping

3.3.4.6 Button hole machine

Figure 3.3.4.4 Button hole machine

Brand name: JUKI

Model: MO-6700D

Origin: Japan

Needle type: DP X 5

Stitch type: Chain stitch

Motor type: Clutch motor

RPM: 4000-8000

Properties:

- One needle
- One knife

Application:

- Make different types of button hole.

3.3.4.7 Button attaching machine

Figure 3.3.4.7 Button attaching machine

Brand name: JUKI

Model: LK-1903B-BS

Origin: Japan

Needle type: DB x 17

Stitch type: Lock stitch

RPM: 400-3600

Properties:

- One needle

Application:

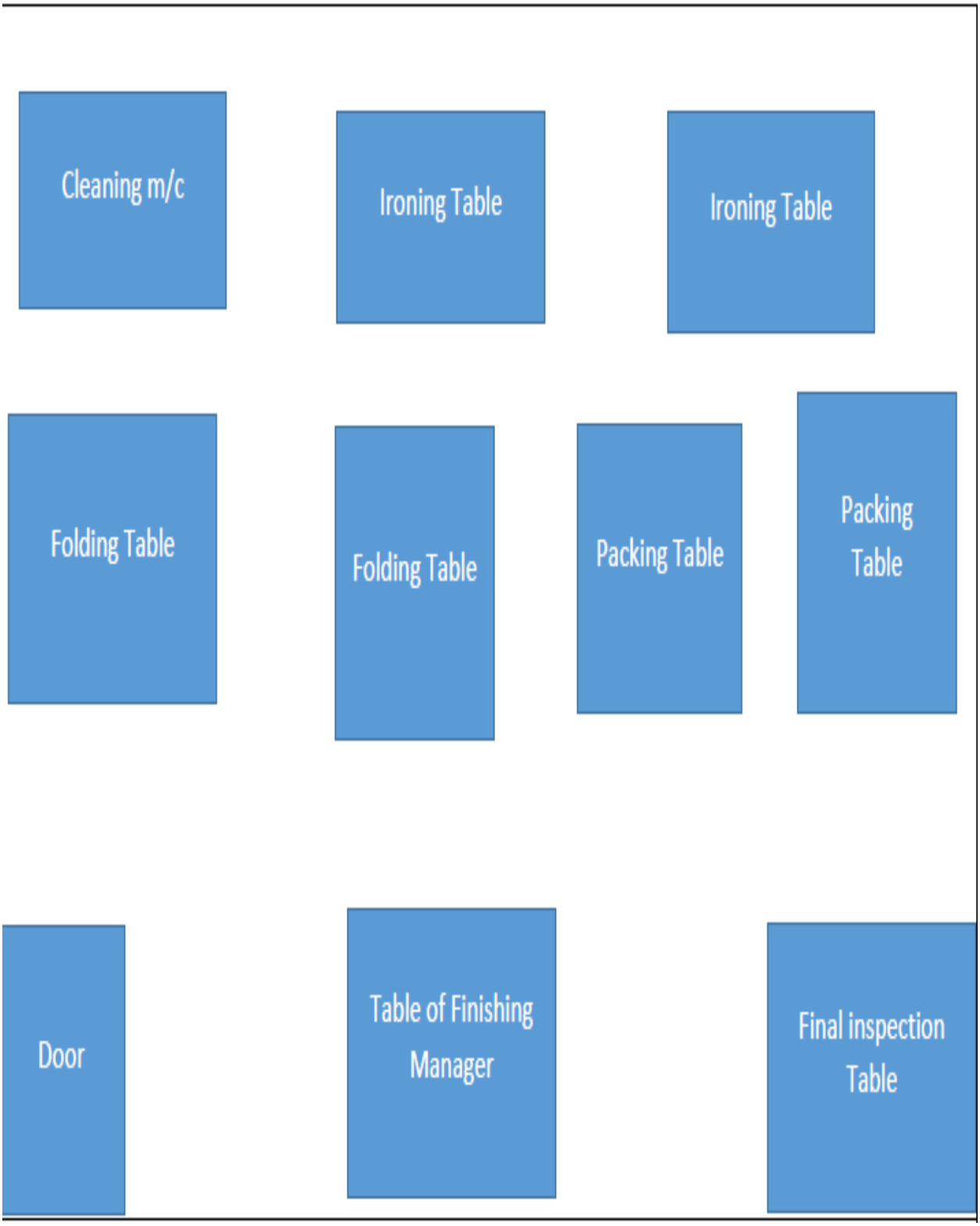
- ❖ Attached different types of button.

3.4 Finishing Section

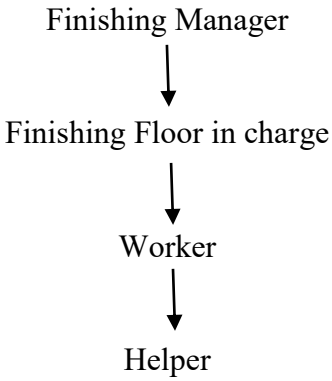
Generally in finishing section ironing, packing, folding, checking, and other required action is done. Finishing section need to work on perfect work during packing according to buyer requirements. Size wise and assortments need to be perfect.

Figure 3.4 Finishing section

3.4.1 Layout

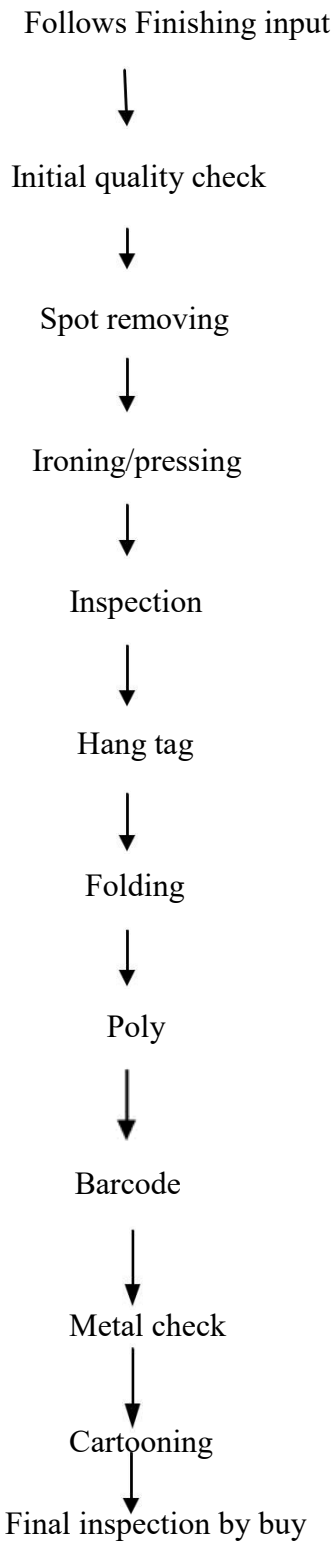


3.4.2 Organogram



3.4.3 Process flow chart

Finishing is the last processes to making apparel. The finishing process sequences are as



3.4.4 Machineries

- Cleaning Machine
- Iron machine
- Tag gun
- Thread sucker m/c

3.4.5 Major operations

3.4.5.1 Cleaning

Cleaning is the process by which extra sewing thread and various unnecessary things are removed from the garments body. Air suction machine is use to remove this. Extra part of sewing thread is cut from the garments in this section.

3.4.5.2 Checking

Prepared garments are checking by metal detector for detect the metal**.** If any kinds of metal found into the garments, then the machine stops and the garments are checked to remove the metal.

3.4.5.3 Ironing

Ironing is the use of a heated tool (an iron**)** to remove wrinkles from fabric. The heating is commonly done to a temperature of 180–220 °Celsius, depending on the fabric. Ironing works by loosening the bonds between the long-chain polymer molecules in the fibers of the material. While the molecules are hot, the fibers are straightened by the weight of the iron, and they hold their new shape as they cool. Some fabrics, such as cotton, require the addition of water to loosen the intermolecular bonds.

Figure 3.4.5.3 Ironing

3.4.5.4 Tagging

After ironing tags are attached with the garments manually as per buyer's requirements. If the tags are needed to be printed, a sticker is made with that.

3.4.5.5 Folding

Garments is folded in this section. Folding is done by automatic system or manually. In this factory they folded the garments manually according to buyer's requirements.

The MBM Garments Ltd. Uses following folding styles

- Flat folding
- Roller folding
- Crunching folding

3.4.5.6 Packing and packaging requirements

Packing is done to ensure the cartoon is enough strong and protect the garments from different dirt & dust. Packing is done according to buyer's instruction.

The MBM Garments Ltd. Using following four types of packaging systems-

- Solid color & solid size
- Solid color & assort size
- Assort color& assort size
- Assort color & solid size

3.4.5.7 Final inspection

To assure the quality of the garments final inspection is done. To remove the faulty garments after apparel preparation, before packing this shorts of inspection is done. In the tine of final inspection defects are identified and if possible garments are again send to sewing section to solve the problems.

3.4.5.8 Defects in garments

In textile and apparel industry product quality is calculated in the terms of quality and standard of fibers, color, yarns, fabrics, design and the final finished of the garments. Quality control in terms of garments manufacturing, pre-sales and post-sales services delivery, pricing, etc. are essential for any garments manufacturer, trader, or exporter. Certain quality related problems often seen in garments manufacturing like sewing, color, sizing, or garment defects should never be over looked.

3.4.5.8.1 Defect classification

Three types of defects considered in AQL.

3.4.5.8.1.1 Critical Defects: Those are the products which are unsafe or hazardous for the end user or that contravene mandatory regulations.

3.4.5.8.1.2 Major defects: Those can result in the product's failure, reducing marketability, usability.

3.4.5.8.1.3 Minor Defects: Those are not affect products marketability or usability but represents workmanship defects that make the product fall short of defined quality standard.

3.4.5.9 Labels

The identification of apparel is called label. There are various types of label like main Label and Size label.

3.4.5.9.1 Main Label

- Main label indicate the Trade name of Apparel.

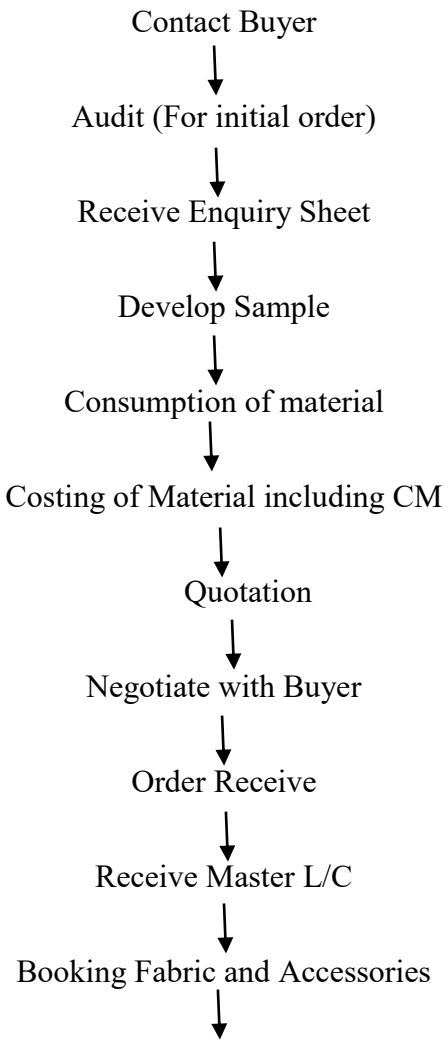
3.4.5.9.2 Size Label

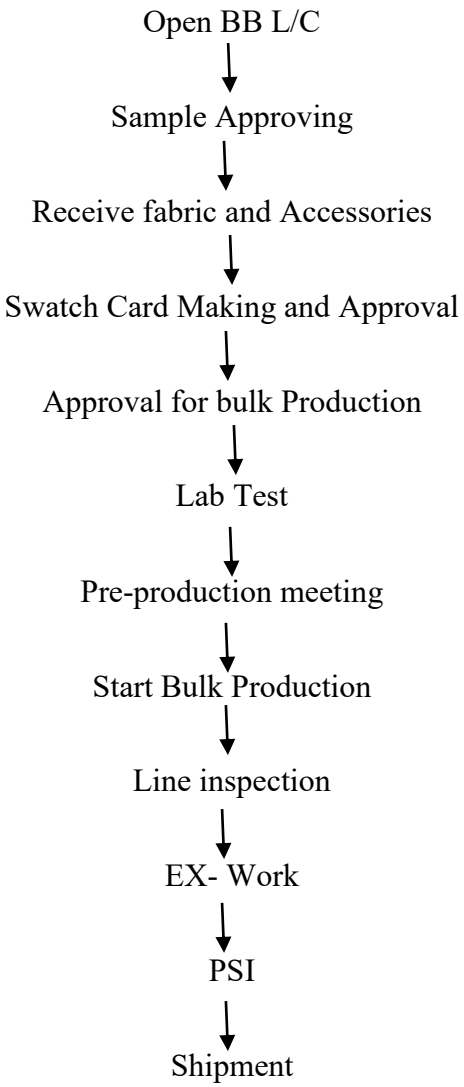
- Size label indicate the size of the Apparel. Size(XXXL, XXL, XL, L, M, S, XS)

3.5 Merchandising Section

Merchandising department is the star of the department among all the working departments in the Export concern, because Merchandising is the only department having maximum control over the departments and total responsible for Profit and loss of the company. After LPG (Liberalization, Privatization & Globalization) the business gets more important and now merchandising is on its hot seats. So, it is necessary to understand the day to day happenings of the star department. Merchandise- means goods bought and sold; and trading of goods. Merchandising- is an activity of selling and promoting the goods.

3.5.1 Process Flow chart





3.5.2 Merchandising Calculation:

3.5.2.1 Fabric or Body Calculation:

Calculation Top:

Method-1

$$\text{Formula} = \frac{\{1/2\text{Chest} \times (\text{CB length} + \text{Sleeve Length})\} \times 2}{36 \times \text{Fabric width}} + \text{wastes\%}$$

Method-2

$$\text{Formula} = \frac{\text{Length} \times \text{Width}}{\text{Fabric width} \times \text{Fabric Unit}}$$

NB: In method-(2) two need to calculate different parts of the garments

Chapter 4

Impact of internship

4.1 Sample section

In Sample Section I have learned

- Different types of sample making
- Different types of pattern making

4.2 Cutting section

In cutting Section I have learned

- Marker making process
- Fabric spreading system
- Cutting process of fabric lay
- Numbering process

4.3 Sewing section

In sewing Section I have learned

- Process sequence of sewing section
- Different types of sewing machine's properties & application

4.4 Finishing section

In finishing section I have learned

- Different types of finishing process
- Packing system

4.5 Merchandising section

In merchandising Section I have learned

- Different types of merchandising activities
- Communication

Chapter 5

Conclusion

Industrial attachment program send us to the expected destiny of practical life. Through The completion of industrial attachment at **MBM GARMENTS LTD**, I have got the impression that the factory is one of the reputed readymade garments and textiles industry of Bangladesh. It was established 33 years ago, it has earned very good reputation for its best performance over any other ready-made garments. During my industrial attachment program I learn about, working procedure of merchandising team, working procedure of sample section, working procedure of cutting & sewing section. My supervising officer also satisfied to me & offer co-operation in every steps. It is completely a new experience in my life, which will be very effective in my future service life. During my training period I realized that practical experience is most valuable for service life.