



**Daffodil**  
*International*  
**University**

**Faculty of Engineering**  
**Department of Textile Engineering**

**Industrial Attachment**

**At**

**The Rose Dresses Ltd.**

**Ashulia, Dhaka.**

**Course Title: Industrial Attachment**

**Course Code: TE-431**

**Submitted By**

**Name: Md. Mossaddek Hussain Babul ID: 142-23-3922**

**Supervised By**

**Md. Abdullah Al Mamun**

**Assistant Professor**

**Department of Textile Engineering**

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 January 9, 2018 to March 9, 2018**

## DECLARATION

We hereby declare that, this work has been done by us and not copied from else where;We also declare that neither this report nor any part of this report has been submitted elsewhere for award of any degree or diploma.

Name:

ID:

Md. Mossaddek Hussain Babul

142-23-3922

:

.....

Signature




## LETTER OF APPROVAL

# Faculty of Engineering

## Department of Textile Engineering

### Approval Sheet

This report entitled ‘‘**Industrial Attachment at The Rose Dresses Ltd.**’’ is prepared and submitted by **Md. Mosaddeak Hussain Babul (ID#:142-23-2926)** 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.

Supervisor  
Cell number  


**Md. Abdullah Al Mamun**  
Assistant Professor

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Finally, I am grateful to all of my teachers who have helped us all over the four years in this Textile Engineering Department.

## **DEDICATION**

It is our genuine gratefulness and warmest regard that we dedicate this work to our beloved Parents & respected Teachers.

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## **CHAPTER 1**

### **EXECUTIVE SUMMARY**

## **1. Executive Summary**

Education provides important learning of the modern inventions and the theories and also gives us a combined knowledge over theoretical and practical studies. Literatures provide the right information which we have been learned through our university. On the other hand practical knowledge increases the practice of theoretical perception clear and more efficient.

Internship has made this opportunity. Because we have learned theoretical knowledge last four years but due to lack of proper industrial knowledge on our course, we would not been said a complete engineer. Industrial attachment did work for us.

We have completed 1 month's long industrial training in Merchandising, Sample, CAD and pattern, Cutting, Sewing and Finishing Section. When we started this training we did not have any idea about the factory. During the training period we went every section of this factory. We faced a lot of technical problems, which we solved by consulting with the related persons. The respective personals of each individual sections of the industry helped us to explain their working process. We saw different types of machines, their functions, manufacturing processes, and analysis the corresponding products.

In this industrial training we were very much intimate to learn the newly oriented segment of our course from the industry. We were very much concerned to learn what problems may face in future and how it can solve. It increased our out looking capability and builds our knowledge with practical skill.

## CHAPTER 2

### INFORMATION ABOUT FACTORY

#### Picture of the industry full view



Figure 2.1: Picture of the industry full view

## **2. Introduction**

### **2.1 About The Rose Dresses Ltd:**

Industrial attachment may compare as pre-job. So for appropriate industrial attachment should select a perfect industry. The working discipline of The Rose Dresses Ltd has impressed us. We highly advanced technology and an emphasis on developing local human resources. One month of this industrial attachment is attached to our study curriculum to achieve adequate practical Knowledge and develop adopting power with industrial environment.

We have prepared this attachment in The Rose Dresses Ltd, which is 100% export garments industry. It has well planned, environment and over all section for making garments. 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 training minimizes the gap between theoretical and practical knowledge and makes us familiar with the industrial environment. It has well garments unit. It is a knit garments factory.

The industrial attachment is the process which builds understanding skill & attitude of the performer, which improves his knowledge in boosting productivity & services. College education provides us vast theoretical knowledge as well as more practical attachment, despite all these industrial attachment help us to be familiar with the technical support of modern machinery, Knowledge about various operation stages. It also provides us sufficient practical knowledge about Productivity evaluation, Time study, target, work study, efficiency & 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 us reliable to be accustomed with the industrial atmosphere & improve courage & inspiration to take self-responsibility.

## **2.2 Company Profile**

A 100% export oriented world class ready-made garments factory committed to quality at competitive price, established with latest/sophisticated machinery & equipment, run by honest, dedicated & long experienced Management. The Factory is certified by GOTS, & BSCI

The Rose Dresses Ltd is a garments industry. We are able to do all kinds of product which is Knit, Knit-Acrylic and Woven-Knit combination. Our product capacity is 35000 pcs to 40000 pcs per day depend on style.

Year of inception: 1985

No of companies: 2

Product capacity is 35000 pcs to 40000 pcs per day depend on style

Total sewing line: 81

Total Area for Sewing, Finishing & Others: 110,000 sqft.

Total work force: 5497(Male female ratio: 30:70)

Total sewing machines: 3800

Manufacturing business: Readymade woven apparel, knit.

Monthly production capacity: 1.2 million pcs of RMG

Annual turnover: 70 million USD

Lead time: 10-16 weeks

## 2.3 Location Map

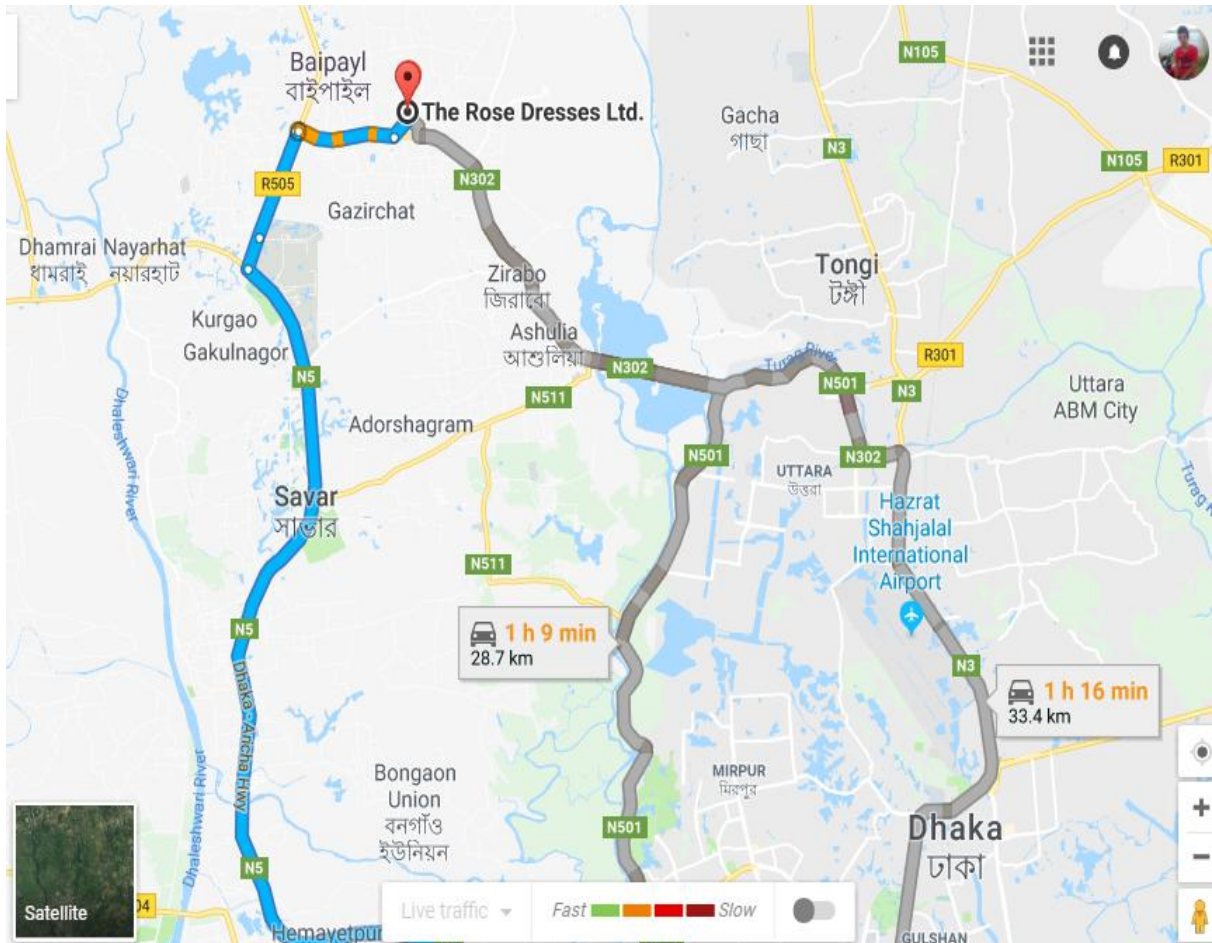


Figure 2.2: Location Map



## 2.4 Location

From Dhaka (Daffodil International university), Buses (Thikana) will take about 25-30 taka to baipayl Station Road. From baipayl Station Road Auto- rickshaw fair is about 30 taka, to the factory.

Head southeast on Mirpur Rd toward Shukrabad Foot Over Bridge

190 m

Make a U-turn at Bir Uttam Kazi Nuruzzaman Road/Panthapath

5.1 km Continue onto Dhaka - Aricha Way, Turn right onto N302 700 m

Continue onto Nabinagar - Chandra Rd

2.3 km

Turn right onto Dhaka - Ashulia Hwy/N302

2.2 km

Turn left onto B1002

550 m

The Rose Dresses Ltd.

Jamgora, Diakhali, Ashulia,, Dhaka

## 2.5 Layout of factory

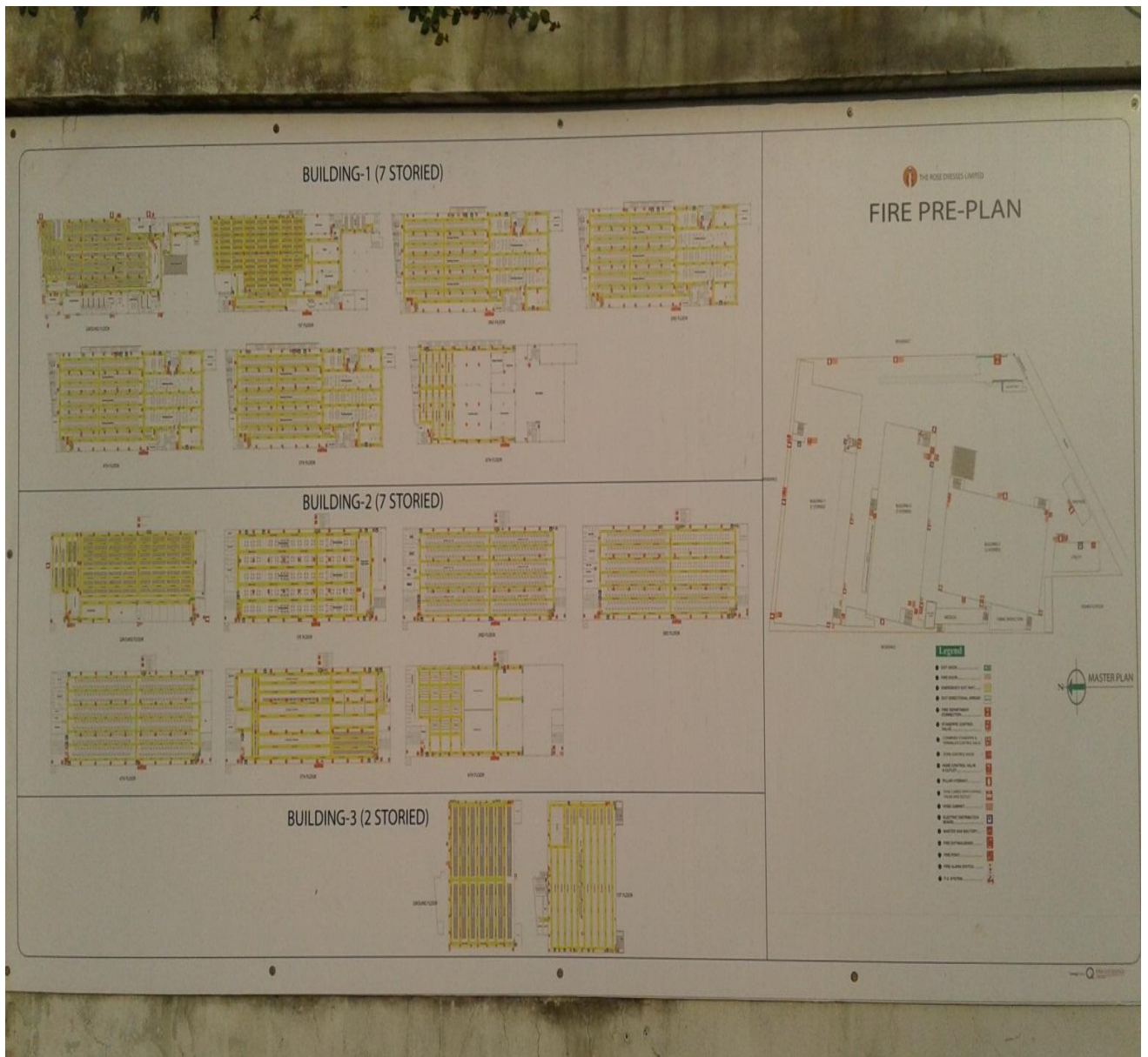


Figure 2.3: Layout of Factory

## 2.6 Organogram

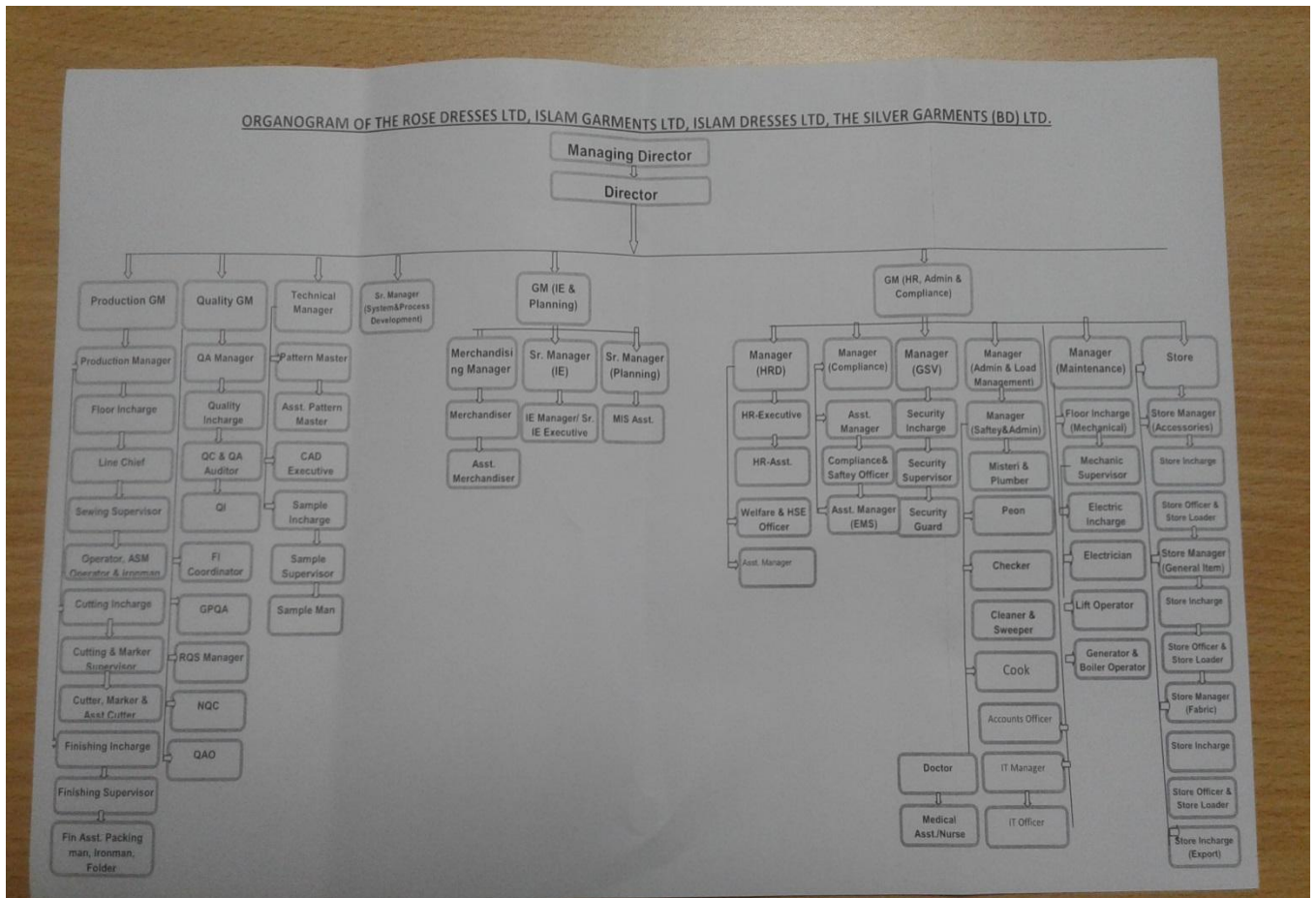
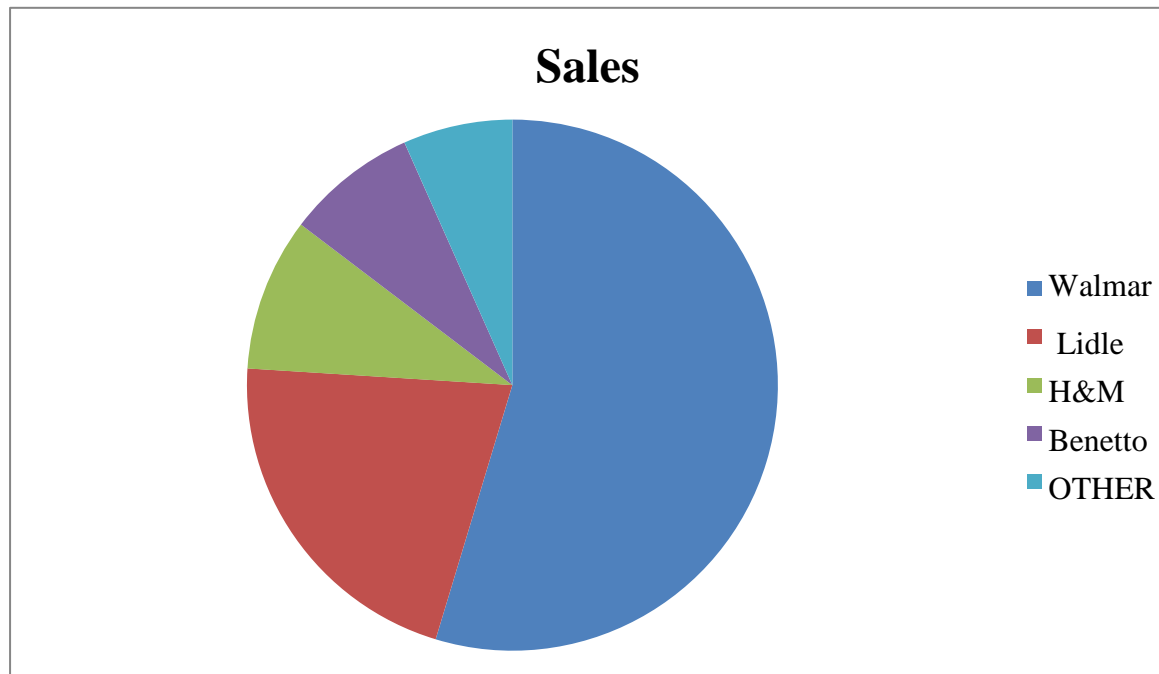


Figure 2.4: Organogram

## 2.7 Sister Concern

- The Rose dresses Ltd
- Islam garments Ltd
- Islam Dresses Ltd

## 2.8 Export growth by graph



## 2.9 Product mix

All are knitted product (Men's, Women's & Children's wear).

Such as t-shirt, polo shirt, denim, short, full sleeve t-shirt etc.

## 2.10 Numbers of worker

Employee Quantity : 6097

Male Employee : 2057

Female Employee : 4040

## 2.11 Finishing Unit

SL	MACHINE NAME	BRAND	TYPE	COUNTRY OF ORIGIN	UNIT	REMARKS
1	Stenter	Dilmenler	7 Chamber with Setex 848PLC Control, Dogul 4 Positive Feeding, Bianco Digitex 6 Weft Straighter, Phennenburg Colling System for Control Unit, Maxon Burner ETC	Turkey with All German, Italian & US Product	1	7 Chamber with the capacity of 7000kg finished fabric & 3000kg Heat Set.
2	Bianco Tension Less Slitting	Bianco	Head, Detwister, Basket, Conveyer Belt & Double Padder	Italy	1	With the Capacity of 90Meter/Min that is more or less 24000kg of 180gsm 30" Dia
3	DMS Slitting	Dilmenler	Head, Detwister, Basket from Bianco, Padder from Rollin	Turkey	1	With the Capacity of 90Meter/Min that is more or less 24000kg of 180gsm 30" Dia
4	Stitching Machine	Tuana Makina	Edge Sewing from Cutter, Italy with D-Threading	Turkey with Italian Parts	1	42Meter/Min
5	Dryer	Dilmenler	2Chamber 2Pass Relaxed Dryer for Open width Fabric	Turkey	1	400lt/hr evaporation capacity that is 8000kg/Day
6	Open Width Compactor	Ferraro	Open width Compactor Ferraro Revolution 3000, with 9.6Meter Pin Frame, Low Rise Positive Feeding, Steamer through 2 steam box, Compaction Zone & Polishing Device.	Italy	1	7000 to 8000kg/Day

**Table 2.1: Finishing Unit Machine List**

## 2.12 Garments Section

S/N	Name of the Machine	Brand	Country of origin	Quantity
1	Cutting Machine	K.M	Japan	20
2	Plain machine with / without thd trimmer	Brother/Juki	Japan	450
3	Plain machine with trimmer	Juki	Japan	30
4	Over lock 4 thread	Brother/Juki	Japan	300
5	Over lock 5 thread	Brother/Juki	Japan	50
6	Over lock 6 thread	Brother/Juki	Japan	15
7	Top & bottom covering stitch flat bed	Brother/Juki	Japan	150
8	Top & Bottom covering stitch cylinder bed	Brother/Juki	Japan	170
9	2 needle plain machine	Juki	Japan	30
10	PMD	Kansai special	Japan	10
11	Picoting machine	Kansai special	Japan	20
12	Smoking with design pattern 12 needle 9CAM	Kansai special	Japan	10
13	Computer control lock stitch bar tack machine	Juki	Japan	12
14	Blanket/shell stitch/ Tac stitch machine	Sigma	Japan	2
15	Loch stitch button hole	Brother/Juki	Japan	23
16	Computer control Loch stitch button stitch	Brother/Juki	Japan	25
17	Rib cutter		Japan	10
18	Snap button	TSSM	Japan	20
19	Button pull gauge	Lamda	Japan	1
20	Needle detector (conveyer type)	Hashima	Japan	1

21	Metal glove	Niroflex	Japan	6
22	Electric Boiler	Naomo.sun star	Japan	2
23	Gas boiler	Fulton	Japan	2
24	Steam iron	Naomo.sun star	Japan	41
25	CAD with Digitizer & plotter	Assyst Bulmer	Japan	2
26	Fusing Machine	Hashima	Japan	1
27	Automatic Fabric spreading Machine	serkon	Japan	1
28	Manual Fabric spread Machine for Tub. Fabric	serkon	Japan	1
29	Air Flotation Tale for Fari Laying 72”	serkon	Japan	2
30	Automatic strapping Machine	Geniuspack	Japan	1
31	Kanshi special	Kansai	Japan	1
32	Reconing Machine	hashima	Japan	3
33	Spot cleaner machine with compressor		Japan	3
34	Curing Machine		Japan	3
35	Automatic cutting Machine	Kuris	Germany	2
<b>Total Machine</b>				<b>1102</b>

Table: 2.2Machine List



## 2.13 Major Buyers& Logo

Buyer Name	Logo
Walmart	
H&M	
Lidl	
Benneton	 <p style="text-align: center;">1971</p>
Monoprix	

Table: 2.3Major Buyers& Logo



## 2.14 Certificates



## 2.15 Mission and Vision

### **Mission**

Our business plan is not only to make profit but also create employment where employee/worker can feel safe on duty. We also believe in Client satisfaction by providing them product quality, service and best price. We will be glad to have you at our factory premises. Please feel free to contact us and always you are welcome to visit our factory.

## **Vision**

### **Meet our buyer's/Customer's Expectations**

- Make quality a habit at all areas of operation
- Achieve - AQL 2.5 for our production
- A vertically integrated project that offers quality product and maintains very competitive pricing strategy.

### **Strong profitability**

- Reduce wastage at all levels & process
- Achieve & sustain over 95% utilization of man-machine capacity.
- Control & measure productivity (input cost/output cost) to achieve expected return on investment.

### **Team-work & motivated workforce**

- Goals are shared by all members of management & staffs
- Offer a safe & rewarding work environment to our workforce
- Continuous monitoring & efforts to upgrade workers level of motivation & skill.

### **Lay foundations for future**

- Reinvestment of profit in expansion of capacity & resources
- Continuous market research to identify potential extension opportunities to existing production
- Invest in our people in upgrading their lives

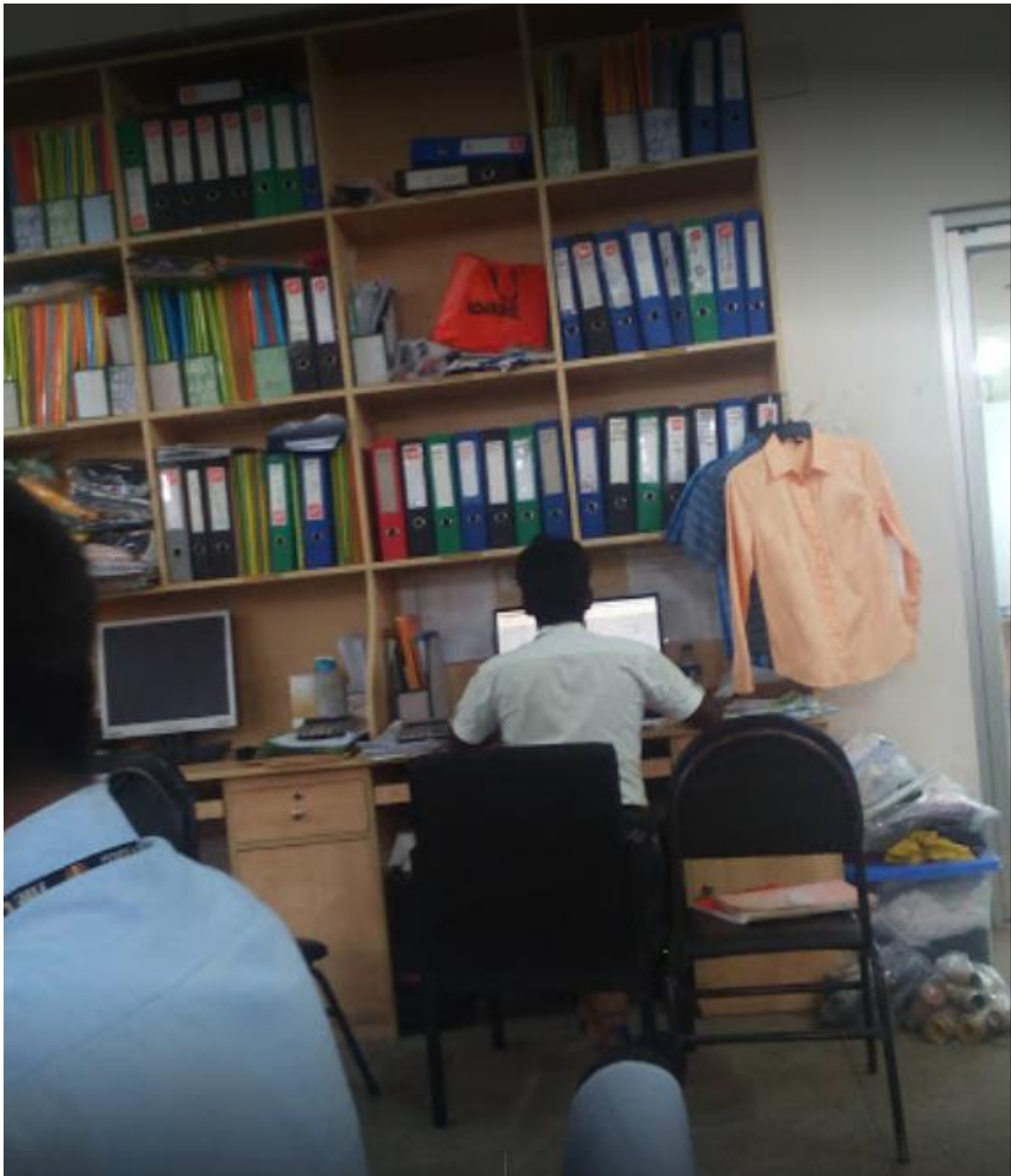
**CHAPTER 3**  
**DESCRIPTION ABOUT ATTACHMENT**

This attachment fully view of The Rose Dresses Ltd. This is a ready-made garments industry. It is one of the major branches of Islam Group Ltd. This attachment is fully basis on garment section. Here available cutting, sewing & finishing sections.

### 3.1 Layout of garments Floor By Floor



**Fig 3.1: Finishing Section**



**Fig 3.2: Office & Store**





**Fig 3.4: Cutting (3<sup>rd</sup> floor)**



**Fig 3.5: Sewing & Finishing (4th floor)**

## RAW MATERIALS & STORE



**Fig 3.6 Raw Materials Store**



## Store



**Fig 3.7 Accessories Store**

## 3.2 Types of Raw Materials

Fabric: Knitted

### 3.2.1 Fabric accessories

There many types of fabric accessories are used in garments manufacturing sectors, which are below-

- Care label
- Main label
- Size label
- Importer label
- Sewing thread



- Button
- Zipper
- Ring buckle
- Twill tape
- Hanger loop
- Mobilon tape □ Snap button
- Interlining etc.

### 3.3 Pattern

A pattern is the template from which the parts of a garment are traced onto fabric before being cut out and assembled. Patterns are usually made of paper.

Type of pattern making:

1. Computerized

Computerized pattern making is mainly used in RDL .



**Fig 3.8 Pattern Making**

### 3.4 Marker

It is a thin paper which contains all the necessary pattern pieces for all sizes for a particular style of garments. It gives special instructions for cutting. It can be done both manually and computerized method. In computerized method all information's are stored in the pre-fashioned data file and an operator helps the computer to make the best choice. Marker width is taken according to the fabric width. Fabric spreading should be done by taking the guideline from maker width.

Computerized marker making is used in RDL.



**Fig: 3.9 Marker Making Machine**

### **3.5 Sample Department**

After getting all requirements the sample is made and then it tested, inspected and then it is sent to buyer for identify the faults of sample and point it. After that it returned to sample department after rectify the sample is again sent to buyers. If it is ok, then start manufacturing processes.

#### **3.5.1 Sample type**

- 1) Development sample
- 2) Salesman Sample
- 3) Photo Sample
- 4) Approval Sample
- 5) Size set Sample
- 6) Mock up Sample
- 7) Pre-production Sample
- 8) Production Sample
- 9) Shipping Sample, etc.

## **3.6 CUTTING SECTION**

### **3.6.1 Fabric cutting**

Fabric Type: Knitted

Cutting is the first step and very critical step for garments production. The wastage during cutting is an important issue. Different cutting faults can be occurred which should be minimized. Fabric lay is cutting by straight knife cutting machine then separated cutting part. After cutting, the cut pieces are numbered by numbering Machine.

### **3.6.2 Cutting Machine**

Brand name: KM MACK

Features of Straight Knife Cutting Machine

- 1) Possible to cut pattern pieces directly from the fabric lays
- 2) Could be used to cut for higher depth of fabric
- 3) High cutting speed
- 4) Sharp and heavy corners can be cut
- 5) Blade could be sharpened by attaching grinding facilities
- 6) Blade height 08 to 10 inch.
- 7) Blade stroke 2.5 to 4.5 cm



**Fig 3.10 Straight Knife Cutting M/C**

### 3.6.3 Fabric Spreading

Fabric spreading is very important part of the production process because it is basic for obtaining a high quality final product. Spreading is the process of unwinding large rolls of fabric onto long, wide tables in preparation for cutting each piece of a garment.

#### 3.6.3.1 Types of fabric spreading

1. **Manually**



**Fig 3.11 Fabric spreading**

### 3.6.4 Method of fabric cutting

#### Types of Cutting

1. Fully manual
2. Manually operated power knife
3. Computerized methods of fabric cutting

### **Lay Precaution**

- During lying the layers should check the lay-to-lay shade variation & also center to selvedge variation as a part of online check procedure.
- QC shall inspect the lay for lay tension, width, length, grain line, nap direction etc.
- End wastage for lying of fabric shouldn't be more than 1 cm.

### **3.6.5 Bulk Cutting**

- Cutters must be trained on the methods of accurate cutting, especially for parts with deep curves.
- Cutters shall inspect the cutting machine for oil leakage, straightness of the blade, sharpening quality, evenness in sharpening of the blade, dust accumulation before cutting.
- Cutters shall cut lay as per the mark up using straight knife m/c and move the parts to band knife as per the discussion in PP meeting.
- QC shall inspect all the cut parts using patterns and initiate corrective action upon the detection

To avoid the risk of making mistakes in bulk production must consider checking following things.

- Approved production pattern
- Approved Fabric Consumption
- Approved Fabric Quality
- Approved marker planning





**Fig 3.12 Bulk Cutting**

### **3.7 SEWING SECTION**

To attached the different parts of the garments. In this process fabric is sewn by needle. In this section different types of sewing machines are used.

#### **3.7.1 Sewing Machine Description**

##### **Plain Machines**

##### Properties

- One needle
- Two thread
- One bobbin case

##### Applications

- Bottom hemming

- Belt making
- Loop tack stitch
- Pocket joint stitch □Zipper joint □Neck top stitch etc.



**Fig3.13 Plain Sewing machine**

### Over lock sewing m/c

#### Properties:

- 2 needle thread
- 2 looper thread

#### Applications

- Neck piping
- Sleeve piping □Sleeve joint
- Side seam etc.





**Fig: 3.14 Over lock machine**

### **Button Holing m/c**

Button holes are holes in fabric which allow buttons to pass through, securing one piece of the fabric to another.

#### Properties

- 2 thread
- 1 needle thread & 1 bobbin thread
- Contains bobbin case, hook & knife

#### Applications

To attached button in garment



**Fig 3.15 Button Holing M/C**

#### **Button Attach m/c**

- This is a single needle chain stitch button sewing machine which inherits the excellent sewing capability and hassle free operation.
- The four hole button sewing mode can be easily switched over to two hole button sewing.
- Number of stitches and stitching patterns are easily adaptable.



**Fig 3.16 Button attaching m/c**

### **3.8 Quality control in sewing section**

The following three defects should be identify and must make defect three in the quality control section.

#### **3.8.1 Sewing defects**

- Needle damage
- Skipped stitch
- Seam pucker
- Wrong stitch density
- Uneven stitch
- Defected stitch
- Oil spot

#### **3.8.2 Seaming defects**

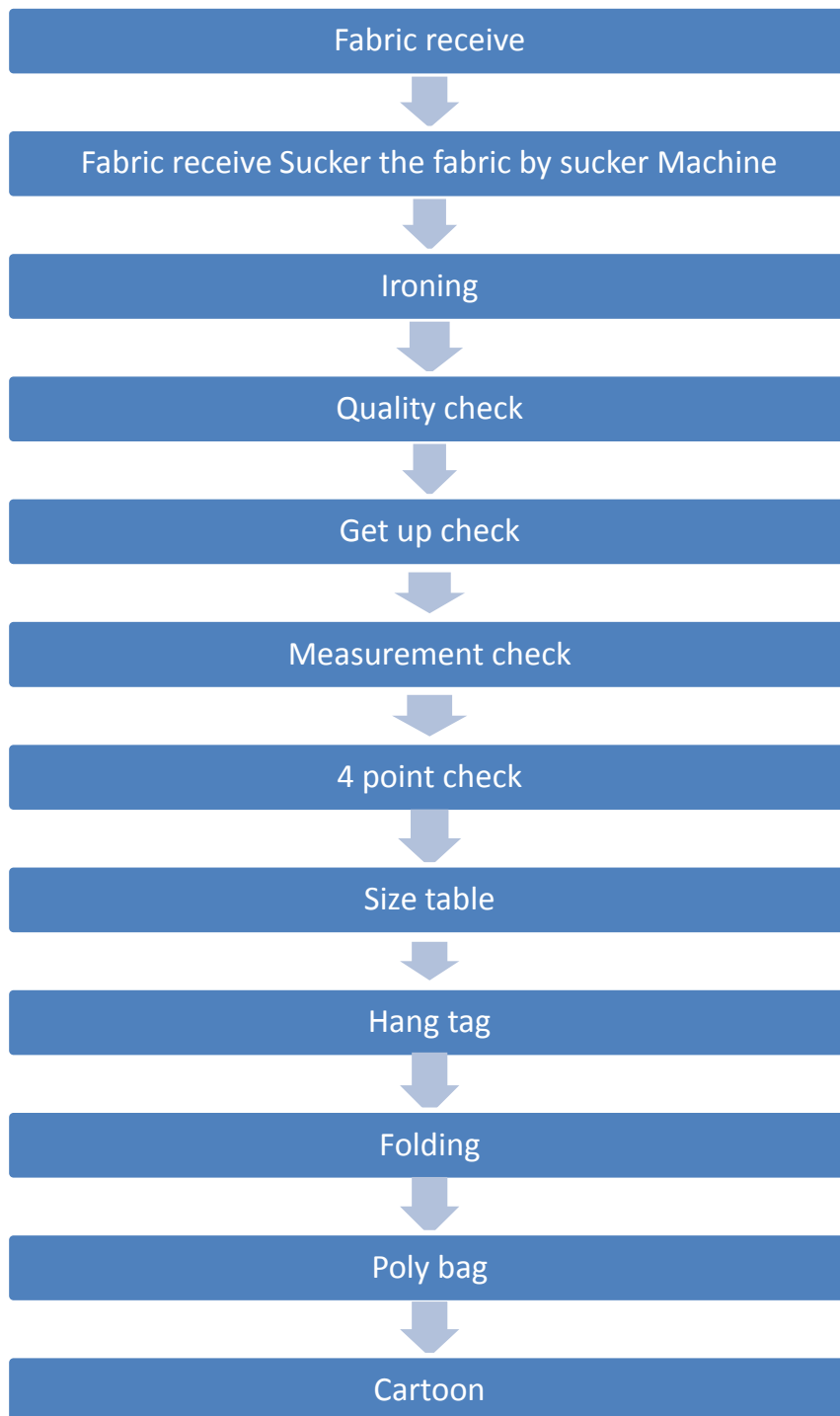
- Uneven width
- Uneven seam line
- Not secured by back stitch
- No matching of check or stripe

- No matching of seam
- Unexpected materials are attached with the seam
- 4 point system

### **3.9 FINISHING SECTION**

This section includes process from Ironing to send to buyer. After making, it should be treated by steam ultimately make the garments attractive as per buyers approved sample. The process by which unwanted crease and crinkle are removed with the view of increasing smoothness, brightness and beauty of the garments is called finishing. In the garments industries it is called ironing. This process plays an important role to grow attractiveness to the buyers.

### 3.9.1 Flow chat of finishing section







**Fig 3.17 Ironing**

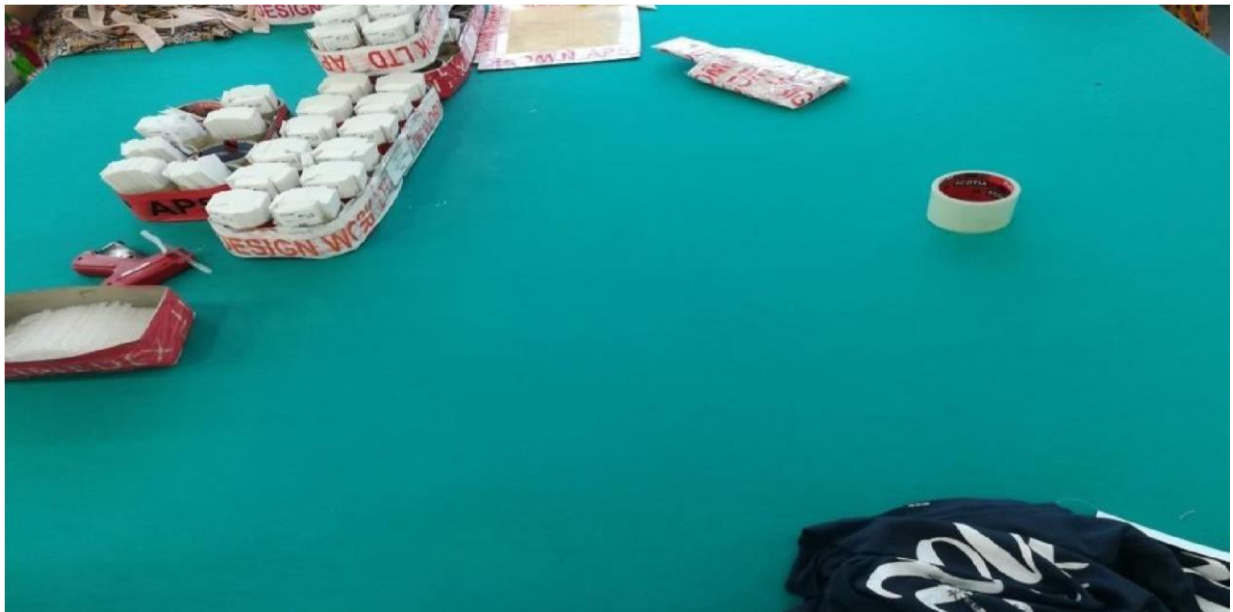


**Fig 3.18 Quality Check**





**Fig 3.19 Measurement Check**



**Fig 3.20 Hang Tag**



**Fig 3.21 Folding**



**Fig 3.22 Packing & Cartooning**



### **3.9.2 List of Accessories Used in Finishing**

- 1) Main Level
- 2) Size Level
- 3) Care Level
- 4) Hang Tag
- 5) Bar code Sticker
- 6) Poly Bag
- 7) Tag Pin
- 8) Carton
- 9) Hang Tag String
- 10) Clip
- 11) Paper Gum Tape
- 12) Tissue Paper

### **3.10 Final Inspection**

Garments are inspected by AQL. In this system samples are collected inspected by statistically from the lot size and will decide the lot of garments to be granted or rejected.

AQL is mainly used in final inspection after garment making.

Acceptable quality level (AQL) sample inspection methods have been proven to be accurate over a long run. However, the quality level of merchandise at destination is sometimes lower than the per-shipment inspection results. This may be due to transport, handling, change in environment and/or reliability problems. Buyers are therefore advised to take this into consideration when deciding the AQL levels.

### 310.1 Defect Classification

The client defines the AQL and the maximum number of defective goods allowed in the sample size. Defects detected during visual inspection are usually classified within 3 categories:

“Critical”, “Major” and “Minor”



Fig: 3.23 4 point system

NON WASH  
**Islam Garments Ltd.** RCV-30-11-12  
 (A Group of Industries)  
 Fabric Inspection Report (in 4 Point System)

Buyer: BEST SELLER Total Fab. Rcvd.: 1070.6 YDS Date: 3-12-12  
 Supplier: AMTDI SIMSILL TEX LTD Total Rolls Rcvd.: 79 ROLL Dept: \_\_\_\_\_  
 Season: 2011 10% of Till Rcvd.: 1011 YDS Factory: The Rose Dresses Ltd.  
 Style No: 15152169/70 Fab Construction: 100% POLYESTER OCCBBY SOLID DYE D1002403X1000 Swatch: \_\_\_\_\_  
51550122 Total Points (per 100 Sq. Yds.): 15.16

Sl No	Roll No	Batch No	Color	TKT Length	Actual Length (+/-)	TKT Width	Actual Width (+/-)	Calculation for size of Defect				Total Defect Points	Total Points per 100 sq yds	Result for Individual Roll		
								1 Point (Up to 3")	2 Point (3" to 6")	3 Point (6" to 9")	4 Point (Above 9")			Pass	Fail	
1	231		BLACK	132.3	132.3 OK	57.5	57.5	C-111 R-111 H-111	12	C-11	4	8	29	131.22	L	
2	181		BLACK	133.4	133.4 OK	57.5	57.5	C-111 R-111 H-111	18	C-11	6	12	36	121.04	L	
3	169			135	135 OK	57.5	57.5	C-111 R-111 H-111	15			20	25	161.37	L	
4	245			124.6	124.6 OK	58	58	C-111 R-111 H-111	14	R-11	4	12	30	141.94	L	
5	246			128.4	128.4 OK	57.5	57.5	C-111 R-111 H-111	12	C-11	6	8	31	151.12	L	
6	186			130	130 OK	57.5	57.5	C-111 R-111 H-111	18			12	30	141.45	L	
7	218			132.5	132.5 OK	58	58	C-111 R-111 H-111	19	R-11	4	8	31	141.52	L	
8	230			124.6	124.6 OK	57.5	57.5	C-111 R-111 H-111	16			20	30	151.07	L	
				1040.8	1040.8	57.5			128		24	102.25	15.16			

Calculation formula:  $\frac{\text{Total points}}{\text{No of Yards inspected}} \times \frac{36 \text{ inches}}{\text{Fab. width}} \times 100 = \text{POINTS PER 100 sq. YARDS}$

ACCEPTABLE POINTS PER 100 sq. YDS. 20 pass the Lot, 21 Fail the Lot

Defect codes for Woven Fabric:							
A - Broken picks	D - Knot	G - Stain	J - Crease mark	M - Oil mark	P - Broken end	S - Dye mistake	V - Brush
B - Stop mark	E - Shine mark	H - Foreign yarn	K - Reed mark	N - Water mark	Q - Double picks	T - Print mistake	W - Soil
C - Slub	F - Hole	I - Loom stop	L - Salvage dmg.	O - Salvage tight	R - Miss yarn	U - Shading	X -

Fabric Inspector: \_\_\_\_\_ Merchandiser: \_\_\_\_\_ Store Manager: \_\_\_\_\_ Quality Manager: \_\_\_\_\_ Cutting Manager: \_\_\_\_\_ PM: \_\_\_\_\_ GM Quality: \_\_\_\_\_

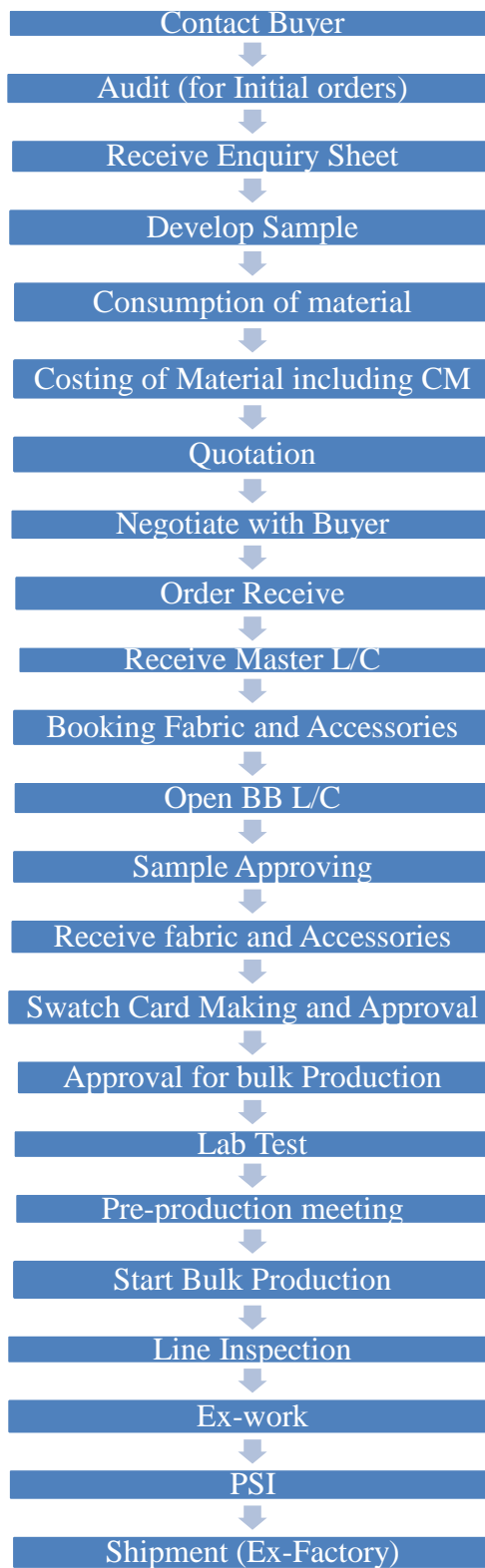
**Fig 3.24 Final Inspection Sheet**

### **3.11MERCHANDISING SECTION**

### **3.11.1 Merchandising**

The merchandise in the initial stages of order receipt and conformation coordinates with the buyer and sampling department for various approvals.

### 3.11.2 Flow Chart of Merchandising



### 3.11.3 Objects of Merchandising

Merchandising denotes all the planned activities to execute and dispatch the merchandise on time, taking into consideration of the 4 Rs to replenish the customer.

- **Right Quantity:** To dispatch right quantity of product what buyer ordered?
- **Right Quality:** It should be with right quality as accepted both parties.
- **Right Cost:** Everybody wants more from what they are paid.
- **Right Time:** No one wants to wait idle even in a Restaurant. Keeping delivery schedule is mandatory.

### 3.11.4 Merchandising Calculation

Fabric or Body Calculation:

$$\frac{(\text{Body length} + \text{Sleeve length} + \text{Allowance}) \times (\text{Chest} + \text{Allowance})^2 \times \text{GSM} \times 12}{10000000} + 10\% \text{ waste}$$

= Result kg/dozen NB:

(BL+SL) Allowance= 10 cm. Allowance.

When keep the chest allowance then body width, chest width and bottom width which are big (cm) with (4 cm+) Added.

10% overall Process Loss.

1 dozen= 12 pcs.

**Body Consumption By Marker:**

$$\text{➤ } \frac{\text{Length} \times \text{width} \times \text{GSM} \times 12}{1000 \times 1550 \times \text{Ratio}} + 12\%$$

**Dia Measurement**

$$\frac{\text{Chest or Bottom} + \text{Allowance}}{2.54}$$

= Dia / Result

**NB:**

1 inch = 2.54 cm.

When I dia measurement then chest or bottom with (4-6 cm) allowance added.

**Self or Rib Fabric Neck Dia Measurement:**

$$\text{➤ } \frac{\text{Neck opening or Width} + \text{Neck drop} \times 2}{2.54}$$

= Result.



### **Pant / Trouser or Pajama Consumption:**

$$\text{➤ } \frac{(\text{Length} + \text{Allowance} \times \text{dia} \times 2 \times \text{GSM}) \times 12}{10000000} + 10\% (+)$$

= Result kg. / Dozen.

NB:

- L + Allowance with self-fabric waist minimum (12 cm) Allowance added.
- Without self-fabric waist minimum (8 cm) Allowance added.
- Allowance minimum 15 cm added with Hip or Dia.
- DIA = Hip + Allowance / 2.54

### **Pocket Consumption:**

- Length + Width + Allowance.

NB:

- Allowance minimum 5 cm added with ( L+ W).

### **Carton Dimension:**

$$\text{➤ } \frac{(\text{Length} + \text{Width} + \text{Allowance}) \times (\text{Width} + \text{Height} + \text{Allowance}) \times 2}{100 \times 100}$$

= Result / SQM.

NB:

- L + W + Allowance = 6 cm.
- W + H + Allowance = 3 cm □2 = Double part.

### **Button Ligner (Find out Formula):**

- 1 GG = 144 Dozen.
- 1 GG = 1728 pcs.
- Ligner =  $\frac{\text{Button Dia}}{0.61}$

= Result / ligner.

NB:

- Always Button liner is plural number.
- As like 16,18,20,22,24 **Yarn Booking:**
- Fabric yarn (kg) + Process Loss. = Result / kg.

NB:

- Process loss keep the 10% added with total fabric.

### Sewing Thread Consumption:

Machine Name	Thread required
Plain Machine	1" for 2.75"
Over lock (3 Thread)	1" for 14"
Over lock (4 Thread)	1" for 19"
Over lock (5 Thread)	1" for 24"
Flat lock (2 Thread)	1" for 7"
Flat lock (3 Thread)	1" for 17"
Flat lock (4 Thread)	1" for 24"
Flat lock (5 Thread)	1" for 28"
Button hole, Button Attach, Bar-take	1" for 7"
<b>Cone Quantity = per garments thread × garments qty. × qty. in cone.</b>	

Table 3.1 Sewing thread consumption

### Calculation Cubic Meter (Cbm):

$$\text{CBM} = \frac{\text{Carton length} \times \text{Carton width} \times \text{Carton height} \times \text{Carton Qty.}}{1000000}$$

= CBM / Result.

NB:

- 100 cm x 100 cm x 100 cm = 1000000
- 20 Feet = 28-31 CBM
- 40 Feet = 56-62 CBM

### Marker Consumption (Formula):

$$\text{Open Dia} = \frac{\text{Marker length} \times 2.54 \times \text{Marker width} \times 2.54 \times \text{GSM}}{10000000 \times \text{Marker Pcs}} \times 12 + 10\% (+).$$

= Result kg. / Dozen

$$\text{Tube Dia} = \frac{\text{Marker length} \times 2.54 \times \text{Marker width} \times 2.54 \times \text{GSM}}{10000000 \times \text{Marker Pcs}}$$

= Result kg. / Dozen

### **3.12 MAINTENANCE SECTION**

Maintenance is a process by which equipment is looked after in such a way that trouble free.

### **3.12.1 Types of Maintenance**

There are two types of maintenance-

- 1) Electrical Maintenance
- 2) Mechanical Maintenance

### **3.12.2 Servicing Of Sewing Machine**

#### **1. Plain M/C**

Oil change/ 3 month

Service/ 7 days

#### **3. Over Lock M/C**

Oil change/ 3 month

Service/ 7 days

#### **4. Kansai M/C**

Oil change/ 3 month

Service/ 7 days

#### **5. Flat Lock M/C**

Oil change/ 3 month

Service/ 7 day

#### **6. Button Hole M/C**

Oil change/ 3 month

Service/ 7 days

#### **7. Button Attaching M/C**

Oil change/ 3 month

Service/ 7 days

### **3.12.3 General machine problem**

The following problem to be checked

- Gap stitch
- Tension
- Needle defective
- Oil spot
- Set change
- Measurement change
- Parts change
- Thread change
- Fabric change

### **3.13 INDUSTRIAL ENGINEERING & PLANNING**

The main function of this department is to re-engineering the garment from the sampling stage so that it would be production friendly for the production as well helps to increase the productivity through machine layout, time and motion study.

In the sewn products industries we must continually ensure that we remain competitive and profitable whilst also striving to improve our personal and community's standard of living.

Productivity improvements may be achieved through:

#### **3.13.1 Industrial Engineering Department**

- To follow up the production process
- Work process development
- SMV calculation & Line target
- Efficiency control
- Time study
- Capacity study
- Workers training
- M/C sequence lay out
- Thread consumption

#### **3.13.2 Duties and Activities of a Work Study Officer**

- Style details collect
- SMV calculation
- Layout make
- Machine arrange
- Attend P.P meeting
- First week production plan
- Line feeding
- Work aid arrange
- Method studies (innovation) & takes video & record
- Time study

- Line capacity find out
- Bottle neck operation find out
- Individually follow up bottle neck operation and try to increase production
- Capacity & efficiency wise target setting & try to achieving -Line balancing

### **3.13.3 Line balancing**

- Line balancing is the allocation of sewing machine according to style and design of garment. It depends of that what type of garment we have to produce.

### **3.10.4 Qualities of an Industrial Engineer:**

- 1.
2. Good knowledge about fiber, yarn, fabric, dyeing, printing, finishing, dyes, color fastness, garments production, etc.
3. Clear conception of the usual potential quality problems in the garments manufacturing.
4. Good knowledge of the usual raw materials inspection systems & garments inspection system
5. Clear Knowledge on the planning of garments product.
6. Clear knowledge about operation breakdown of garments product.
7. Clear knowledge about layout of garments.
8. Order getting ability
9. Sincere& responsible
10. Hard worker



**CHAPTER 4**  
**IMPACT OF INTERNSHIP**

#### **4.1 Layout of garments Floor by Floor:**

In this section I have known about the layout of difference section.

#### **4.2 Types of raw material:**

I have known about different raw material which is used in garments.

#### **4.3Pattern:**

I have known about how to make pattern and types of pattern.

#### **4.4 Marker:**

I have known about marker and marker ratio and gardding.

#### **4.5 Sample Section**

In Sample Section we have learnt about various kinds of sample and also function of sample.

Cleared the conception about different types of sample are required to produce a garment.

#### **4.6 Cutting Section:**

I have known about cutting, how many lay is given for different types of fabric. I also know about defect of cutting.

#### **4.7 Sewing Section**

In sewing section, we practically saw different types of sewing machine. We saw the workers activities, their work culture, time table and their work efficiency which is calculated by their performance.

#### **4.8 Quality control in sewing section:**

I have known about which quality is required for sewing like skip, broken etc is not accepted.

#### **4.9 Finishing section:**

In this section I have known about finishing process and size and color wise break down. Carton size, net weight and gross weight.

#### **4.10 Final inspection:**

In this section I have known about AQL chart and inspection system.

### **4.11 Merchandising Section**

In merchandising we have learnt how to face a buyer and negotiation of a buyer and negotiation of a buyer to convince collect on an order. Analysis of order in the requirements of a buyer and calculate profit and loss of manufacturing of garments. We have learned about CM (cost of manufacturing process).

### **4.12 Maintenance section:**

In this section I have known about how this section work and about their responsibilities. General m/c problem etc

### **4.13 IE Section**

In IE department we came to know about different types of sewing thread consumption, IE engineers working activities , there working procedure, responsibilities etc.

**CHAPTER 5**  
**CONCLUSION**

## CONCLUSION

Industrial training is an important and essential part of education as through this training we learn all the implementations of the processes which we have studied theoretically. It gives us an opportunity to compare the theoretical knowledge with practical facts and thus develop our knowledge and skills. This industrial training also gives us an opportunity to enlarge our knowledge of textile administration, production planning, procurement system, production process, and machineries and teach us to adjust with the industrial life.

We have found us fortunate to have our industrial training at RDL. It has a huge production capacity with a very efficient production team. RDL has a very good, well equipped and modern facilities and producing varies types of knit garments. During our training period we have noticed that RDL is very concern about their quality and they rarely have any quality complain. The management of RDL is very organized, pre-active and co-operative.

At the end of our attachment we realized that industrial training make our knowledge more practically and make us confident to face any problem of our practical challenging life