Faculty of Engineering
Department of Textile Engineering

REPORT ON

Industrial Attachment

At

Mascom Composite Ltd.

kashimpur, Gazipur-1700

Course Code: TE-410 Course Title: Industrial Attachment

Submitted By:

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Md. Tariqul Islam ID: 151-23-4110

Supervised By
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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 11th October'18 to 03rd December'18.

ACKNOWLEDGEMENT

First of all, we are grateful to Allah who gives us sound mind & sound health to accomplish **Industrial Attachment** at **Mascom Composite Ltd.** successfully.

We are also grateful to our supervisor **Mominur Rahman,** Assistant Professor, Department of Textile Engineering, Faculty of Engineering, Daffodil International University. His 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.

We would like to give special thanks to the supervisors, technicians, operators and all other staffs of **Mascom Composite Ltd.** who were most cordial and helpful to us during internship.

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

Finally, we would like to express a sense of gratitude to our beloved parents and friends for their mental support, strength and assistance throughout completing industrial attachment.

*

DECLARATION

We hereby declare that the work which is being presented in this report entitled, "Industrial Attachment at **Mascom Composite Ltd**." Is original work of our own, has not been presented for a degree of any other university and all the resources of collected information for this report have been duly acknowledged.

Name	ID
Pial Roy	151-23-4215
Md. Tariqul Islam	151-23-4110

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

Supervisor:

Md. Mominur Rahman

Assistant Professor

Department of Textile Engineering

Faculty of Engineering

Daffodil International University

LETTER OF APPROVAL

December 15, 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 at Mascom Composite Ltd"** has been prepared by the student bearing ID 151-23-4215, 151-23-4110 is completed for final evaluation. The whole report is prepared based on the factory data with required belongings. The students were directly involved in their 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

Md. Mominur Rahman

Assistant Professor

Department of Textile Engineering

Faculty of Engineering

Daffodil International University

Table of Contents

Chapter-1

Executive Summary

1.1 Executive Summary

This report presents a conception of Textile sector especially of a knit garments industry and tries to clarify the overall processes required to complete a garment. Two months long training is not enough to capture all the information related to but it is possible to overview three departments cutting, sewing and finishing. "**Mascom Composite** Ltd" in where we try to gather information about those three departments. The factory has some limitation for the internship students that are the training schedule provided by the authority. There are more departments in **Mascom Composite Ltd**.". It describes about the activities of each departments and the relation among the departments. Training schedule is prepared in such a way that helps a learner to know that to produce a garment which department works first and correspondingly which works at last. This paper includes from where order is received and to where it is supplied and how a large scale of products is produced within a very short period of time. Different types of order are running on the same time on a same floor with different types of garments from several buyers. But there is no miss match of any product except some cases which are removed by inspection. This paper concludes by identifying some important information about different department that help the factory to grow up quickly with large amount of profit with environment friendly technologies. We have started our 2 months' internship at 11th October and have successfully completed in 3rd December.

Chapter-2

Information about the Factory

2.1 Basic Information

2.1.1 Company Name &Address

Mascom Composite Ltd.
Surabari, Kashimpur, Gazipur-1700

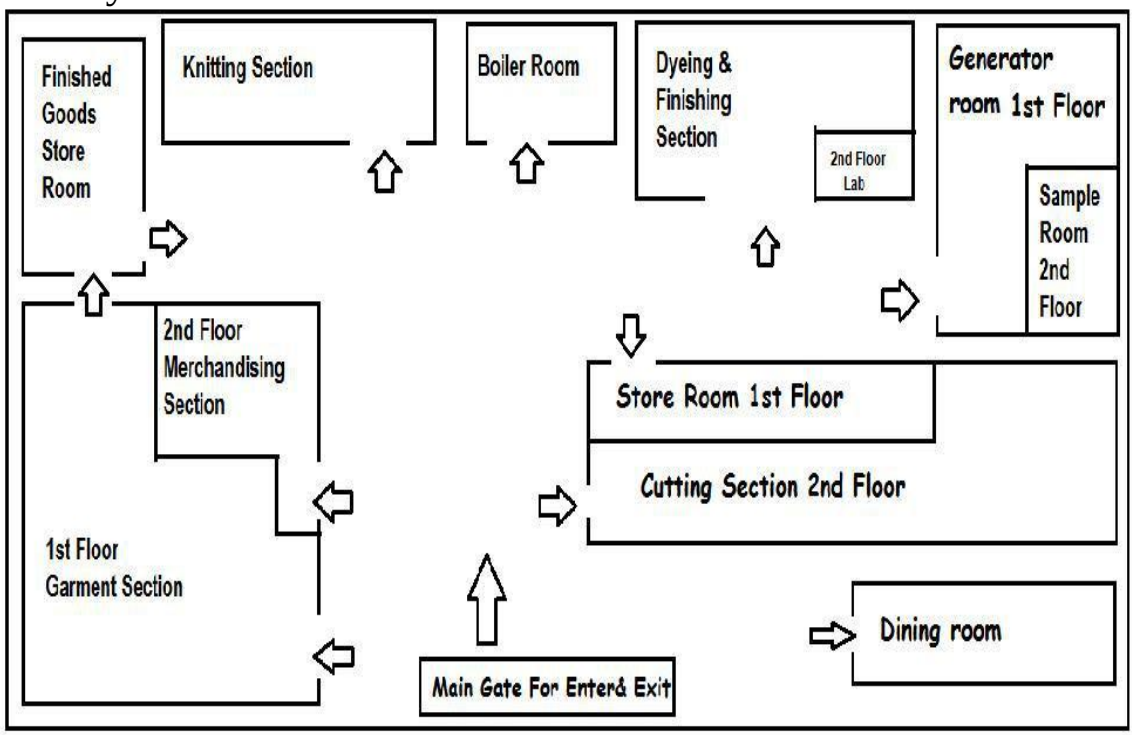
2.1.2 Date of Establishment:

2nd September 1995

2.1.3 Founder and Directors:

Md. Shams Uddin Ahmed &
Abdullah-Al-Mamun Khan

2.1 Layout



2.2 Total Area:

13000 sq. feet

2.3 Total Building:

1

2.2.4 Total Floor:

3

2.5 Production capacity

Based on product

T-shirt: 25000 pieces/month (Average)

Polo Shirt: 10000 pieces/month (Average)
Hoodie: 8500 pieces/month (Average)

Table 2.2.6 Major Buyers with Their Logos

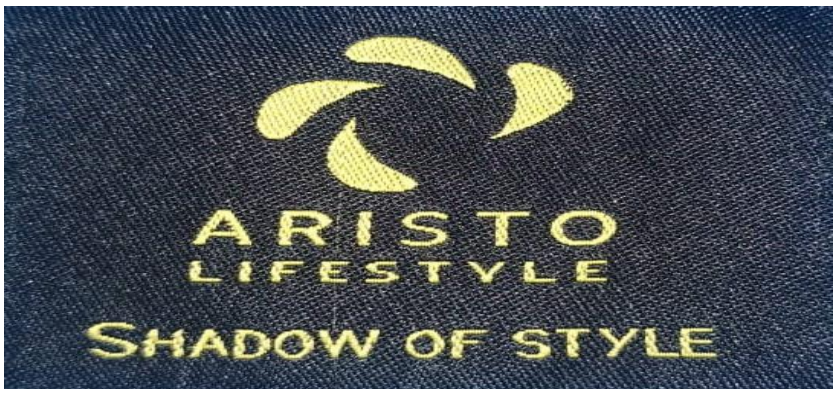
Buyer Name	Logo
ARC	
Aristo	

Figure 2.2.6.1 ARC Uniforms

Figure 2.2.6.2 ARISTO

2.3.2 Total no. of Section

06

2.3.3 Name of Section

1. Knitting Section
2. Dyeing Section
3. Cutting Section
4. Sewing section
5. Finishing section

6.Merchandising section

2.3.4 Main production

- **Knitted Products**
- **Fabrics Used**

Spandex, Fleece, S/J, Interlock, Rib, Lacoste, Pique etc.

- **Garments**

All types of knit items T-shirt, Polo Shirt, Hoodie and Pant (Sample) etc.

2.3.5 Total no. of employee

The number of total employee is 1500

2.3.6 Salary
5000000 tk

2.3.7 Vision and Mission

Vision

To become a truly global supplier that provides a sustainable growth opportunity for its customer, county and its employees, whilst achieving its goal of becoming the number one value fashion supplier across the world.

Mission

- In future be a market leader in the field of value global supplier of RMG .
- Deliver quality fashionable products at affordable prices.
- Be innovative, cost effective and globally competitive.

Chapter-3

Details of Attachment

3.1 Knitting Section

3.1.2 Knitting Section Layout:

Layout Plan of knitting Mascom Composite Ltd

3.1.3 Machine used

No of machine = 14

1. Single jersey
2. Double jersey

3.1.4About Knitting & Knitting Variables

i. Machine RPM
ii. Machine running efficiency
iii. Machine Diameter
iv. Machine gauge
v. Number of feeds or feeders in use
vi. Number of ply of the yarn
vii. Stitch length
viii. Machine running efficiency

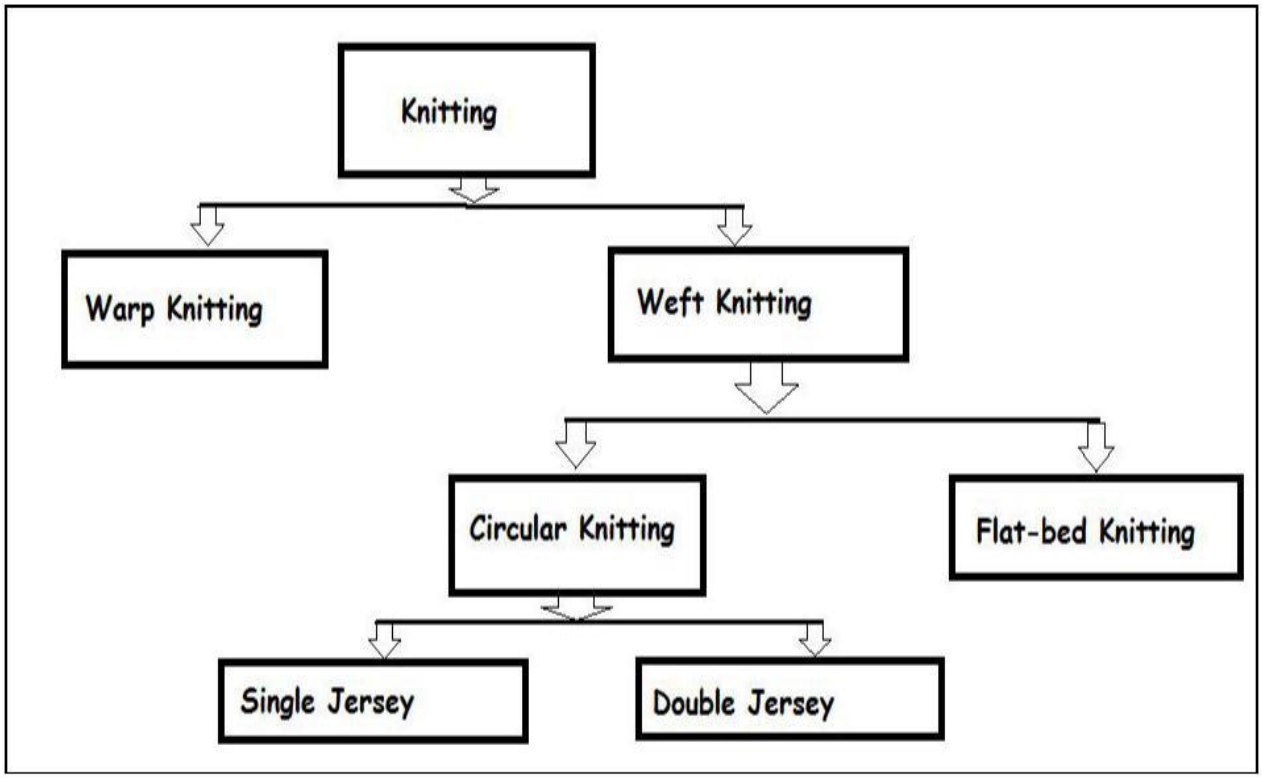
3.1.5 Types of Knitting

There are two major types of knitting;

i. Weft knitting
ii. Warp knitting

Figure 3.4.1Knitting machine

3.1.5Types of Knitting machine



3.1.6 Accessories for Knitting machine:

i. Cylinder
ii. Needle
iii. CAM
iv. Sinker
v. Inventor
vi. Motor
vii. Belt
viii. Pattern wheel
ix. Pulley

3.2 Dyeing Section

3.2.1 Layout Plan of Dyeing

3.2.1 figure : Layout plan of Dyeing section of Mascom Composite Ltd.

3.2.1.1 figure dyeing machine

3.2.2 Pre-treatment

- Composition of 100% cotton

Particles	Percentage
i. Cellulose	85.5%
ii. Fax/Waxes	0.45%-1.0%
iii. Moisture	8.5%
iv. Proteins	1.1%-1.9%
v. Pectin's	0.7%-1.2%
vi. Mineral Substance	0.7%-1%
vii. Various Organic Compound	0.5%-1.0%

3.2.4 Chemicals & Materials used in pre-treatment process

- Caustic Soda
- Hydrogen per Oxide
- Stabilizer(e.g.-Stabilol P, Stabilizer Sifa)
- Wetting Agent(e.g.-Foryl SF,Feloson No F)
- Detergent(e.g.-Sandoclean PC)
- Acid(Acetic Acid)

- Antri-Creasing Agent(Cibafluid C,Primasol Jet)
- Hydrogen per Oxide killer(Bactasol AP)
- Enzyme for neps dead cotton (Bactasol CA)
- Water
- Steam

3.2.5Working procedure of dyeing section

Grey Fabric Received (After Knitting)

Batching

Slitting (for Lycra fabric)

Heat setting (for Lycra and polyester)

Back sewing (For Lycra single fabric)

Batch Making (According to the nozzle of the Machine)

Pretreatment

Dyeing

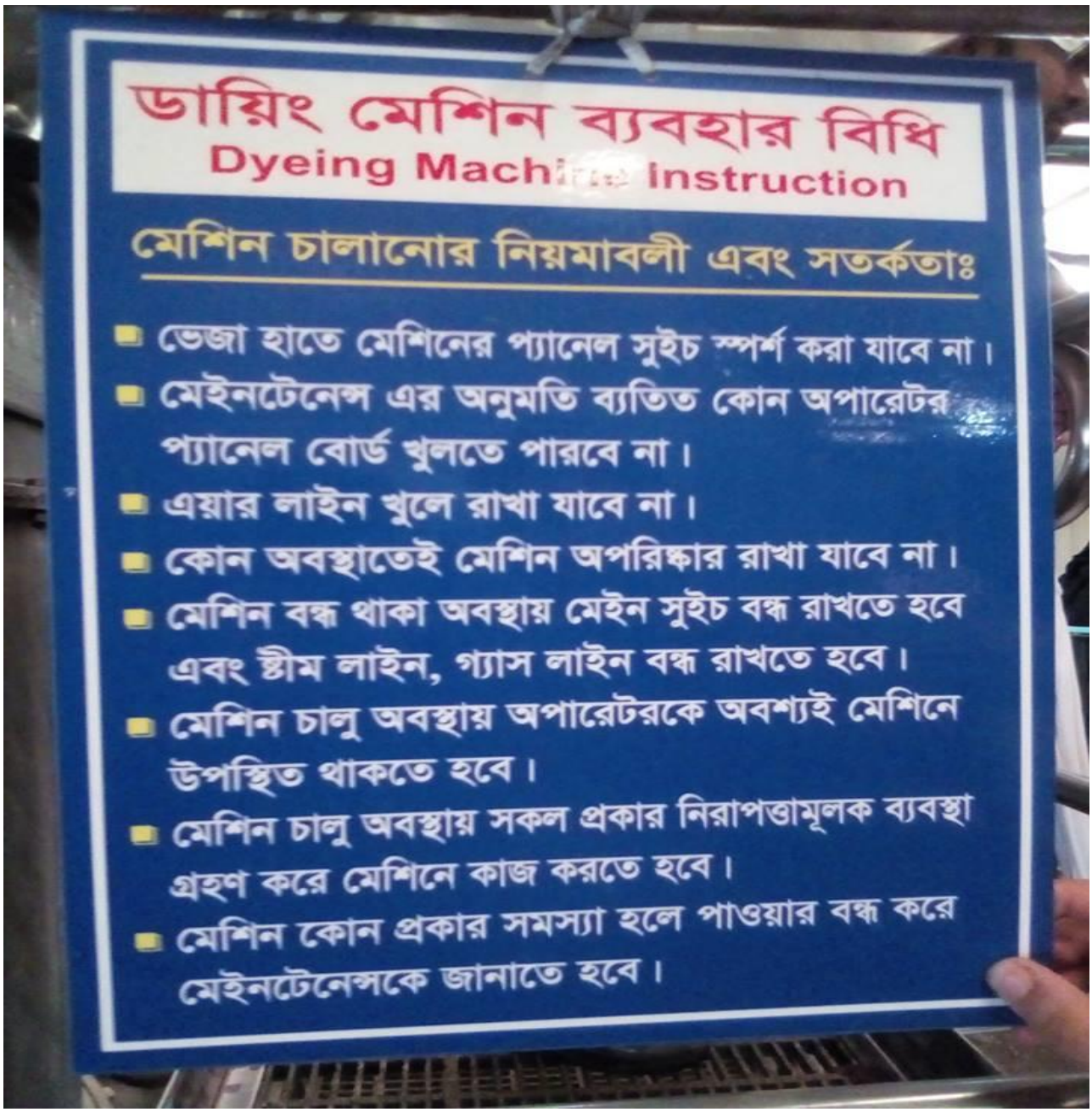
Finishing

Inspection

Packing

Delivery

Dyeing machine using Instruction:



3.2.5.1 figure using of dyeing machine

3.2.6 Dryer Machine

3.2.6.1Image : Dryer machine

It is important to know about the efficiency of the dryer and production capacity.

Function of Dryer:

Various types of functions are achieved by the dryer. Following functions are most common.

- To dry the fabric.
- To control the overfeed system.

⊙ To control the vibration which increase the G.S.M

3.2.7Hydro Extractor Machine

❒ **Functions of Hydro-extractor:**

3.2.8 Common faults in dyeing & their causes & remedies

1. **Crack, Rope & Crease Marks:**

Causes:

- ✶ Poor opening of the fabric rope.
- ✶ Shock cooling of synthetic material.
- ✶ Incorrect process procedure.

- Higher fabric speed.

Remedies:

- Pre-Heat setting.
- Lower rate rising and cooling the temperature.
- Reducing the machine load.
- Higher liquor ratio.

2.Patches:

Causes:

- Improper Soda dosing
- Uneven Bleaching
- Machine Stoppage during Production

Remedies:

- Proper Soda dosing & even Bleaching,
- By full Stripping

3. Fabric Distortion and Increase in Width:

Causes:

- Too high material speed
- Low liquor ratio

Remedies:

By decreasing both nozzle pressure & winch speed

4. Dye Stain

Causes:

- Long time storage of dyed fabric before

drying. Remedies:

- By a treatment using Fixing agent before wet fabric storage.
- Can be removed by Hot Washing.

5. Uneven Dyeing:

Causes:

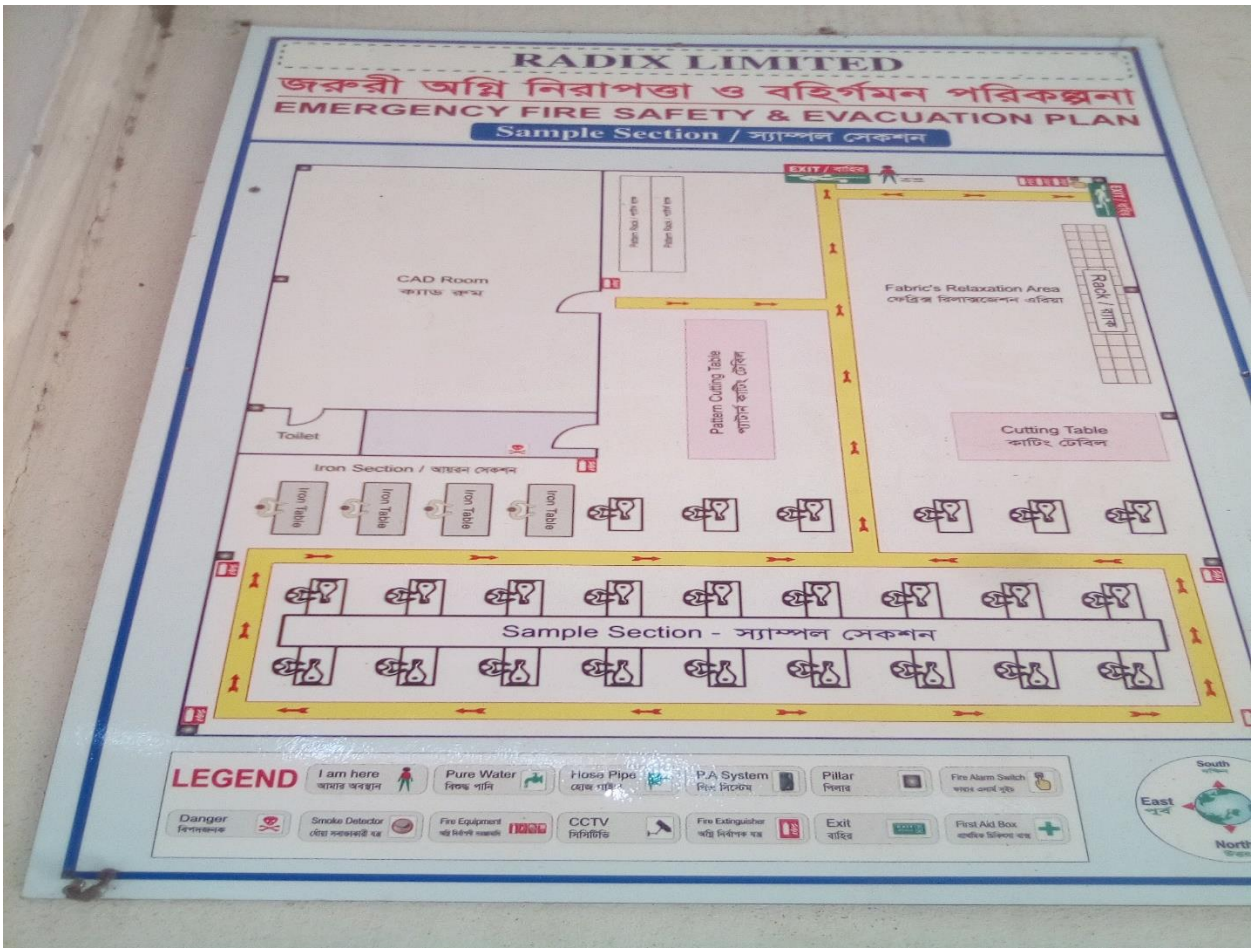
- Uneven pretreatment (uneven scouring, bleaching & mercerizing)
- Uneven heat-setting in case of synthetic fibers

Remedies:

- By ensuring even pretreatment
- By ensuring even heat-setting in case of synthetic fibers

3.3 Sample Section

3.3.1Garment Sample layout



3.3.2 The Details Attached to the Garment Sample

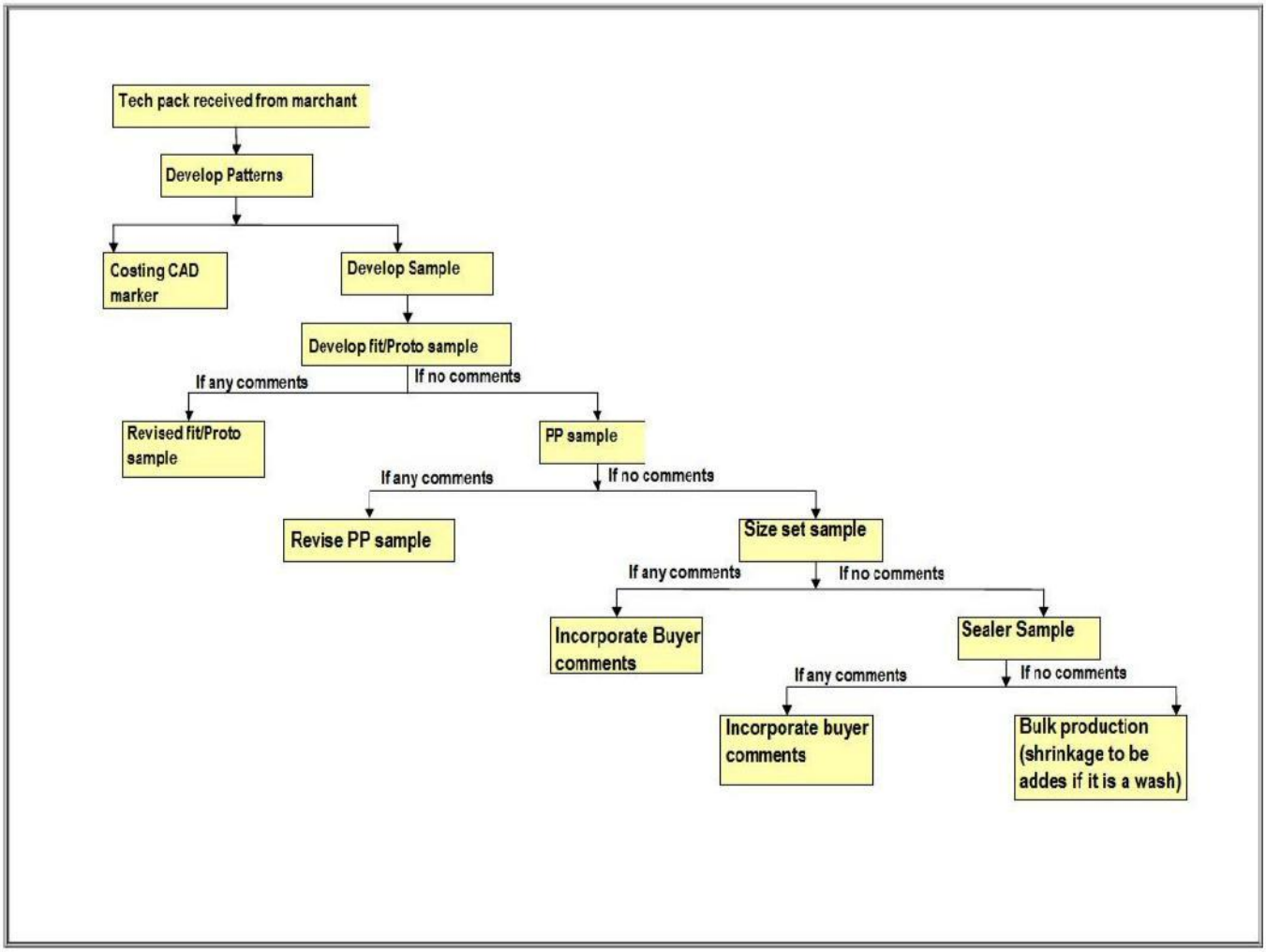
After the confirmation of order, each sample sent to the buyer has the following details attached to it:

- Ref no.

- Color
- Fabric
- Composition
- Description
- Quantity
- Style n0/ Size
- Store

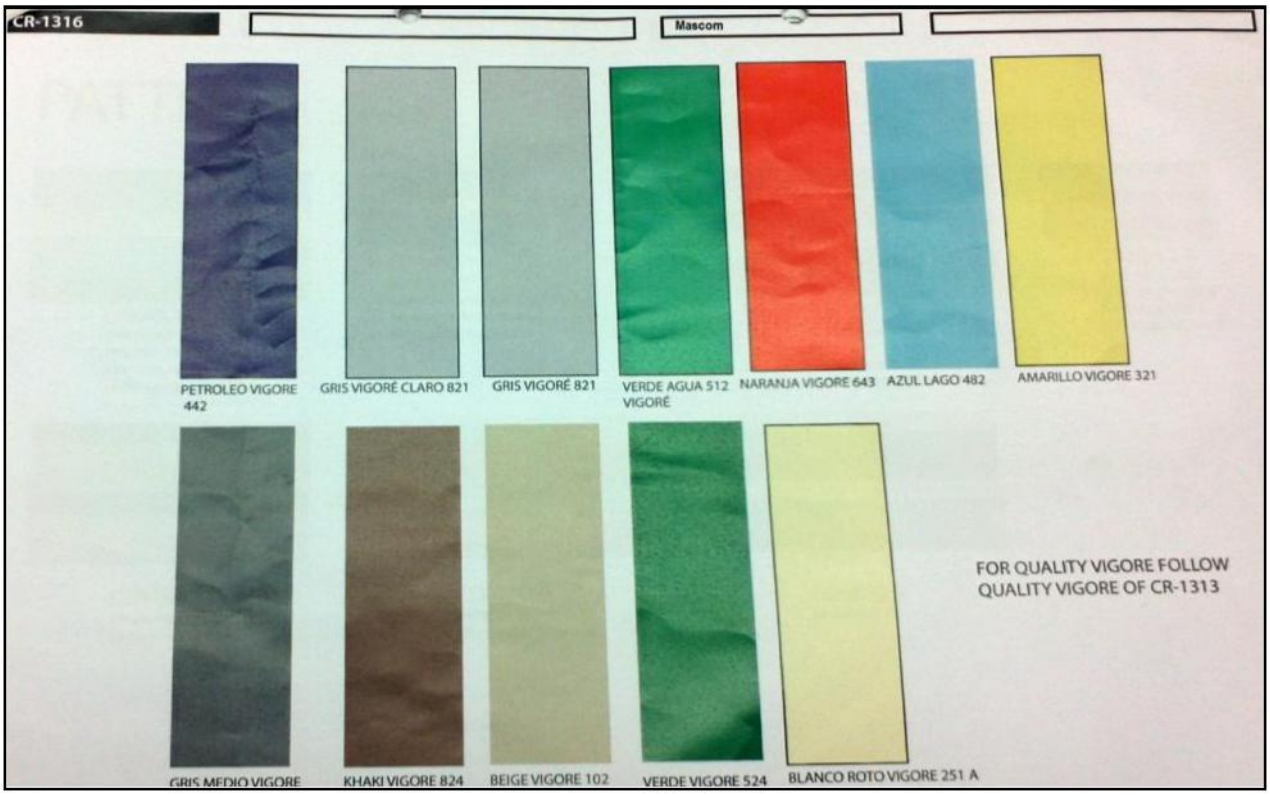
Also as the samples are to be made according to the buyers' price ranges and quality levels, merchandiser has to advise sampling department suitably.

3.3.4Work flow chart of Sampling



3.3.5 Picture of some products before making sample (Scan copy)

Figure-3.3.5.1(i): Three different T-shirt.



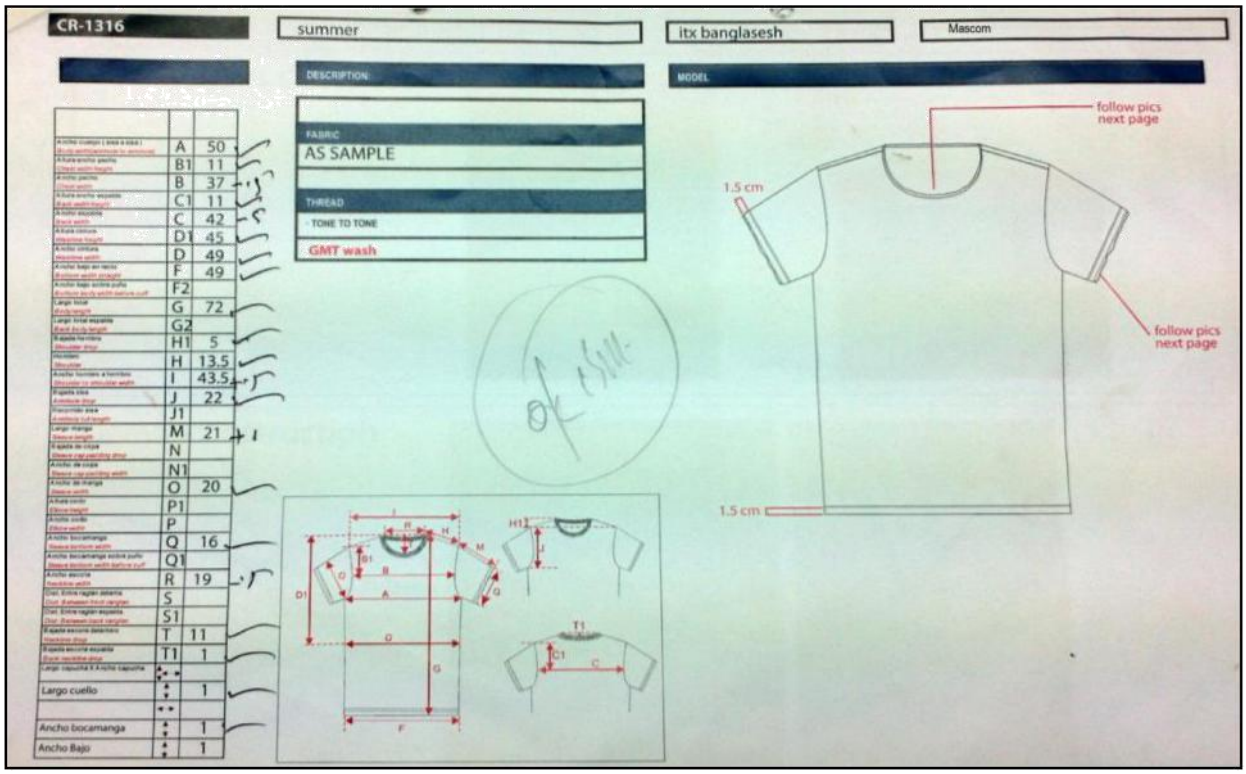


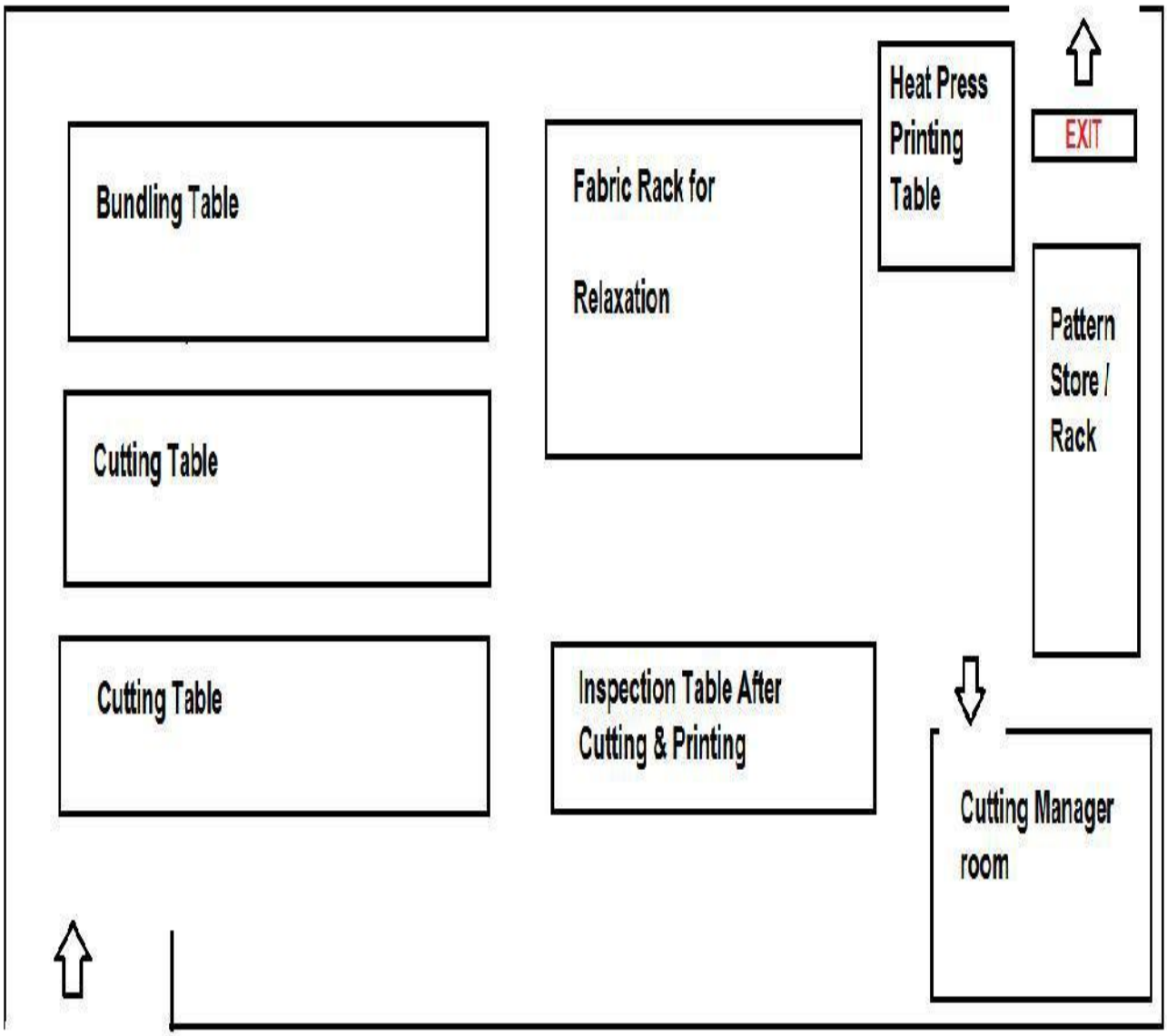
Figure-3.3.2.1(ii): Color code for the Product

Figure-3.3.3.1(v): Pattern of the Print on this product.

3.4 Cutting Section

3.4.10 figure- cutting section

3.4.1Layout plan of Cutting Section



3.4.2 Organogram cutting:

1. Production
2. Manager
3. Incharge
4. Supervisor
5. Operator
6. Helper

3.4.3 Store Section

Function

- Store the materials for order
- Issue and supply the materials to production unit
- Prepare Inventory report

Figure: 3.23 Fabric store

 After receiving fabric for each order then numbering different shade of color of the fabric role.

 Locally and Imported fabric is stored.

 Different types of fabric like 100% cotton single jersey, Terry, Fleece & spandex etc.

3.4.4 Machine in Cutting Section

Figure:3.4.4.1 Fabric cutting machine

Machine name Cutting machine

Specification Model: CSZ-103

Manufacturer: YAMATA

Type: Straight knife

Origin: China

Blade Length: 12”

Blade Width: 1.5 cm

Blade Thickness: .5 mm

Function Used for cutting fabric layer according to maker.

3.4.5 Fabric cutting machine description

3.4.1 Machine name: CUTTING MACHINE

Function Used for numbering the garments parts to avoid

mixer.

Table: 3.13 Numbering machine description

3.1.5 Parts of Cutting Machine with Their Functions

 Plate: To stand the machine and help to move the machine.

 Feed: To hold the layer of fabric by pressure.

 Knife: To cut the layer of fabric precisely.

 Handle: To help to move the whole cutting machine according to design.

 Power switch: It is used to run and stop the machine.

 Oil box: To supply oil or lubricant to the machine parts.

 Motor: To give reciprocating motion to the knife for cutting.

 Sharpening device: To make sharp the knife edge when required.

Major operations

 Spreading

 Marker Placing

 Cutting

 Sorting

 Numbering and checking

3.4.6 Points Should Concern Fabric Cutting

 During Cutting operator must be used metal gloves.

 Precision in cut i.e. the dimension of pattern and fabric parts is cut should be same.

 The cut edge must be cleaned.

 Infused edge.

 Consistency in fabric cutting.

 Support of lay.

 Should position the pattern pieces on the fold or on the grain line as indicated.

 Without shoe operator should not use cutting machine.

 Mask must be used during cutting.

3.4.7 Lay Height

 Single jersey/ spandex/ interlock: Maximum2-2.5”

 Single jersey/Cotton & Others: Maximum 3-4”

 Fleece Maximum 4-4.5”

3.4.7.1 Cutting Table Specification

 Total Cutting Table: 2 pcs

 Table Height: 36.5”

 Table Width: 66”

 Table Length: 294”

3.4.7.2 Wastage during Cutting

 Ends of ply losses.

 Selvedge loss.

 Loss of fabric in roll.

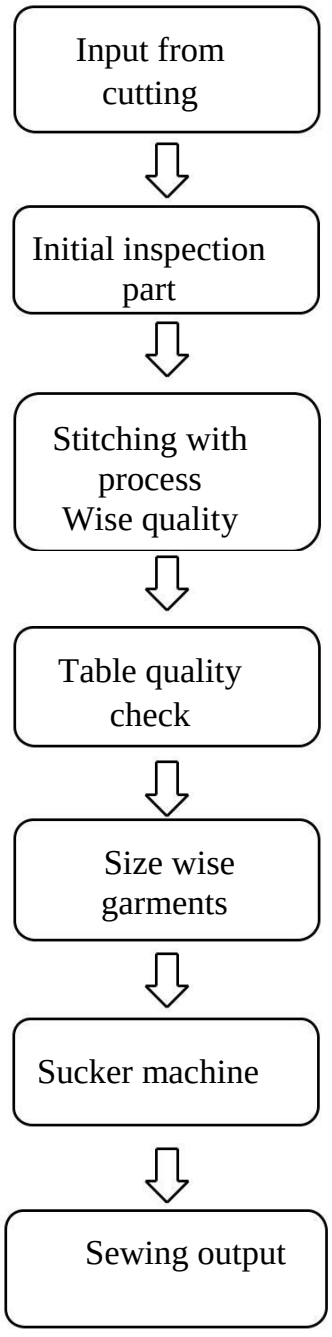
3.5Garment Section

3.5.1 figure: garment section

3.5.1 garment section layout plan

Figure : 3.5.1.1 Layout plan of sewing section

3.5.2 Flow chart of sewing section



3.5.4.2 Sewing quality checking points

- Skip/Drop/Broken stitch
- Raw edge
- Size mistake
- Uneven hem
- Uneven cuff
- Uneven neck
- Uneven shoulder
- Uneven placket
- Uneven pocket
- Twisting
- Without care label
- Open tack
- Sleeve up-down
- Open seam
- Four point up-down
- Shading etc

3.5.1Manufacturing Sequence of Garments

Idea generation

Design/Sketch

Pattern design

Sample making

Production pattern

Grading

Lay planning

Marker making

Fabric spreading

Cutting

Numbering

Sewing

Finishing

Final inspection

Shipment

3.5.2 List of Sewing Machine in Garment Section

Machine Name	Machine Quantity
Plain Stitching m/c	100
Over Lock m/c	100
Flat Lock m/c	60
Button Hole m/c	07
Button Stitching m/c	07
Bar Tack m/c	10
Pico ting m/c	02
Plain zigzag m/c	02
Kansai m/c	06
Two Needle Chain Stitching m/c	20
Two Needle Lock Stitching m/c	05
Shuttle Stitching m/c	02
Fusing m/c	08
Heat Transfer m/c	05

3.5.3 Images of different sewing M/c of Mascom:

IMG.3.5.3.1: SINGLE NEEDLE LOCK STITCH MACHINE

IMG.3.52.1: Flat Lock M/C

IMG.3.5.3.1: Bar tack machine

IMG3.5.4.1:Button Hole machine

IMAGE.3..5.5.1: over lock machine

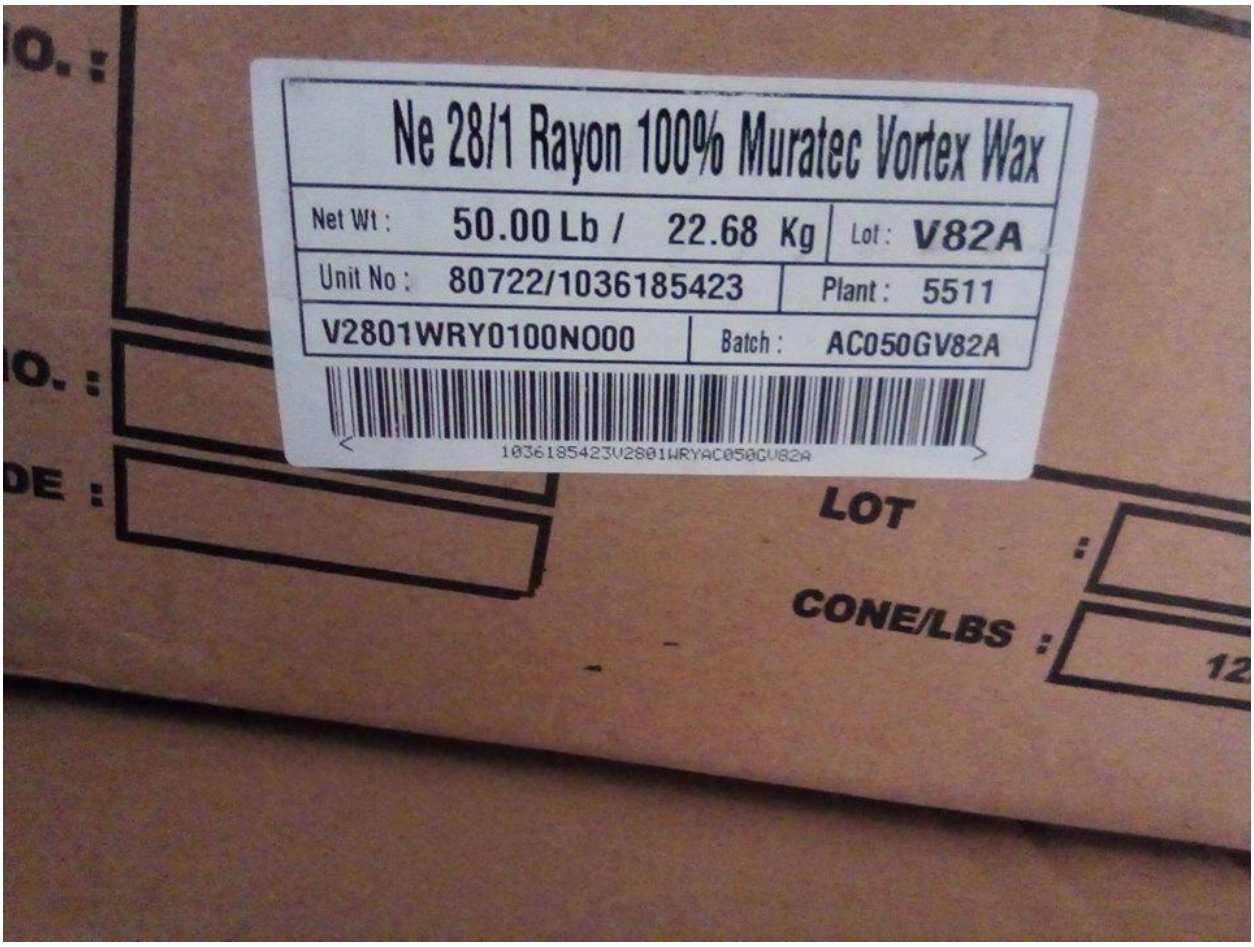
Figure: Different types of sewing Machine

3.5.4 Sewing Machine Origin:

Brand Name	**Country**
Juki	Japan
Pegasus	Japan
Kansai	Japan
Brother	Japan
Pup	Japan
Sun Star	Korea
Reece	Japan

3.5.6 Trims & accessories used in Mascom Composite Ltd.

- Label
- Button
- Zipper
- Elastic
- Velcro tape
- Sewing thread
- Rivet
- Mobilon Tape
- Shoulder Tape
- Padding
- Stopper
- Logo print
- Cord belt
- Buckle
- Weaving belt



1) carton of the shipment product of mascom composite ltd.
    - Poly bag ,
        - Tissue paper
        - Elastic bag
        - Back board
        - Mini poly bag
        - Neck board
        - Master carton
        - Butterfly
        - Inner carton
        - Numbering sticker

3.6Finishing Section

Includes the final treatment of every kind of fabric made from every kind of fiber. According to Textile Terms and Definition the Finishing describe as, “Descriptive processes.

Figure 3.11: Finishing section

3.6.1 Process flow chart of garment finishing

Thread Suction (Thread Sucker M/c)

⇩

Ironing

⇩

Quality Check

(Sewing defect, Spot defect check)

⇩

Metal Detection

⇩

Accessories Attach

(Hang Tag, Price Tag, Hanger, Sticker, Security Alarm etc.)

⇩

QA Inspection

Folding/Rolling

Assortment

QA Supervision

Cartooning/Packaging

Ready to shipment

3.6.2 Materials used in garment finishing

- board
- T-clip
- Metal clip
- Cuff link
- Droop loop
- Cable tie
- Boa tie
- Full board
- Hand tag
- Tag pin
- Tissue paper
- Al pin
- Ball pin
- Elastic clip
- Hanger
- Poly bag
- Size sticker

3.6.3 Major operations

3.6.3.1 Spot removing

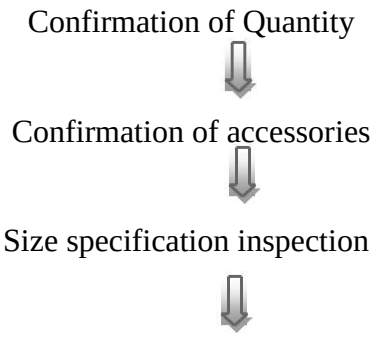
The General Rules of Spot Removing

1. The longer a stain remains, the tougher it is to remove.
2. Always treat a stain before laundering.

STAIN TYPE	Chemical Used (Commercial Name)
Oil stain	Spot lifter
General stain	Thinner
Ink stain	Thinner

3.6.3.2 Ironing

3.6.3.3 Flow chart of garment inspection



In side
Inspection

⇩

Outside Inspection

⇩

Final Inspection

⇩

Packing

3.6.4 Types of finishing

i. Chemical Finishing:

- ✶ Chemical reaction of auxiliaries with fibers.
- ✶ Application of the handle modifying products/additives.

ii. Mechanical Finishing:

Mechanical treatment with machine

Figure 3.12: Spot Lifter & Aceton

3.6.4Different effect found after finishing

I. Good abrasion resistance.
II. Improved tear strength.
III. Good sew ability.
IV. Soft or stiff handle.
V. Shine or luster
VI. Easy Care.
VII. Crease recovery.
VIII. Dimensional stability.

3.6.5 Finishing Work in Process

Checker Ironing Top side

Check

Asymmetic

Check

Hangtag

Attach Folding

3.6.1 figure hang tag of garments

Assortment Poly Carton

Finishing Work in Process

Different Type’s Machineries with Functions in Finishing Section

Boiler

Application:

 Supply power to the iron for ironing.

Iron

Application:

 Use for ironing the garments.

Spot Removing Gun

Application:

 Used for removing spot from the garments.

Oil spot Removing Spray

Application:

 Applied for removing oil spot from garments.

Hand Trimmer

Application:

 Use to cut off extra threads from the garments.

Tag Gun

Application:

 Used for attach hang tag to the finished garments.

Figure: 3.8.19 Grinding Machine

Specification

- Model: MD-150
- 500W
- 220-240V/50-60Hz
- 2950rpm

3.6.6 Application:

- Used to sharpen scissors and hand trimmers.

3.6.7 Attachment in garments

Final inspection when done then labor are done these process:

Hang tag attach Hang tags are attached with a garment, such as,

a) Price tag

b) Tag of garment type

These hang tags are attached with garment either by hand or by hang tag machine.

Folding Pressed garments are folded in a specific dimension. This work is usually done by women labors.

3.9.1 Store room of Mascom Composite Ltd.

Poly In this section garments are packed in poly.

Carton Poly is filled in carton

3.7Merchandising Section

There are two types of merchandising done in exports garment.

i. Marketing merchandising.

ii. Product merchandising.

3.7.1 Marketing merchandising:

Main function of marketing merchandising is

- Product Development
- Costing

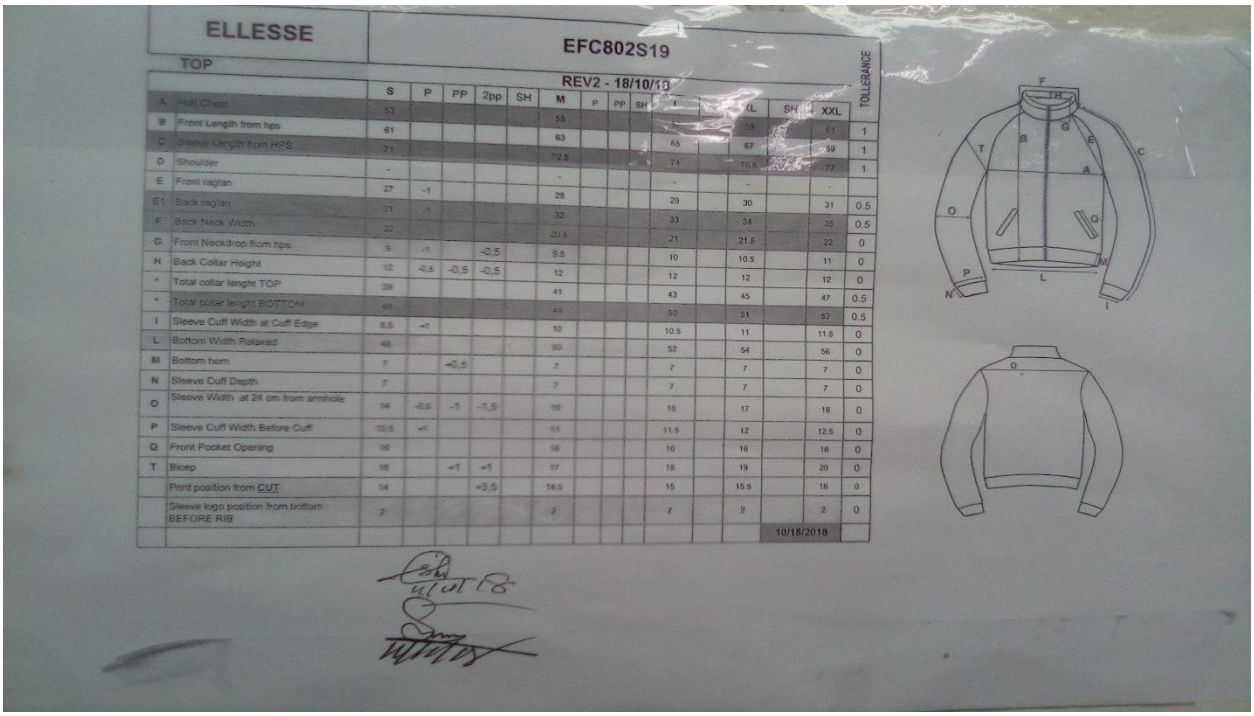


Fig 3.7.2.1: Measurement sheet of merchandising

3.7.2 Department Structure:

Marketing Merchandiser

Head Merchandiser

Senior Merchandiser

Junior Merchandiser

3.7.3 Process Flow Chart of Merchandising:

Receive product package form buyer

Sample development

Price negotiation

Order confirmation and receive order sheet.

Sourcing low good quality right time

Material collection and receive it in factory

Check and listing

Swart card making and approval

Pre production meeting

Daily collect daily production report and daily quality report

Arrange final inspection

Shipment

3.7.4Different types of merchandising Tack pack

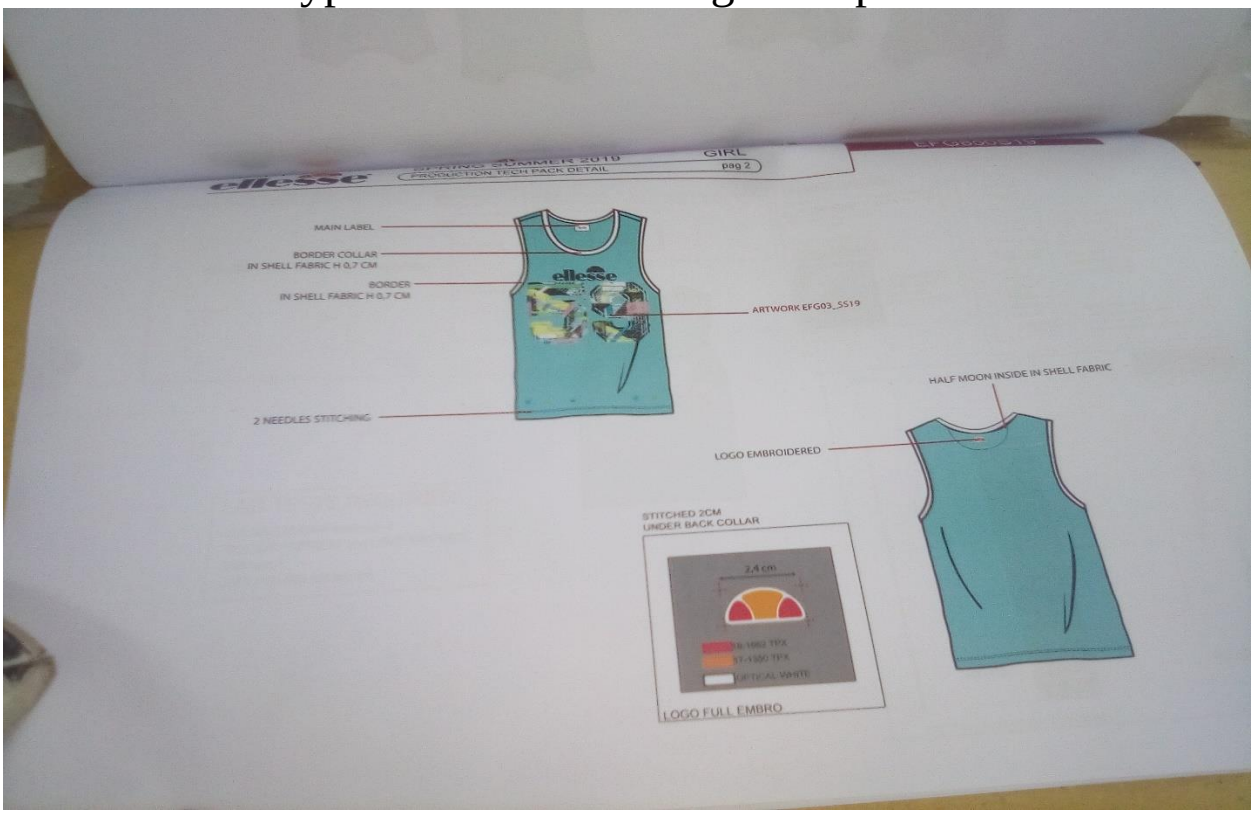


Fig 3.7.4.2.1 Tack pack details of merchandising

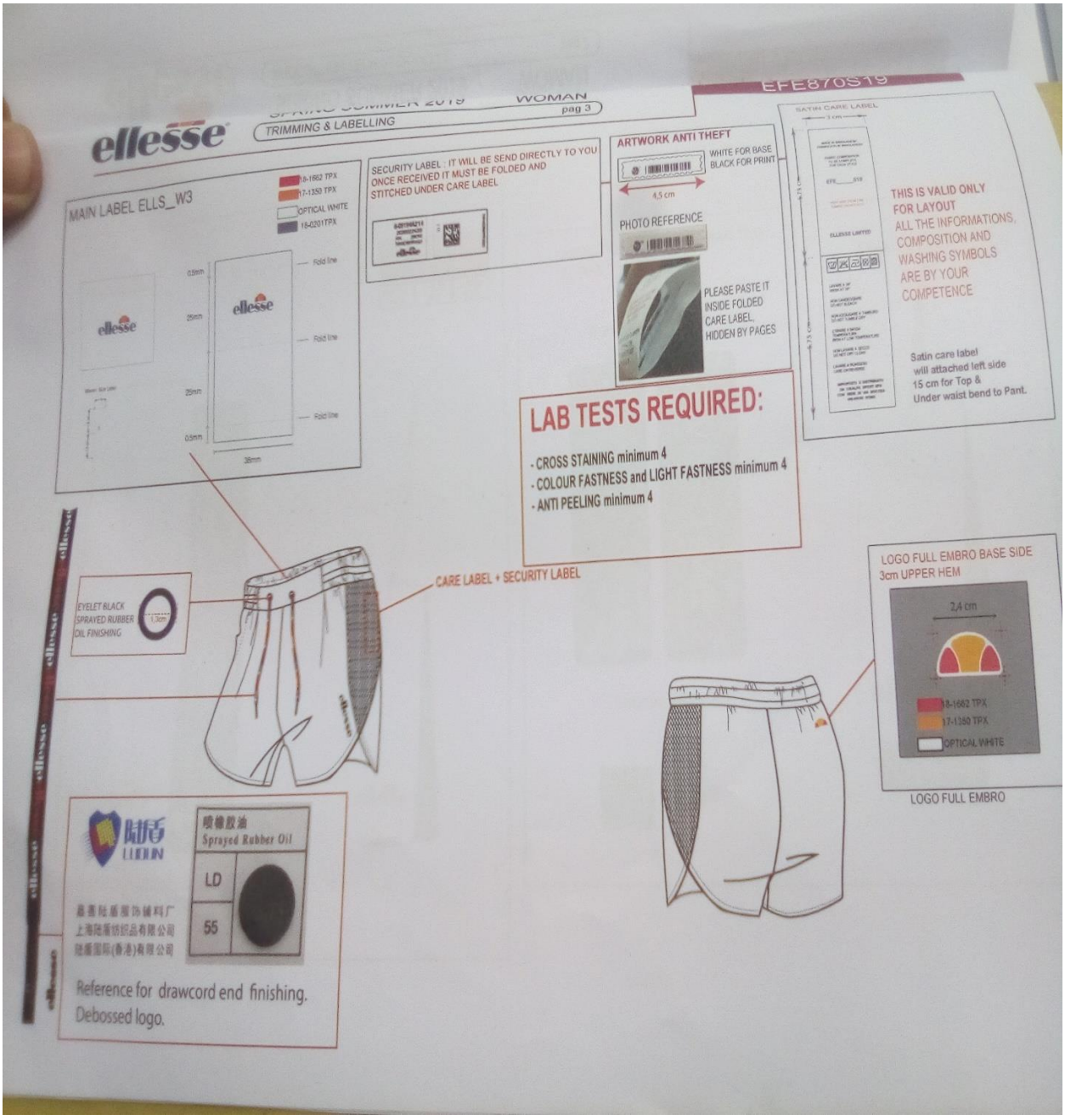


Fig 3.7.3.1: Ellese (BUYER) Tack pack details

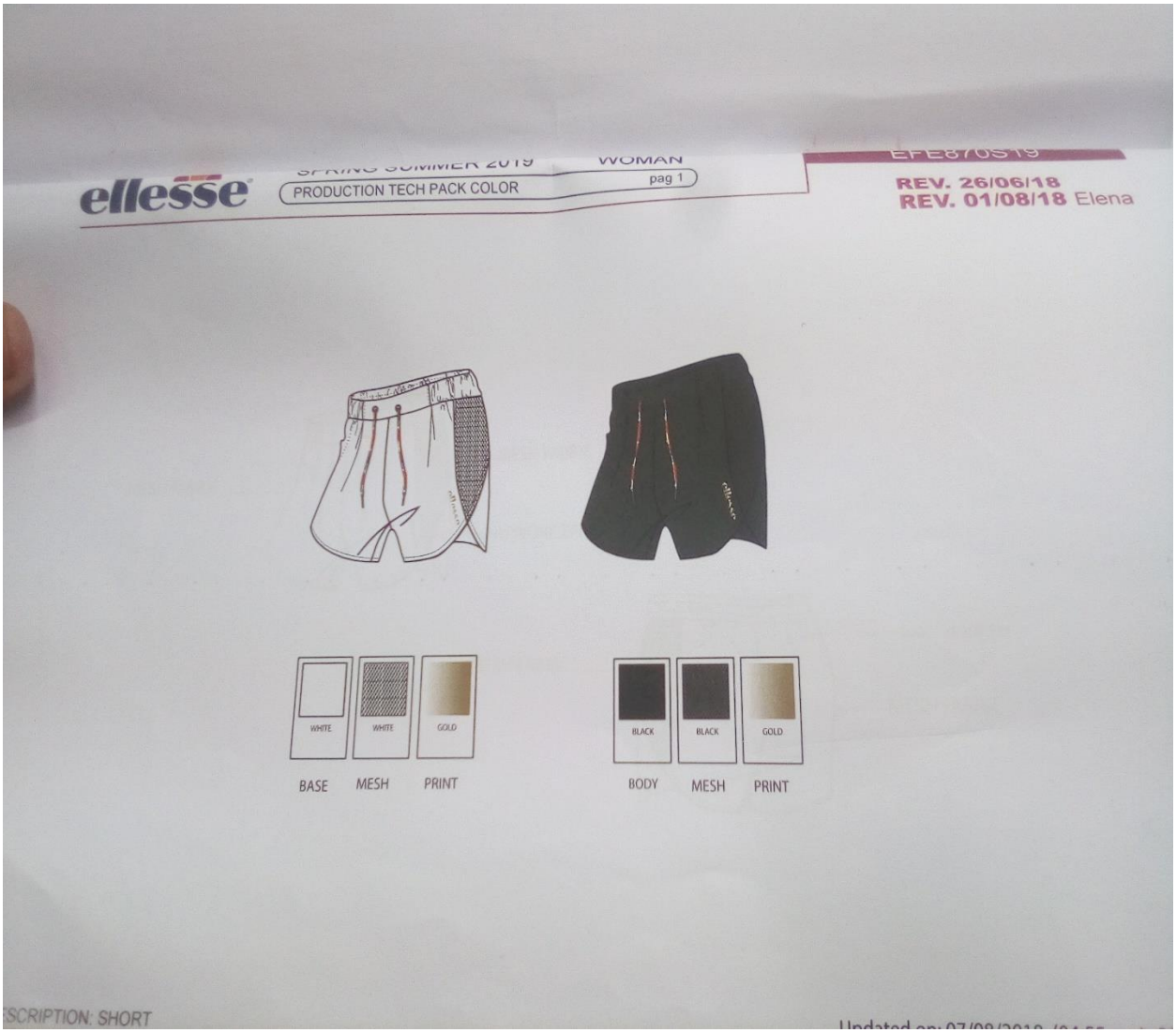


Fig 3.7.3.2.1 : Tack pack 2 short pant details with color

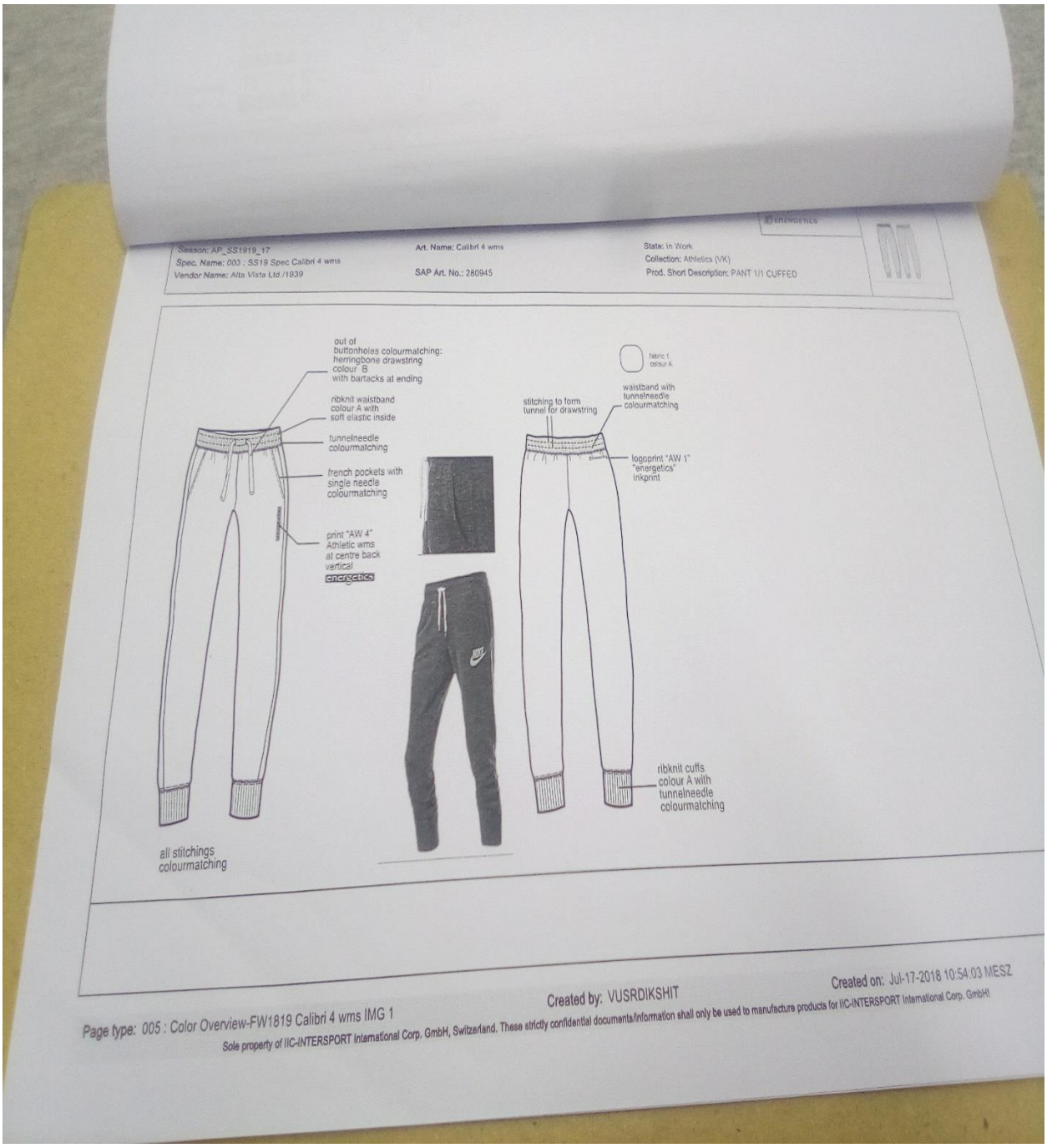


Fig3.7.3.4.1: measurement details with tack pack of merchandising

3.7.3 Merchandiser key responsibility

- Product Development
- Market and product Analysis
- Selling the concept
- Booking orders
- Confirming Deliveries
- Designing and Sampling
- Costing
- Raw Material
- Flow Monitoring
- Production Follow Ups
- Payments Follows
- Internal & external communication,
- Sampling
- Lab dips
- Accessories & trim
- Preparing internal order sheets

3.7.6 Important Terms Needed for a Merchandiser

Textile Export Control :

Allocation of quota, Textile Export Licenses & Quota Classification.

Trade Terms

Transport terms, shipping terms, Terms of trade & Terms of payment.

Inspection System

Fabric Inspection & Garment Inspection.

Testing Method

Abrasion resistance, Bursting strength, Color fastness, Dimensional stability, Flammability, Seam strength/slippage, Tear strength& Tensile strength.

Size Measurement or BOM (Bill of Manufacturing

Boxers, Pajama Bottom, Jeans, Pants, Short, Skirt, Blazer, Coat, Jacket, Vest,
Dress, Pajama Top, Gown, Sleep shirt, Woven Shirt, Blouse, Woven Shirt,
Knit Top & Sweater.

Care labeling systems

American care labeling system, Australian care labeling system, International Care Labeling system, Japanese care labeling system & Canadian care labeling system.

3.7.7Job of a merchandiser in details

The job of a merchandiser can be divided into the below areas:

- ✦ Sampling
- ✦ Production
- ✦ Commercial

After receiving the order sheet merchandiser has to study the order sheet very carefully. He has to check the main points of the order sheet. Such as :

- Order No.
- Style No.
- Price of the product
- Item description
- Fabric details
- Styling
- Price

CHAPTER-04

4.1Impact of Internship

4.2 knitting section :

From knitting section we have learnt about-

Different types of fabric. (e.g; fleece, terry, cross terry, Lacoste)

- GSM of the fabric
- The Dia. of the machine
- The gauge of the machine.
- The construction of fabric.

4.3 Dyeing Section:

From dyeing section, we have learnt about: -

- Different types of dyeing machine
- Liquor ratio
- Different section of dyeing
- Recipes of dyeing

4.4 Cutting Section:

In cutting section we have learned about the following topics:

- □ Know about different types of fabric and their cutting process.
- □ Know about marker.
- □ Know how to make marker for production.
- □ Know how to improve marker efficiency.
- □ Know about fabric spreading procedure.
- □ Introduced to cutting machine.
- □ Learn how different types of fabric cutting is done.

4.5 Sewing Section:

In sewing section, we have learned about the following topics:

- Introducing different types of sewing machine.

- ❖ Know about different types of sewing machine function.
- ❖ Know about different type of stich.
- ❖ Inspection procedure of buyer.
- ❖ Maintenance section working process.

4.6 Finishing Section:

- ❖ In Finishing section, we have learned about the following topics:
- ❖ Different types of finishing process.
- ❖ Know about the temperature of ironing
- ❖ Different types of machines and accessories used in finishing.
- ❖ How the processes are done.
- ❖ What kinds of faults are found in finishing and their remedies.

4.7 Merchandising section:

In Merchandising section learnt about these following: -

- Know about Product Development
- Market and product Analysis
- By done the Selling the concept
- By Booking orders
- Confirming Deliveries
- For Designing and Sampling
- Costing
- Raw Material booking
- Flow Monitoring
- Production Follow Ups
- Payments Follows
- Internal & external communication development with buyers.

CHAPTER 05
Conclusion

Industrial training is an important and essential part of education. It gives me an opportunity to compare the theoretical knowledge with practical facts and thus develop my knowledge and skills. This industrial training also gives me an opportunity to enlarge my knowledge of textile administration, production planning, procurement system, production process, and machineries and teaches me how to adjust with the industrial life.We are very lucky to perform my industrial training in **Mascom Composite Ltd.** It has a huge production capacity with a very efficient production team. It has a very good, well equipped and modern laboratories and producing a wide range of color. During my training period I have noticed that they are very concern about their quality and they rarely have any quality complain. The management is very organized, pre-active and co-operative.