



Faculty of Engineering
Department of Textile Engineering

REPORT ON
Industrial Attachment
At
ASIAN TEXTILE MILLS LTD
Fatullah, Narayanganj.

Course Title: Industrial Attachment
Course Code: TE-431

Submitted By

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Supervised By

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Assistant Professor

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 February 13, 2018 to April 12, 2018

A report on
ASIAN TEXTILE MILLS LTD

DECLARATION

I hereby declare that, this internship has been done by me, Department of Textile Engineering, Faculty of Engineering, Daffodil International University. I also declare that, neither this report nor any part of this has been submitted elsewhere for award of any degree or diploma.

Jeni

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Department of TE

Daffodil International University

Faculty of Engineering

Department of Textile Engineering

Approval Sheet

The internship report on **ASIAN TEXTILE MILLS LTD** is prepared by **Jeni** of bearing **ID: 152-23-4416**. This report is submitted in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN TEXTILE ENGINEERING**. The whole report is prepared under my supervision and guidelines. During the internship the student was found sincere, punctual and hard working. I wish him every success in life.

Abdullah Al Mamun

Assistant Professor

Department of Textile Engineering

Faculty of Engineering

Daffodil International University

ACKNOWLEDGEMENT

All pleasure goes to the Almighty Allah to give me strength and ability to complete my two months long industrial attachment at **ASIAN TEXTILE MILLS LTD**. It was a great opportunity for me to complete the industrial attachment with the assistance of persons employed in Industry name.

I feel grateful to my academic supervisor **Abdullah Al Mamun**, Assistant Professor, Department of Textile Engineering, Faculty of Engineering, Daffodil international University as well as to **Md. Munsur Rahman (Mondal)**, **Executive Director**, my factory supervisor for their continuously guiding me about the development and preparation of this training report. They have enriched me with sharing necessary theoretical and practical ideas and supervised me to complete this report on time.

I would like to express my thanks to **Prof. Dr. Md. Mahbub ul Haque**, Head, Department of Textile Engineering, Faculty of Engineering, Daffodil international University for his kind help to finish our training report. I would like to express our thanks to **Prof. Dr. Md. Zulhash Uddin**, Dean, BUTex for providing me necessary information to complete the report.

I am also grateful to the supervisors, technicians, operators and all other staffs of **ASIAN TEXTILE MILLS LTD**, who were most cordial and helpful to me during the tenure of internship.

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

Dedication

We dedicate this report to our **Parents** who give us chance to study in Textile Engineering and support us all time.

Specially Dedicate this report **Md. Tajminur Rahman Jewel**, Manager (Marketing & Merchandising) Of MusTex Bangladesh Ltd and all the people who have helped us in the Asian Textile Mills Ltd. to complete this report.

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CHAPTER-1
EXECUTIVE SUMMARY

CHAPTER-1

EXECUTIVE SUMMARY

I performed my internship on Asian Textile Mills Ltd. Which is situated on Shashongaon, Enayetnagar, Fatullah in Narayangonj. The length of our training period during two months. I was joining my training on February 13, 2018 and it halted on April 13, 2018. Asian Textile Mills is one of the biggest woven dyeing industries in Bangladesh. It is established in 2000, Asian group is a relatively young company. In a short span the company received the recognition as one of the market leaders. In this industry there are several sections such as Pre-treatment, Dyeing, Printing, Finishing and Yarn dyeing. All of this section is help us to improve our knowledge. Pre-treatment section include as singeing, Desizing, Souring, Bleaching, Mercerizing. On the other hand, there are three types of dyeing process is performed by Asian Textile Mills Ltd. Thermasol dyeing machine is providing for the process of continuous dyeing and pad-batch dyeing machine is used for semi-continuous dyeing process. In local dyeing section is known as discontinuous dyeing process which is performed by Jet dyeing machine, Jigger dyeing machine, Winch machine and so on. Asian Textile Mills Ltd. has a richer finishing section than any other textile industry. There are three Stenter machine, one Sanforising machine, one Emerizing, one calendering and so on.

In Asian Textile Mill also provide printing of fabrics. Normally two kind of printing is done by Asian group. Rotary screen printing seems like to continuous printing process. On the other hand, flat bed screen printing is known as discontinuous dyeing process.

CHAPTER-2
INFORMATION ABOUT FACTORY

CHAPTER-2

INFORMATION ABOUT FACTORY

2.1 Information about Factory

2.2.1 Company Profile:

COMPANY NAME	: Asian Textile Mills Ltd.
CHAIRMAN	: Harun-or-Rashid
FACTORY ADDRESS	: Shashongaon, Enayetnagor, Fatollah, Narayangonj.
HEADOFFICE	: Dilkusha Centre, 28 Dilkusha C/A, Forth flour, suite# 404, Dhaka-1000, Bangladesh.
TOTAL WORKFORCE	: Almost 800
DATE OF INCORPORATION	: 2000

c

2.2.2 Location Layout

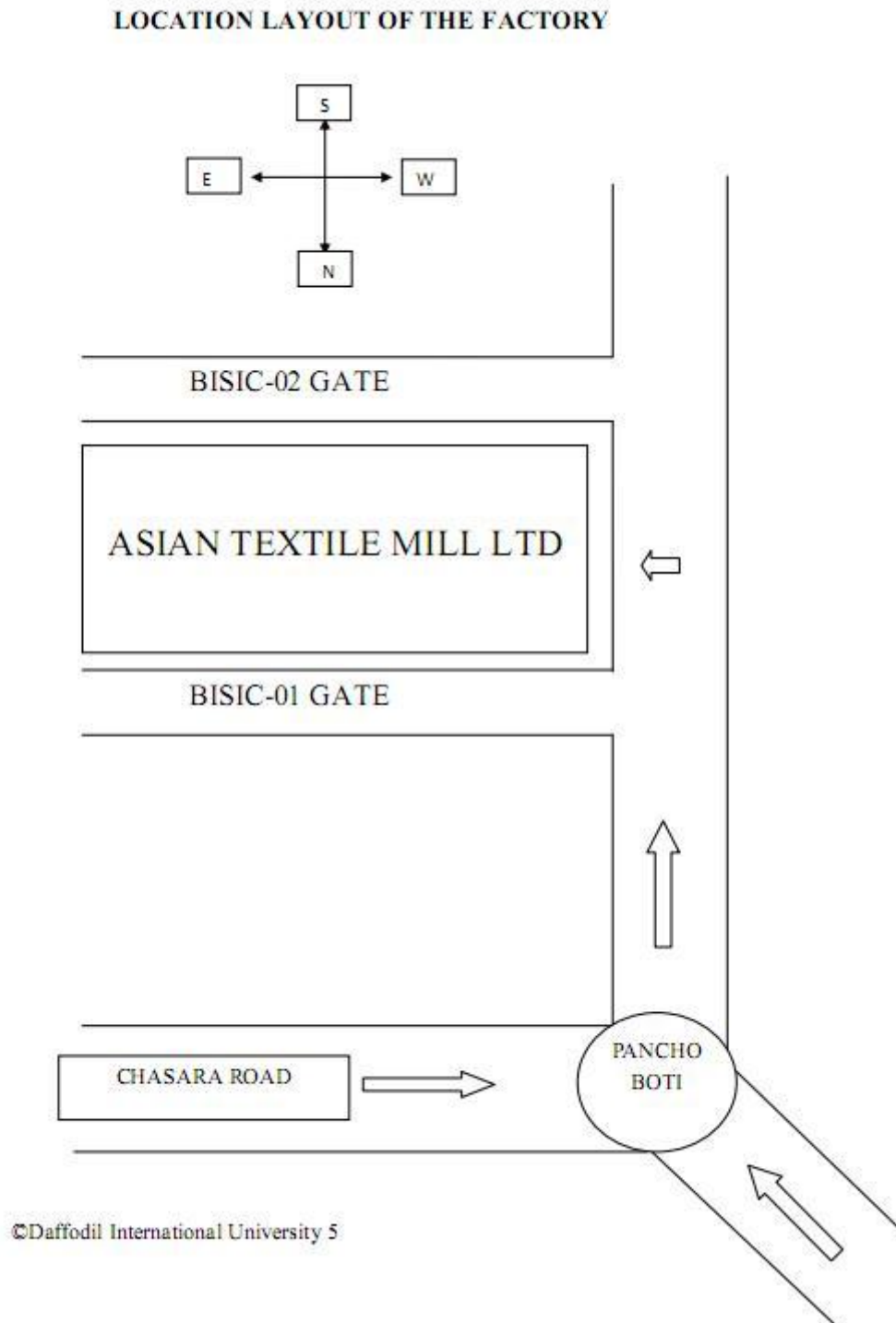


Figure: 2.1 Location Layout

2.2.3 Factory Layout

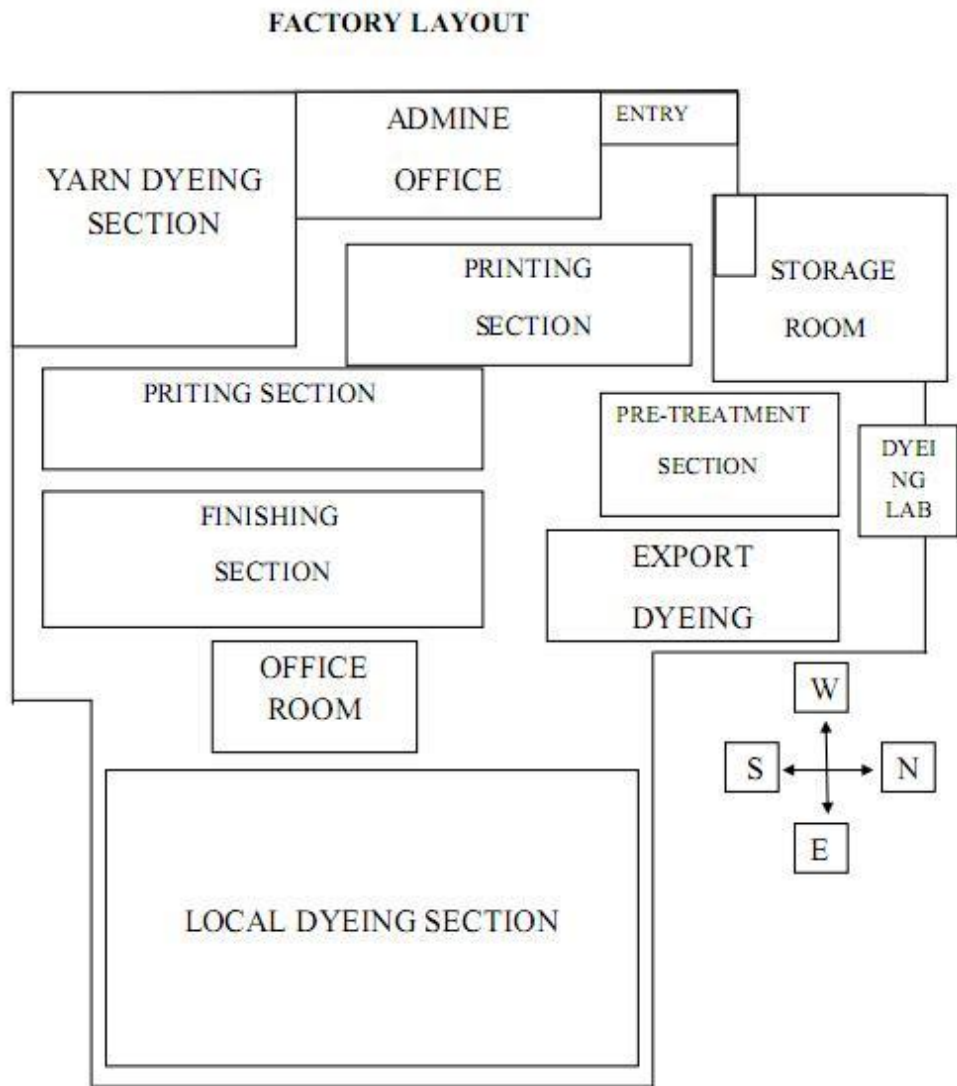
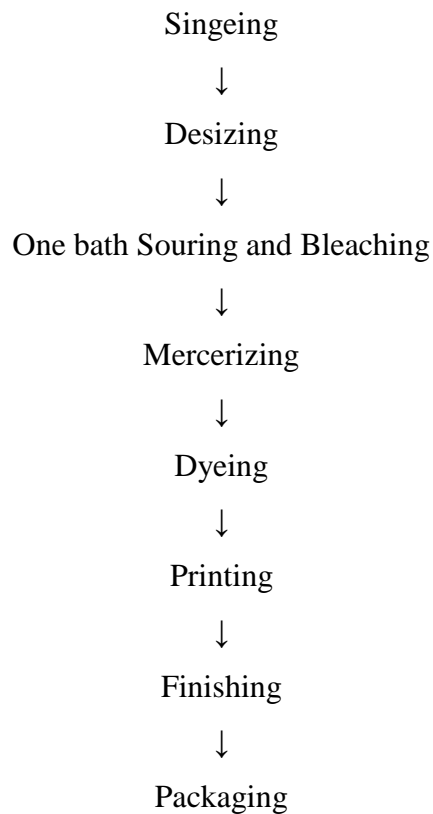


Figure: 2.2 Factory Layout

2.2.4 Different Sections of the Company



2.2.5 Supporting Department:

There is sort of section of supporting department of Asian Textile Industry, which is helping to increment the production parameter in different kind of machineries.

Supporting department includes:

- H. R. Admin
- Finance department
- Power department
- Maintenance department
- Boiler department
- Mechanical department
- Effluent Treatment Plan (On Construction).
- Buying House.
- ETC.

2.2.6 Name of the Products Company Export:

There are lots of products which is export Asian Textile Mills Ltd. specially woven fabric such as:

- Poplin.
- Twills.
- Canvas.
- Small box Rib stops 100% combed cotton.
- Big box Rib stops 100% combed cotton.
- Different construction of T/C fabric.
- Stretch.

CHAPTER-3
DETAILS OF ATTACHMENT

CHAPTER-3

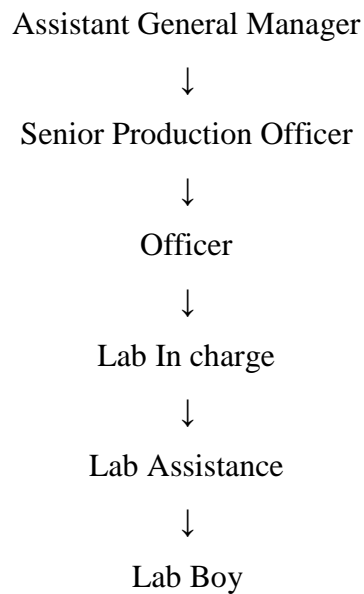
DETAILS OF ATTACHMENT

3.1 DYEING LABORATORY SECTION

3.1.1 Introduction:

In the dyeing laboratory section sample is dyed and match with the buyer sample according to the buyer requirements (similar shade & so on). In the dyeing laboratory section, a lab dip is prepared. Depending on the development sample dyeing and bulk production dyeing planning is done.

3.1.2 Organogram:



3.1.3 Dyeing Laboratory Section Layout

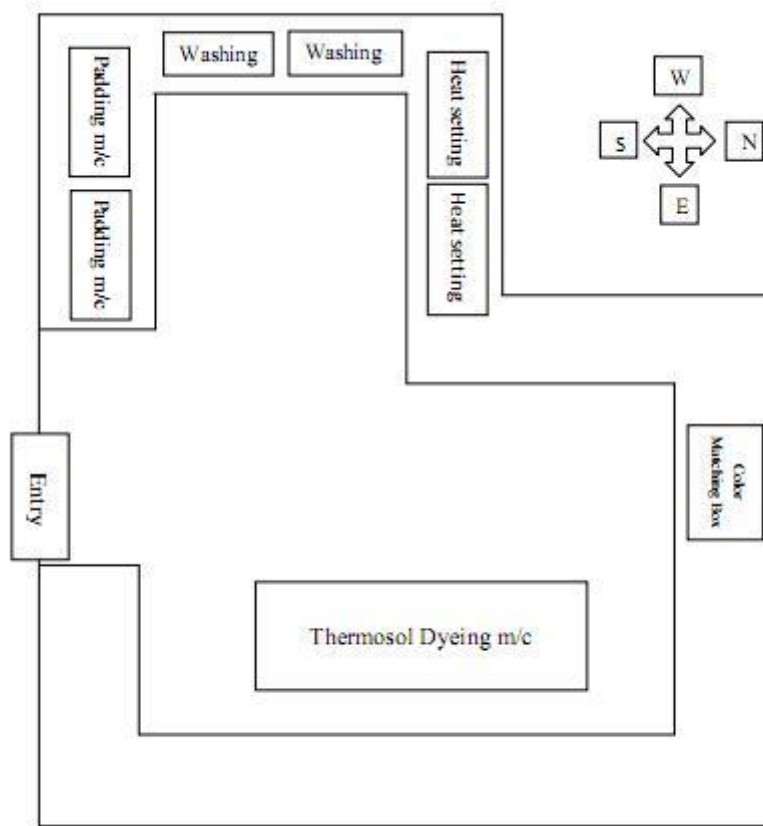


Figure: 3.1 Dyeing Laboratory Section Layout

3.1.4 Machine Specification Used in Dyeing Lab

Padding Machine

Machine name : Padder
Brand name : KUMAR ENTERPRISE.
Origin : INDIA.
Take up% : 65%

Padding Machine

Machine name : Padder
Brand name : KUMAR ENTERPRISE.
Origin : INDIA.
Take up% : 70%

Heat & Time Setting Machine

Machine name : Steam.
Brand name : FONGS.
Origin : JAPAN.
Temperature : 60°C
Use : For cotton

Heat & Time Setting Machine

Machine name : Steam.
Brand name : FONGS.
Origin : JAPAN.
Temperature : 135 °C
Use : For polyester.

Color Matching Box

Machine name : Color Matching Chamber.
Brand name : HAIYANG.
Origin : CHINA.
Use : For Shade Matching in different light source.

Iron:

Machine name : Iron
Brand name : HAIYANG
Origin : CHINA
Use : To dry the sample

3.1.5 Importance and development of lab dip

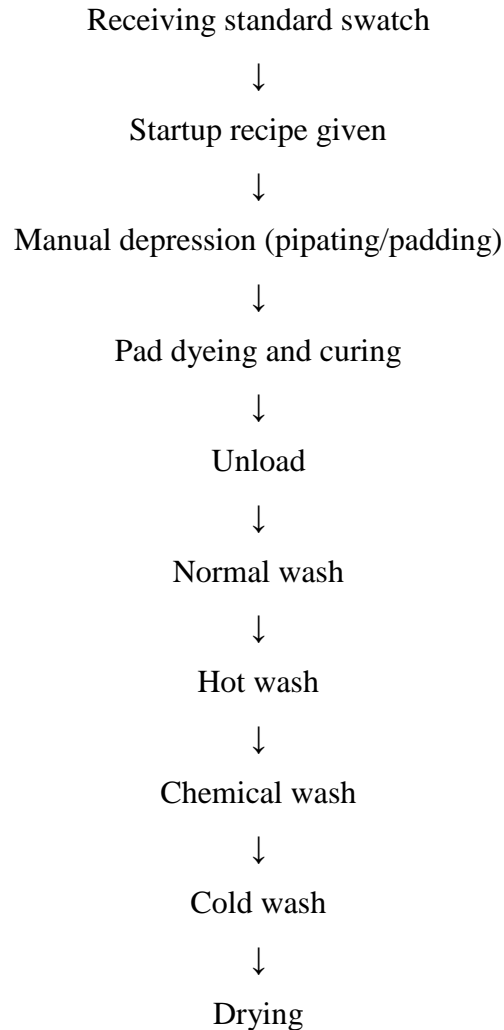
Definition:

Lap dip development means the sample which is dyed according to buyer's requirements (similar shade and so on). Depending on lab dip development sample dyeing and bulk production dyeing planning dine.

3.1.6 Objectives of Lab Dip:

- The main objectives in lab dip are as follows:
- To calculate the recipe for sample dyeing.
- To compare dyed sample with swatch by light box.
- Finally, approved lab-dip (Grade-ABC).

3.1.7 Process Sequence for development of Lab Dip:



3.1.8 Color measurement of standard sample:

Color measurement is mainly done for the purpose of shade matching as perfectly as possible. Shade matching of the produced sample with the standard one is compulsory. Color measurement can be done by two methods-

1. Manual method
2. Instrumental method

3.1.9 Manual Method:

In manual method, the std. samples color is measured by comparing it with previously produced samples of different tri-chromatic color combination. The sample with which the color of the std. matched, that sample's color recipe is being taken for shade matching. This method accuracy completely depends on the vision of the person related to it person must be needed gather experience about color matching.

Some Dyeing Process (In Lab):

- Reactive dyeing
- Vat dyeing
- Disperse dyeing
- Sulphur dyeing

Reactive Dye:

- At first we take 200ml water. Then we carried out water from the 200ml water followed by recipe
- Then we take eh, urea, soda mixed with the water and make solution. Then take dyes and mixed with the solution.
- Then we take 5gm sample which is mixed with the solution and dyeing with help of padder machine.
- Then the dyeing sample put on steam at 60 for 45 min.
- After 45 min the dyed sample rinsed and washed with hot water. Then wash it soaping agent with hot water.
- Finally, the samples are washing with cold water and dry the sample.

Vat Dyeing:

- At first take 200ml water. Then we carried out water from the 200ml followed by recipe.
- Then we take hydross and caustic and mixed with water and make a solution.
- Then we mixed dyes with the hydross caustic solution
- Then we take 5gm sample which is mixed with the solution and dyeing with of padder machine
- Again we take caustic and hydross and make solution followed by recipe.
- Then sample is put in the caustic solution on steam at 60c for 40-45min

After 45min the dyed sample rinsed and washes with H₂O₂ solution in hot water. Then wash it by acetic acid wash to neutral

Finally, the sample is washing with cold water and dries the sample.

Sulphur Dyeing:

At first we take 200ml water.

Then we take salt soda sodium and sulphate followed by recipe and make solution.

Then we take 5gm sample and mixed with solution.

Then the sample put on steam at 60c for 45min.

After 45min the dyed sample rinsed and washes with hot water. Then wash it soaping with hot water.

Finally, the samples are washing with cold water and dry the sample.

Disperse Dyeing:

At first we take 200ml water.

Then we take the urea, soda followed by recipe and make solution.

Then we take 5gm sample and mixed with solution.

Then the sample put on steam at 60 c for 45 min.

After 45min the dyed sample rinsed and washes with hot water. Then wash it soaping agent with hot water.

Finally, the samples are washing with cold water and dry the sample.

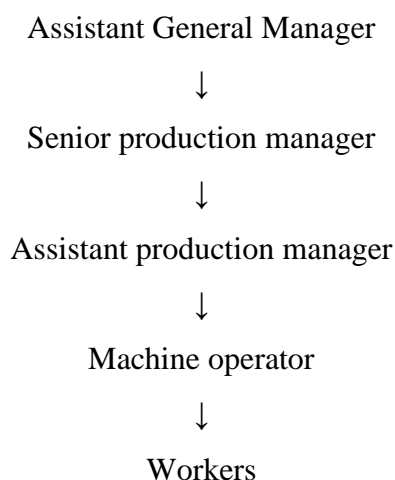
PRE-TREATMENT SECTION

3.2 PRE-TREATMENT SECTION

3.2.1 Introduction:

In dyeing industry, pre-treatment section is considered as a main part of dyeing process. There are many process of pre-treatment section such as singeing, desizing, scouring, bleaching and mercerizing. The machine and process sequence is briefly described by following steps.

3.2.2 Organ gram:



3.2.3 Machine description of pre-treatment section:

MACHINE NAME : Singeing & Desizing
NO. OF MACHINE : 01
BRAND : KOMATSUBARA
ORIGIN : JAPAN
PRODUCTION CAPACITY : 60000-80000m/day

MACHINE NAME : One bath Scouring & Bleaching
NO. OF MACHINE : 01
BRAND : SAGA
ORIGIN : CHINA
PRODUCTION CAPACITY : 90000-100000m/day

MACHINE NAME : Mercerizing
NO. OF MACHINE : 01

BRAND : HAIYANG
ORIGIN : CHINA
PRODUCTION CAPACITY : 40000-60000m/day

3.2.4 Singeing and Desizing Machine

Singeing:

The verb 'singe' literally means 'to burn superficially'. Technically, singeing refers to the burning-off of loose fibers not firmly bound into the yarn and/or fabric structure. Singeing is an important part of pretreatment. This is the burning off of protruding fiber ends from the surface of the fabric. If not done properly, unclear print patterns, mottled fabric surfaces, and pilling results. Loose yarns not firmly bound into the fabric structure; Protruding fiber ends sticking out of the textile yarns and/or fabrics. Textiles materials are most commonly singed in woven or knitted fabric form or in yarn form.

Objectives & Advantages of Singeing:

- Singeing of a fabric is done in order to obtain a clean fabric surface which allows the structure of the fabric to be clearly seen.
- Fabrics, which have been signed, soil less easily than un-singed fabrics.
- The risk of pilling, especially with synthetics and their blends, is reduced in case of singed fabrics.
- Singed fabrics allow printing of fine intricate patterns with high clarity and detail.
- The risk of skitter dyeing with singed articles dyed in dark shades is considerably reduced, as randomly protruding fibers are removed in singeing which could cause diffused reflection of light.



3.2 Pictorial view of Singeing and Desizing Machine

Desizing:

Desizing is a process for removing sized material from fabric by chemical treatment.

Desizing processes:

Desizing irrespective of what the desizing agent is, involves impregnation of the fabric with the desizing agent, allowing the desizing agent to degrade or solubilise the size material and finally to wash out the degradation products. The major desizing processes are:

- Enzymatic desizing of starches on cotton fabrics.
- Oxidation desizing.
- Acid desizing.
- Removal of water-soluble sizes.

Some important information of Desizing Machine:

Machine name	: Singeing and Desizing
Brand name	: KOMATSUBARA
Origin	: JAPAN
Manpower	: 6
Production range	: 60000-80000m/day
M/C speed range	: 50m/min
Temperature	: 65-70°C
No. of padder	: 2
Padder pressure	: R-1.8 & L-1.9
No. of burner	: 1
Used utilities	: Gas

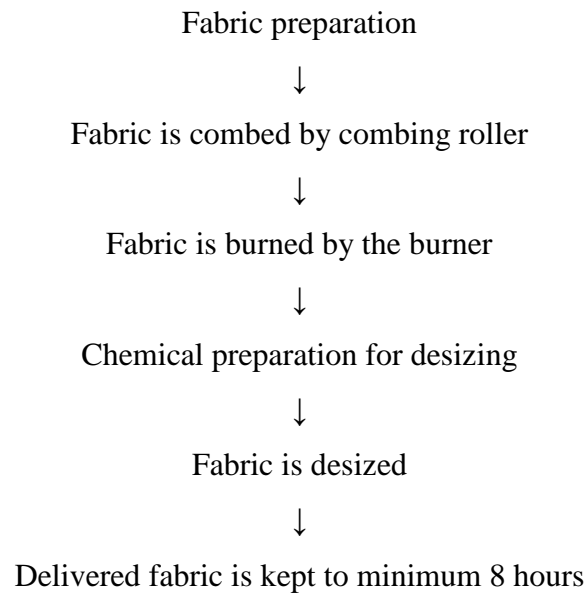
Recipe for Desizing:

A recipe is given by following on for 100% cotton fabric:

Enzyme (Crozyme- 90)	: 4g/l
Detergent (DLJ)	: 2g/l
Sequestering agent (Mex)	: 2g/l
pH	: 5-5.5
Speed	: 50 m/min
Temperature	: (65-70)°C
Pick up%	: 70%

Flow Chart of Singeing and Desizing Machine:

A flow chart is show of the machine of singeing and desizing machine is following steps:



3.2.5 One bath Scouring and Bleaching

Scouring:

Scouring is a process for removing the impurities e.g. oil, fat and waxy materials from the fabric by chemical treatment.

Bleaching:

Bleaching is a process for removing natural nitrogenous coloring materials i.e. dirt, dust husk, broken seed and leaf etc. from the abric and make it white by oxidizing or chemical treatment called bleaching.

Washing:

Washing is a process to remove size chemical, eliminating stains or to increase absorbency.

Some important information of the bleaching machine:

Machine name	: One bath scouring and bleaching
Brand name	: SAGA
Origin	: CHINA
Manpower	: 6
Production range	: 90000-100000m/day
M/C speed	: 40-50m/day

Used utilities	: Gas
Temperature for washing	: 90°C
Temperature for steamer	: 100°C
Pressure for padder	: 2-3 bar
Pressure for squizzer	: 2-2.5 bar
Compensator pressure	: 2-3 bar
Fabric position	: Face
Chemical level	: Up-to the level of indicator
Water level	: Above the roller
Dosing pump	: Based on the recipe



3.3 Pictorial view of one Bath Scouring and Bleaching Machine.

Function of Scouring and Bleaching Machine:

Sometimes it is called that the process of Scouring and Bleaching is the heart of dyeing process. If both of the process creates any fault during process time, then next process will must not be done properly. There is lots of function of Scouring and Bleaching machine which is given below:

- It is removing the impurities of the fabric such as oil, fat, waxy and so on which is called Scouring.
- It is also performed removing of natural color from the fabric and make the fabric too much white, which is called bleaching.
- It is also improving the absorbency of the fabric.
- It is performed the fabric washing after dyeing and printing.

□ Drying the fabric is also done by the Bleaching machine.

Recipe for Scouring and Bleaching:

A recipe for one bath Scouring and Bleaching for 100% cotton fabric is given below:

Bath:

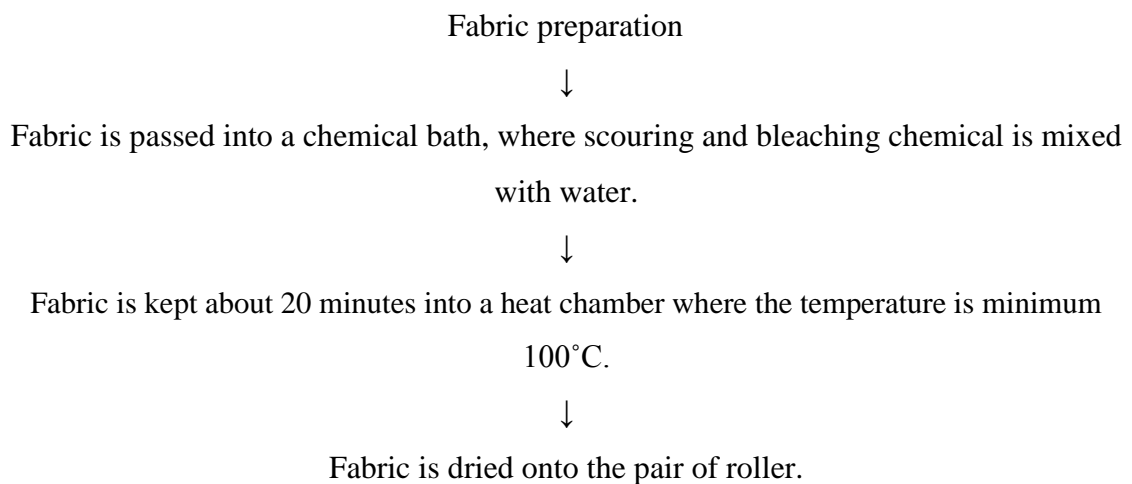
Sequestering agent (N. NBA)	: 1.8kg
Detergent (R. WBL)	: 6kg
Peroxide (H ₂ O ₂ 35%)	: 42kg
Stabilizer (R.OKK)	: 3.6kg
Caustic	: 13.2kg
Total liquor	: 600 liter

Dossing:

Dossing	: the concentration of bath× 4
Caustic	: 21 Be
Sequestering agent (N. NBA)	: 7.2kg
Detergent (R. WBL)	: 24kg
Peroxide (H ₂ O ₂ 35%)	: 168kg
Stabilizer (R.OKK)	: 14.4kg

Flow chart of One Bath Scouring and Bleaching machine:

The process flow chart of One Bath Scouring and Bleaching is following on:



3.2.6 Mercerizing machine

Mercerization is the treatment of pure cotton fabrics or yarn with strong caustic soda solution to improve strength, dye substantivity, strength and smoothness. Sufficient washing is required after this step to remove any traces of caustic soda.

Some important information of the Mercerizing Machine:

Machine name	: MERCERIZING MACHINE
Brand name	: HAIYANG
Origin	: CHINA
Manpower	: 4-6
Production range	: 40000-60000 m/day
M/C speed	: 35-5 m/min
No of chamber	: 6
Used utilities	: Gas
Air pressure	: 2.3 bar
Steam pressure	: 2.25-2.5 bar
Pressure of padder	: 2-3 bar
Pressure of squeezer	: 2.25-2.5 bar
No of air-zone roller	: 18
Fabric position	: Face
Chemical level	: Up-to the level indicator
Water level	: Above the roller
Dosing pump	: Based on recipe



3.4 Pictorial view of Mercerizing Machine

Function of Mercerizing Machine:

The major function of mercerizing machine is given below:

- To increment the luster of a fabric.
- To improve the whiteness of a fabric.
- To develop the absorbency of a fabric.

Recipe:

Generally caustic and mercerized oil is used for mercerizing of a fabric. Normally 2000 kg caustic is used for 12 kg mercerized oil and the amount of water is added with caustic about (1500-2000) liter.

There are three bath of mercerized machine.

1st bath provide high amount of caustic.

2nd bath provide the less amount of caustic than the 1st bath.

3rd bath is used for caustic recovery

In mercerizing machine, there are six chambers where fabric is treated with steam in different temperature.

The temperature of 1st bath chamber is 175°C

The temperature of 2nd bath chamber is 73°C

The temperature of 3rd bath chamber is 88°C

The temperature of 4nd bath chamber is 33°C

The temperature of 5nd bath chamber is 99°C

The temperature of 6nd bath chamber is 71°C

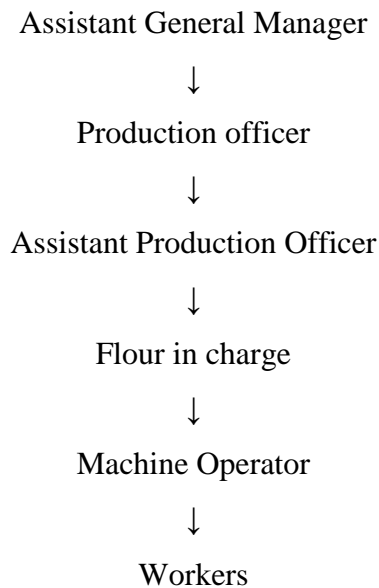
DYEING SECTION

3.3 DYEING SECTION

3.3.1 General idea about dyeing

Dyeing is a distribution process in which the dye or pigment is distributed at least two phases system i.e. the dye/pigment bath or solution and the textile material. Dyes or pigment are generally coloring material for dyeing operation.

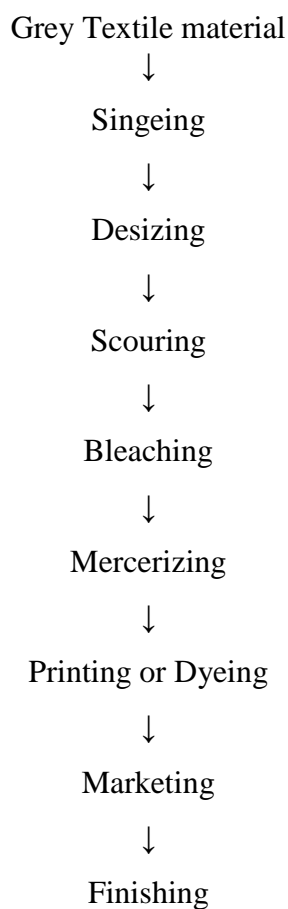
3.3.2 Organ gram



3.3.3 Classification of dyeing machine:

1. Fiber dyeing machine
2. Yarn dyeing machine
 - Hank dyeing machine
 - Package dyeing machine
 - Beam dyeing machine
3. Fabric dyeing machine
 - Jigger Dyeing machine
 - Winch Dyeing machine
 - Jet dyeing machine
 - Beam dyeing machine
 - Garments Dyeing Machine

3.3.4 Process Flow chart of dyeing in textile:



3.3.5 Chemical and Auxiliaries:

Different Types of auxiliaries are used with dye. Generally chemical auxiliaries are used to influence the dyeing operation.

Mostly used auxiliaries are:

- Wetting agent : Is used to remove surface tension.
- Sequestering agent : Is used to remove the hardness of water.
- Anti Creasing agent : Used to prevent the creasing property of the fabric
- Anti-foaming agent : Is used to reduce the foam formation
- Dispersing agent : Used to make soluble form of the in soluble dyes.
- Swelling agent/ Carovier : Is used to improve the swelling ability
- Catalyst : Is used increase the dyeing operation.
- Electrolytes : Is used to exhaust the dye into the fiber.
- Alkalis/ Acids : Are used to maintain pH level

3.3.6 Dyes:

Dyes are coloring materials used in coloration textiles. Most of the dyes are organic compounds and soluble water.

Dyes can be classified as follows:

1. Readymade dyes
 - Water soluble
 - Direct dye
 - Basic dye
 - Acid dye
 - Reactive dye
 - Optical whiteness
 - II. Water soluble dye
 - Vat dye
 - Sulphur dye
 - Disperse dye
2. 2) Ingrain dyes
 - Azoic colors
 - Oxidation colors
 - Mineral colors

Machine Description of Dyeing Section

MACHINE NAME : JIGGER
NO OF MACHINE : 09
BRAND : GOLLER
ORIGIN : KOREA
PRODUCTION CAPACITY : 9000M/DAY

MACHINE NAME : COLOR PAD BATCH
NO OF MACHINE : 01
BRAND : BABCOOK
ORIGIN : GERMANY
PRODUCTION CAPACITY : 25000YDS/SHIFT

MACHINE NAME : Z-DYE
NO OF MACHINE : 01
BRAND : SUN
ORIGIN : KOREA
PRODUCTION CAPACITY : 2000M/DAY

MACHINE NAME : WASHING
NO OF MACHINE : 02
BRAND : RAMISCH KLEINWEFERS
ORIGIN : CHAINA
PRODUCTION CAPACITY : 16000M/DAY

MACHINE NAME : DRYING
NO OF MACHINE : 01
BRAND : HAIYANG
ORIGIN : CHAINA
PRODUCTION CAPACITY : 20000M/DAY

MACHINE NAME : ROTARY WASH
NO OF MACHINE : 01
BRAND : HAIYANG
ORIGIN : CHAINA
PRODUCTION CAPACITY : 25000M/DAY

MACHINE NAME : WINCH
NO OF MACHINE : 01
BRAND : HAIYANG
ORIGIN : CHAINA
PRODUCTION CAPACITY : 25000M/DAY

Jigger Machine:

Some Important Information of the jigger machine:

Machine Name : JIGGER

Brand Name	: GOLLER
Origin	: KOREA
Manpower	: 3
Production range	: 9000m/day
M/C Speed	: 60-80 m/min or as required
Temperature	: 70-90 ^o C
Chemical level/ liquor level	: 260L
Function	: only cotton par Only cotton part dyeing
A-frame position	: Set properly
Availability of sewing thread	: As required
Used utilities	: Gas



3.5 Pictorial view of Jigger Machine.

Recipe:

A recipe is given by following on for jigger machine TC Plain fabric:

Dyeing:

Water	: 400 liter
Colv. N. Blue WB	: 2290 gm
Colv. Red 3BS	: 580 gm
Colv. Blue RSPL	: 140 gm
Salt	: 10 kg
Soda	: 3 kg

Fixing:

Acetic acid	: 300 gm
Fixing agent	: 0.5 kg

Washing:

DTC	: 300 gm
Soda	: 200 gm

Product Quality Check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

Color-Pad-Batch (CPM) Machine:

Some important information of the color-pad-batch machine:

Machine name	: COLOR- PAD- BATCH (CPB)
Brand name	: BABCOCK
Origen	: GERMANY
Manpower	: 8
Production range	: 20000-25000yds/shift
M/C Speed	: 35m/min
Temperature	: No need
No of padder	: 4
Function	: Both
A- frame position	: Set properly
Availability of sewing thread	: As required
Used utilities	: Gas



3.6 Pictorial view of Color-pad-batch (CPM) machine

Recipe:

A recipe is given which we watched during our training period in pad batch dyeing machine:

Customer	: RAB
Color	: Black
Fabric construction	: 45/2×45/ 2
Quantity	: 13500 yds
Reactive Black-SG (80%)	: 19000 gm
Colvazol Yellow RGB (15%)	: 35625 gm
Urea	: 119 kg
Pad	: 2.8 kg
Salt	: 100kg
Caustic	: 38°C
Temperature	: Normal temperature.
Speed of the machine	: 30 m/min
Total liquor	: 1900+500 liter

Product quality check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

Jet- Dye Machine:

Some important information of the Jet- dye machine:

Machine Name	: Z-dye machine
Brand Name	: SUN
Origin	: KOREA
Manpower	: 4
M/C Speed	: 40-50m/min
Temperature	: 130 C
Function	: Polyester part dyeing Reduction
No of roller	: 2
Availability of sewing thread	: As required
Used utilities	: Gas
Production range	: 20000m/day



3.7 Pictorial view of Jet dyeing Machine

Product quality check:

- a) Shade check
- b) Cosmetic defects
- c) Listing (Shade variation)

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

3.3.7 Washing Machine:

Some important information of the washing machine:

Machine name	: WASHING
Brand name	: RAMISCH KLEINWEFRS
Origen	: GERMANY
Manpower	: 8
Production range	: 12000-16000m/day
M/C Speed	: 20-30m/min
Temperature for washing	: 90-95 C
Pressure for squeezer	: 2-2.5bar
Compensator pressure	: 2.5-3.6bar
Fabric position	: Face/back
Water level	: Always full
No of chamber	: 7
Used utilities	: Gas

Product quality check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

Rotary Wash Machine:

Some important information of the Rotary machine:

Machine name	: ROTARY WASH
Brand name	: SAMILL
Origin	: CHINA
Manpower	: 8-10
Production range	: 15000-18000m/day
Temperature	: 130C
Chamber	: 01
Utilities	: Gas
Function	: Decrease shrinkage to washing



3.8 Pictorial view of Rotary Wash Machine

Product quality check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

Winch Machine:

Some important information of the winch machine:

Machine name	: WINCH MACHINE
Brand name	: SAMILL
Origin	: CHINA
Manpower	: 08-10
Production range	: 20000-250000m/day
Temperature	: 90-120 ^o C
M/c speed	: 30-35m/min
Utilities	: Gas
Function	: To increase softness



3.9 Pictorial view of Winch Machine

Product quality check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

Drying Machine:

Some important information of the drying machine:

Machine name	: DRYING MACHINE
Brand name	: HAI-YANG
Origin	: CHINA
Manpower	: 06-08
Production range	: 30-35m/day
Temperature	: 90-120°C
Utilities	: Gas
Function	: To drying
Cylinder	: 24



3.10 Pictorial view of Dryer Machine

Product quality check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

Thermosol Dying Machine:

Some important information of the thermosol dyeing machine:

Machine name	: Thermosol dyeing machine
Brand name	: Monforts
Origin	: Germany
Manpower	: 8-10
Production range	: 30000-40000yds/day
Temperature	: 120-170 C
Utilities	: Gas
Function	: To drying cotton and polyester
M/C speed	: 50m/min

Product quality check:

During production, check for cosmetic defects such as, spots on the fabric, crease mark on the fabric, fabric position fabric sewing, selvedge torn or any other abnormalities that can be detected visually.

Q.C Sample Test:

1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

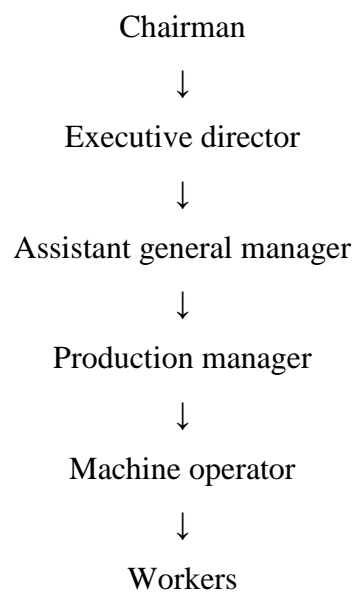
PRINTING SECTION

3.4 PRINTING SECTION

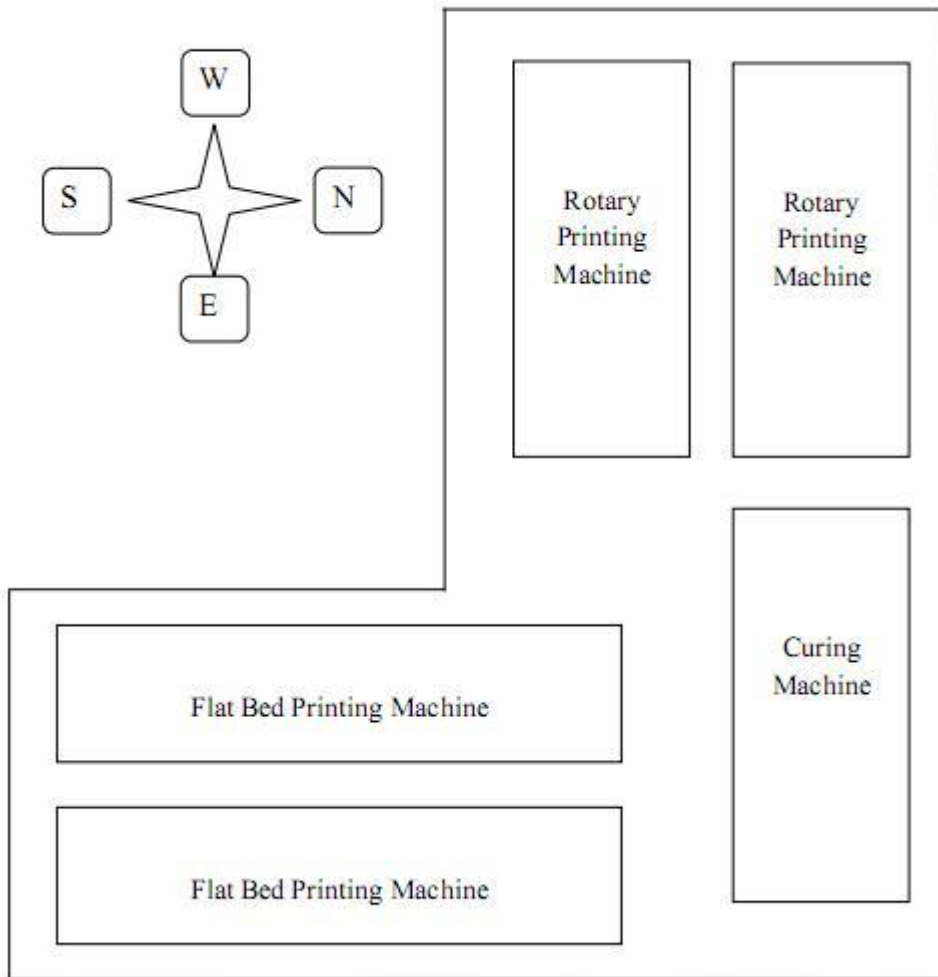
3.4.1 Introduction:

The printing is described as localized dyeing i.e. dyes or pigments are applied locally or discontinuously to produce the various designs. The objective in textile printing is the production of attractive designs with well-defined boundaries made by the artistic arrangement of a motif or motifs in one or more colors.

3.4.2 Organ gram of the printing section:



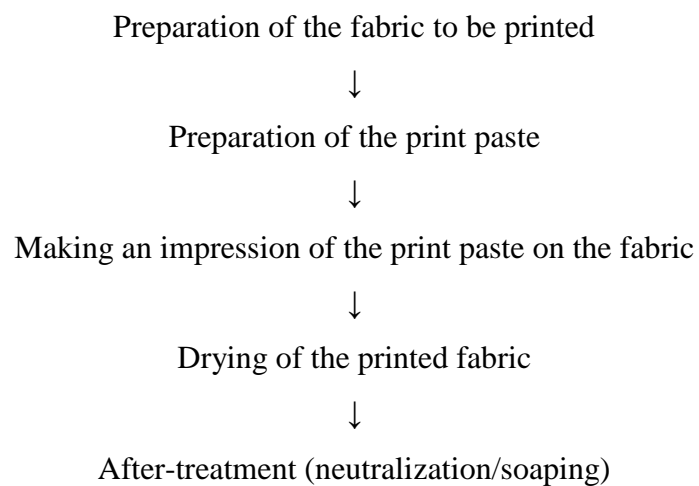
3.4.3 Section layout of printing section



3.11 Section layout of printing section

3.4.4 Steps in textile printing:

Textile printing is carried out in various steps, such as



The fabric to be printed is pretreated first that is from singeing to bleaching/mercerizing operation. Then the fabric is ready for printing. After printing, the printed cloth is dried in a drying machine.

3.4.5 Different style of printing:

1. Direct style of printing.
2. Discharge style of printing.
 - a) White discharge.
 - b) Color discharge.
3. Resist style of printing.
 - a) White resist.
 - b) Color resist.

3.4.6 Methods of printing:

There are different types of method of printing:

- Block printing
- Engraved roller printing
- Screen printing
- Rotary screen printing
- Transfer printing
- Flock printing
- Burn out printing
- Ink-jet printing
- Special method (Tie and Batik printing)

3.4.7 Machine description:

Auto flat bed screen printing:

Here all the screens are accurately positioned along the top of the long table. Endless blanket is used. Length wise repeat are done by placing screen as required. Each color is positioned according to the desired design. Fabric is placed on blanket and moves along with blanket. All color is printed simultaneously while the fabric is stationary.

1. Double bladed squeegee.
2. Magnetic rod squeegee.

Some important information of the Auto flat bed screen printing:

Machine name	: Auto flat bed printing machine
Brand name	: TEXPIN
Origin	: INDIA
Manpower	: 8-10
Production range	: 5000-10000 m/day
Temperature	: 2.5-3 kg steam
Used utilities	: Gas
Chamber	: 01
Motor	: 16
Color used	: 8-10
M/C speed	: 20-30 m/min.



3.12 Pictorial view of Flat bed screen Printing Machine

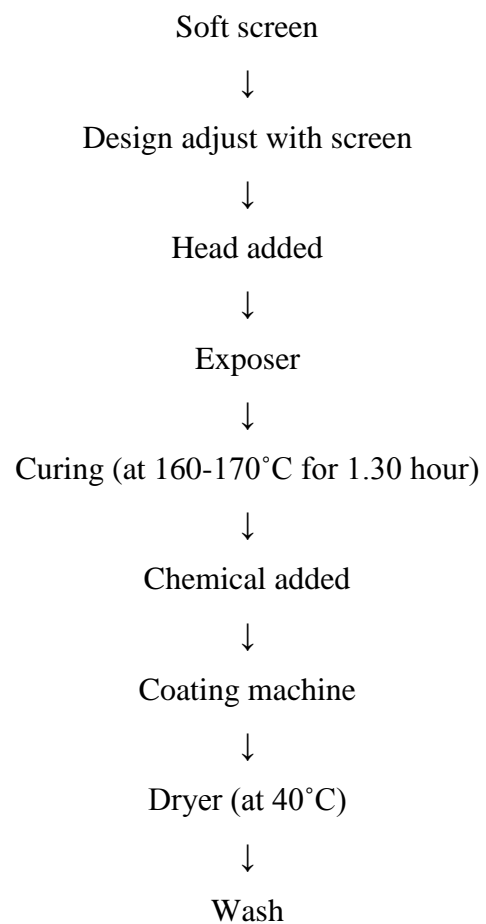
Rotary screen printing:

When rotary screen printing became widely available in the textile industry, a demand naturally developed for it to be used also for the production of transfer paper. Thus creation the possibilities of manufacture cutting out paper printer. Rotary screen printing also has many intrinsic attractions from the point of view of transfer paper producing such as relatively low capital cost and the capability of printing very wide width.



3.13 Pictorial view of Rotary screen Printing Machine

Screen making flow chart:



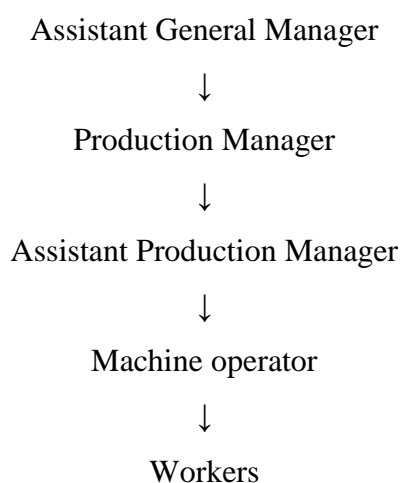
FINISHING SECTION

3.5 FINISHING SECTION

3.5.1 Introduction:

The making of a marketable and consumer-usable textile is not completed after fabric production, dyeing or printing operation. Fabrics usually still need to undergo an additional processing known as FINISHING, which is the final processing before the fabric is cut in apparel or made into any articles of textile. Finishing is what improved attractiveness a makes the fabrics suitable for their intended end use. There are many types of finishes, some make fabric softer, some stiffer, some water repellent and water proof, some shrink-resista and some fire proof and so on.

3.5.2 Organ gram



3.5.3 Classification of finishing:

Textile finishes are classified into several ways. The most common classification is

- Aesthetic finishes
- Functional finishes

3.5.4 Machine description of finishing section:

MACHINE NAME : STENTER
NO. OF MACHINE : 03
BRAND : SUNSUPER
ORIGIN : KOREA
PRODUCTION CAPACITY : 25000-35000 m/day

MACHINE NAME : SANFORIZING
NO. OF MACHINE : 01
BRAND : SHRINKING RANGE
ORIGIN : KOREA
PRODUCTION CAPACITY : 25000-35000 m/day

MACHINE NAME : EMARIZING
NO. OF MACHINE : 01
BRAND : LAFER SPA
ORIGIN : ITALY
PRODUCTION CAPACITY : 20000-25000 m/day

MACHINE NAME : CALENDERING
NO. OF MACHINE : 01
BRAND : RAMISCH KLEINWEFERS
ORIGIN : GERMANY
PRODUCTION CAPACITY : 3000-4000 m/day

Stenter Machine:

Some important information of the stenter machine:

Machine name : STENTER
Brand name : SUNSUPER
Origion : KOREA
Manpower : 6
Production range : 25000-35000 m/day
M/C speed : 40-50 m/min for heavy fabric 60-80 m/min for light fabric
Temperature : 180-190°C for heavy fabric 150-160°C for light fabric
No. of burner : 6
No. of blower : 12
Chamber : 6
Used utilities : Gas



3.14 Pictorial view of Stenter Machine

Function of Stenter machine:

- Starching
- Heat setting
- Soft finish (normal, hard & super soft)
- Dry cord
- Moist crease
- Water repellent
- White fabric finish(soft)
- White fabric finish (wrinkle free)
- Colored fabric finish (soft)
- Colored fabric finish (wrinkle free)
- Topping
- Top finish
- Width control, finishing chemical application
- Loop control
- Moisture control
- Spirality control
- GSM control
- Drying
- Shrinkage control

Product quality check:

- Shade check
- Fault check
- Width check:
 - Design and fabric bow check (for yarn dyed fabric)
 - Pin setting check (for TC & yarn dyed fabric)
 - Clips checking (for 100% cotton and twill fabric)

Chemical used for finishing on Stenter machine:

There are many sort of chemical is used in stenter machine. Chemical are individually used for cotton or polyester. There are following on-

1. Acetic acid
2. Softener (cepo soft and cemo soft)
3. EPS (Recolin)
4. CT-7050
5. Apretone
6. Magnesium chloride
7. Siltex
8. Silicon softener
9. Micro silicon
10. SIQ
11. Anner
12. Jifix-SR
13. Elysin-S
14. Finox-DRN
15. Urea
16. Power soft

Sanforizing Machine:

It is a mechanical treatment of fabric (e.g. cotton, CVC fabric etc) in the sanforizing M/C for shrinkage of soft fabric (e.g. cotton, CVC fabric etc) and transforming the fabric into soft, glossy and smooth fabric for end use.

Some important information of the Sanforizing machine:

Machine name	: SNFORIZING
Brand name	: SHRINKING RANGE
Origin	: KOREA
Manpower	: 8
Production range	: 20000-30000 m/day
M/C speed	: 40 m/min (heavy fabric) 60 m/min (light fabric)
Steam pressure for damping	: 2-5 bar
Water pressure for spraying	: 4-5 bar
Over feed	: 5%
Rubber belt tension	: Depends on belt thickness
Air-pressure for felt belt	: 4-5 bar
Steam pressure for felt belt	: 2-3 bar
Pressure for winding batcher	: 0-4 Bar
Used utilities	: Gas



3.15 Pictorial view of Sanforizing Machine

Function of Sanforizing machine:

The major function of the sanforizing machine is following on:

- Width control of the fabric

- Shrinkage control
- Increase the softness, smoothness and luster of a fabric
- And so on

Product quality check:

- Fault check
- Width check

UTILITY SECTION

3.6 UTILITY SECTION

3.6.1 Source the following utility services are available:

- Water Pumps
- Electricity PDB & Generator
- Steam Boiler
- Gas Titas
- Compress air Compressor

3.6.2 Water:

Water is supplied in different sections continuously by using submersible and centrifugal pumps.

Centrifugal pump	: 20 H.P pedrollo pump each 1000l/min
Capacity	: 4000L/min
Centrifugal pump	: 10 H.P Pedrollo pump flow rate, 600l/min
Capacity	: 600L/min
Centrifugal pump	: Jhonoson pump (30HP)
Capacity	: 100M/hr
Centrifugal pump	: KSB(30HP)
Capacity	: 100m/hr
Centrifugal pump	: Submerssible pump KSB
Capacity	: 150m/hr

3.6.3 Electricity:

Machine Name	: Prime power generator
Origen	: CHINA
No of the machine	: 03
Capacity	: 1260KW

Machine Name	: Warsila Gas generator
Origen	: GARMANY
No of the machine	: 02
Capacity	: 1050KW

3.6.4 Some information important of prime generator:

Brand name	: Guascor
Origen	: CHINA
Model	: FGLD-480
Stand by voltage	: 680V, KVA
Phase	: 3
Wight	: 1945kg

3.6.5 Boiler:

Boiler is mainly used to produce and deliver steam to different section as required. In Asian Textile Limited two boilers are used to produce and deliver steam to different section.

Boiler Specification

Brand Name	: OMANICAL
No of Machine	: 04
Origin	: GERMANY
Working pressure	: 18KG
Capacity	: 10 Tons/hr
Company Name	: THERMAX Limited
MODEL NO.	: 1997

3.6.6 Gas:

Mainly gas is delivered from TITAS.PPC ES natural gas from titas gas Transmission Company. Gas is used as the fuel of boiler, generator and also used for heating drying, steam and compactor m/cs etc. but it is mainly used for steam production. Generally, 36 m³ gas is required to produce 1 ton of steam.

3.6.7 Compressor:

Compressor is mainly used to deliver compressed air to different section as required

Machine name	: Boiler compressor
Brand name	: COMBIMMAX
No of machine	: 14
Capacity	: 884L/Sec
Origen	: INDIA

MAINTENANCE

3.7 MAINTENANCE

3.7.1 Introduction

Machine, buildings and others facilities are subjected to deterioration due to other use and exposure to environment condition process of deterioration, if unchecked, culminates in rendering these service facilities unserviceable and brings them to a standstill. Industry, therefore has no choice but attend them from time to time to repair and recondition them so as to elongate their life to the extent it is economically and physically possible to do so.

3.7.2 Objective of Maintenance:

- To keep the factory plants, equipment's, machine tools in an optimum working condition.
- To ensure specified accuracy to product and time schedule of delivery to customer.
- To keep me downtime of machine to me minimum must to have control over me production program.
- To keep the production cycle within the stipulated range.
- To modify the machine tools to meet the need of production.

3.7.3 Types of Maintenance:

1. Preventive Maintenance
 - Mechanical Maintenance
 - Electrical Maintenance
2. Break down Maintenance
 - Mechanical Maintenance
 - Electrical Maintenance

Preventive Maintenance:

Preventive Maintenance is a predetermined routine activity to ensure on time inspection/checking of facilities to uncover conditions that may lead to production break downs or harmful description.

Break down Maintenance:

In this case, repairs are made after the equipment is out and it cannot be performing its normal function.

Routine Maintenance:

Maintenance of different machine is prepared by expert engineer of maintenance department. Normally incase of dyeing machine, maintenance of after 30 days complete checking of different important parts is done.

3.7.4 Manpower Set-Up for Maintenance:

A Shift 9AM 9PM

B Shift 9PM 9AM

3.7.5 Maintenance Procedure:

Normally preventive maintenance should be done. During maintenance procedure following points should be checked.

3.7.8 Check list of Different Parts:

Maintenance : Mechanical

Machine : Dyeing machine

3.7.9 Items need to be checked & serviced:

- Crease the M/C bearing.
- Complete cleaning the machine.
- Cleaning of drain values, replace scale if required.
- Check air supply filter, regulators auto drain seals.
- Greasing of unloading roller bearing.
- Clean filters element and blow out.
- Checking of unloading roller coupling and packing.
- Checking & cleaning of main vessel level indicator.
- Checking of oil level and bolt of unloading roller gearbox.
- Check the oil level pump bearing and refill if required.
- Check the function of heat and cool modulation
- Check all door seals

CHAPTER 04

Impact of internship

4.1: Dyeing laboratory Section:

- ❖ I was acquainted with different machines used in dyeing laboratory
- ❖ I had learnt about different types of dyes and how can we use this dye.
- ❖ I gain the knowledge how to measure the color of standard sample.
- ❖ During my training period, I have gained lots of knowledge from dyeing laboratory section.

4.2: Pre treatment:

- ❖ I also was acquainted with different machines used in pre-treatment section.
- ❖ I had learnt about different pre-treatment process such as singeing, desizing, one bath scouring & bleaching, mercerizing.
- ❖ I gain the knowledge of advantages, objectives, working procedures, recipe and essential flow-chart of pre-treatment section.
- ❖ During my training period, I have gained lots of knowledge from pre-treatment section.

4.3 Dyeing section:

- ❖ I was acquainted with different machines used in dyeing section.
- ❖ I had learnt the general idea about dyeing such as textile materials, dye or pigments, chemicals and auxiliaries, dyed goods, utilities.
- ❖ I also learned how to do dyeing in proper way.
- ❖ During my training period, I have gained lots of knowledge from dyeing section.

4.4: Printing section:

- ❖ I was acquainted with different machines used in printing section.
- ❖ I had learnt about different method of printing process such as rotary screen printing, flat bed screen printing.
- ❖ I also learnt about different style of printing.
- ❖ I have also known the concept of printing process.
- ❖ During my training period, I have gained lots of knowledge from printing section.

4.5: Finishing section:

- ❖ I was acquainted with different machines used in finishing section.
- ❖ I have learned how to check the quality of product such as shade check, fault check, width check and so on.
- ❖ During my training period, I have gained lots of knowledge from dyeing section.

4.6: Utility section:

- ❖ It is very important part for textile industry.
- ❖ Water, pump, generator, electricity, steam, boiler, compress air, compressor are of utility section very much necessary.

4.7 Maintenance section:

To keep the factory plants, equipment's, machine tools in an optimum working condition.
To ensure specified accuracy to product and time schedule of delivery to customer.

To keep me downtime of machine to me minimum must to have control over me production program

To keep the production cycle within the stipulated range .

CHAPTER 05

CONCLUSION

CHAPTER 05

CONCLUSION

At the end of our industrial training, we can realize it was big helpful for our future and present life basically to our job career. We can learn lots of think and get more knowledge about the environment of an industry and the working steps of different situation for a different buyer. We also learn here how to control the workers and manage them. I think, there are lots of difference between the knowledge of university and the industry because industry is based on practical knowledge. On the other hand, university is prepared of a student to give the theoretical knowledge. When two knowledge comes in one platform I will think that is full of the knowledge which we learn. So, industrial training is helping us to fulfill our knowledge. We especially thanks to our honorable supervisor Abdullah Al Mamun who helps to us for facing any problem which we were not understood on the industry. We prepare our industrial report in according to the instruction of our supervisor and input the information to our training industry.

