



Daffodil
International
University

INDUSTRIAL TRAINING REPORT



Asian Textile
Mills Ltd.

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We feel grateful to our academic supervisor **Sumon Mazumder**, Assistant Professor, Department of Textile Engineering, Faculty of Engineering, Daffodil International University as well as to the **Mr. Md. Safiqur Rahman**, our factory supervisor for their continuously guiding us about the development and preparation of this training report. They have enriched us with sharing necessary theoretical and practical ideas and supervised us to complete this on time.

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We are also grateful to the supervisors, technicians, operators and all others staffs of **Asian Textile Mills Ltd.** who were most coordinal and helpful to us during the tenure of internship.

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

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CHAPTER 01

EXECUTIVE SUMMARY

CHAPTER 01

EXECUTIVE SUMMARY

We performed our internship on Asian Textile Mills Ltd. which is situated on Shashongaon, Enayetnagar, Fatullah in Narayangonj. The length of our training period during two months. we were joining our training on **May 3, 2014** and it halted on **July 1, 2014**. 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 priting 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 02

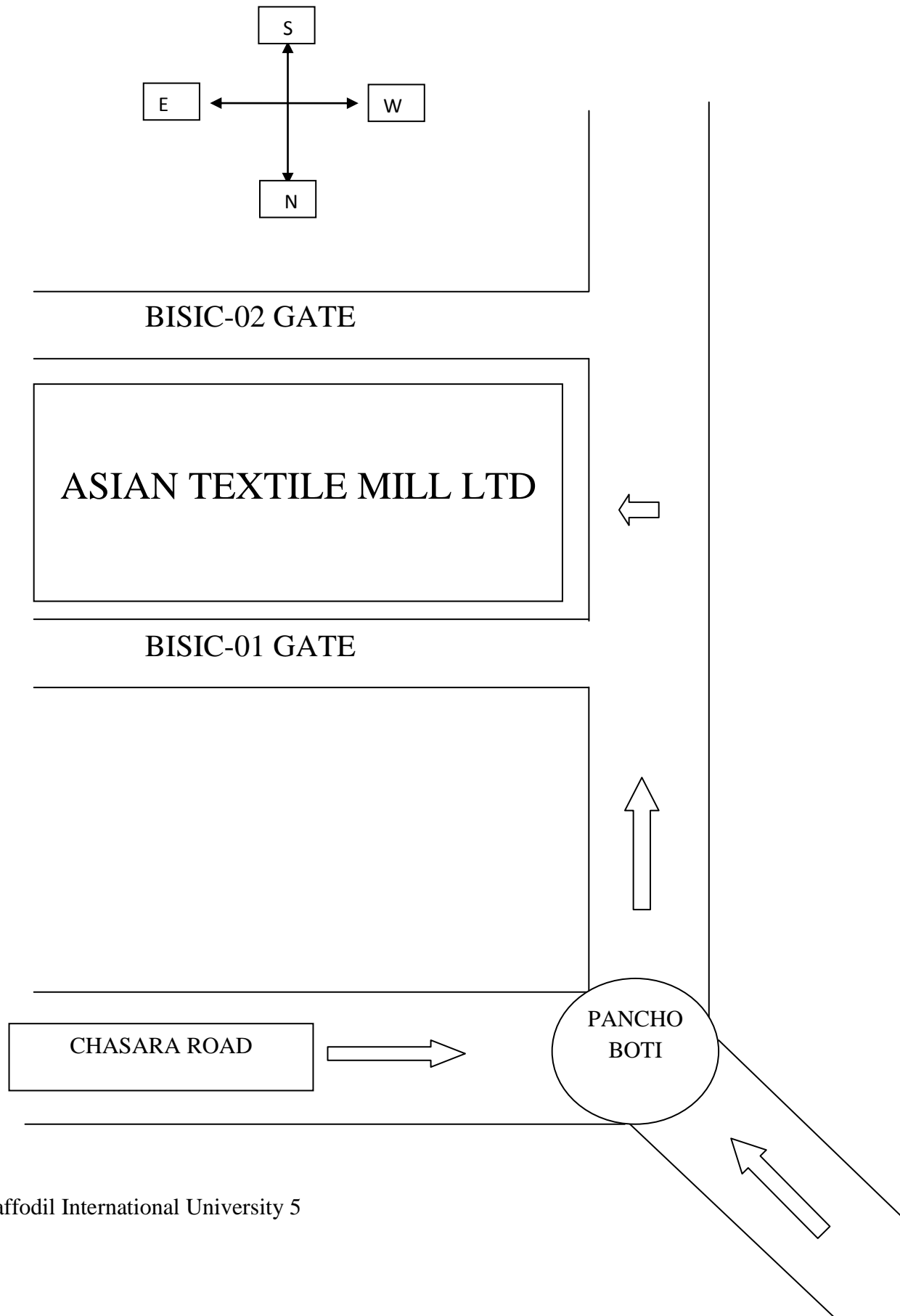
**GENERAL INFORMATION OF THE
COMPANY**

CHAPTER 02
GENERAL INFORMATION OF THE COMPANY

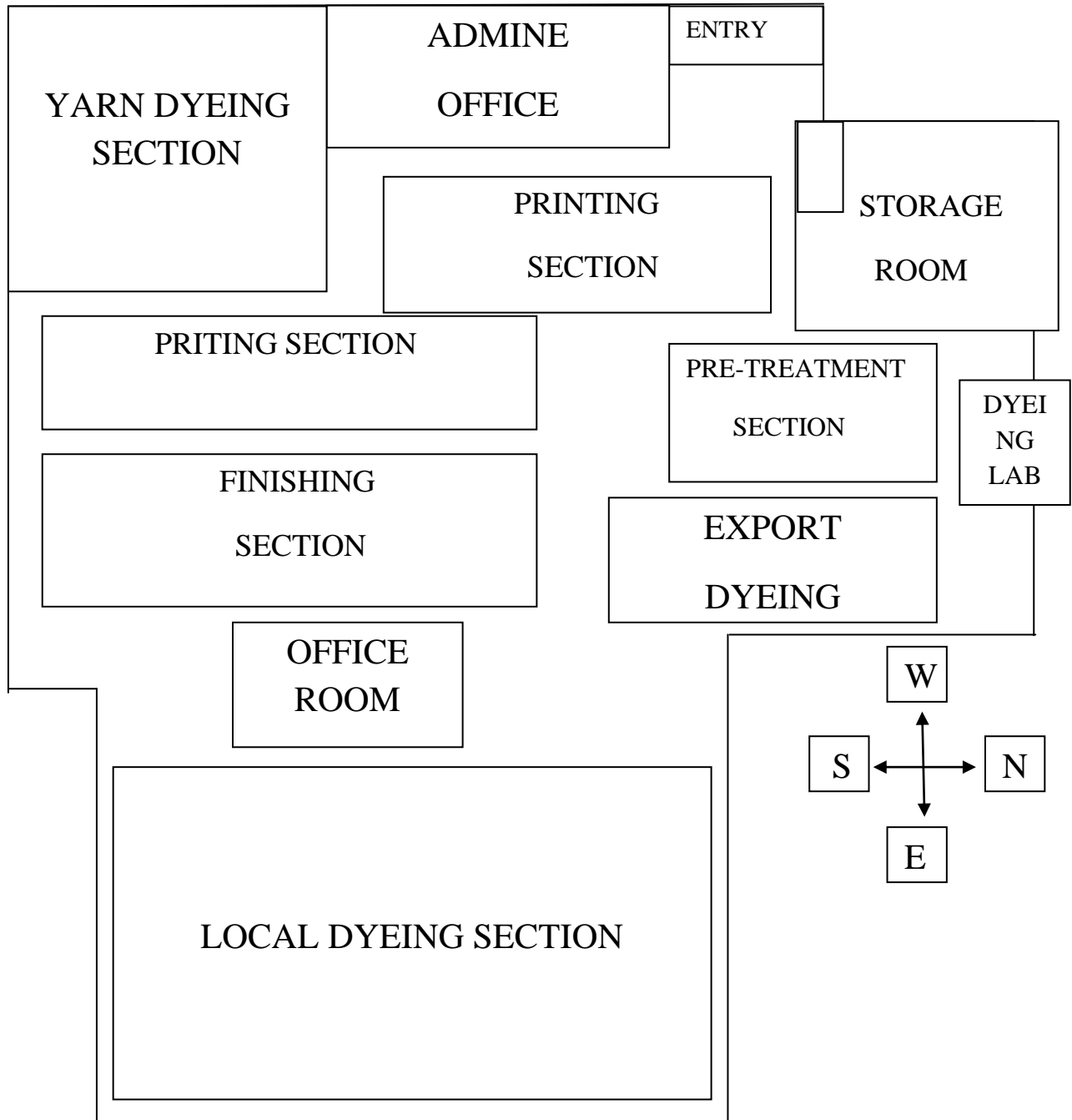
Company Profile

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

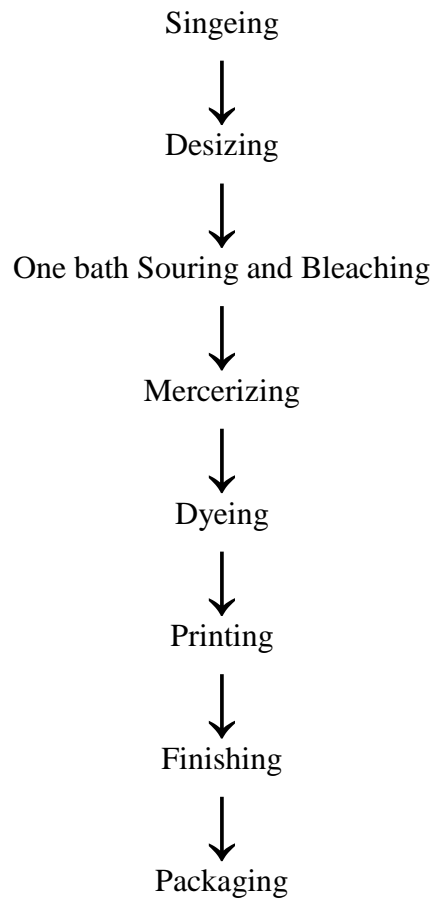
LOCATION LAYOUT OF THE FACTORY



FACTORY LAYOUT



Different Sections of the Company



Supporting Department

There are 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 Plant (On Construction).
- Buying House.
- ETC.

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 03

DETAILS OF THE COMPANY

CHAPTER 03

DETAILS OF THE COMPANY

3.1 Dyeing Laboratory Section

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.

Organ gram

Assistant General Manager



Senior Production Officer



Officer



Lab In charge

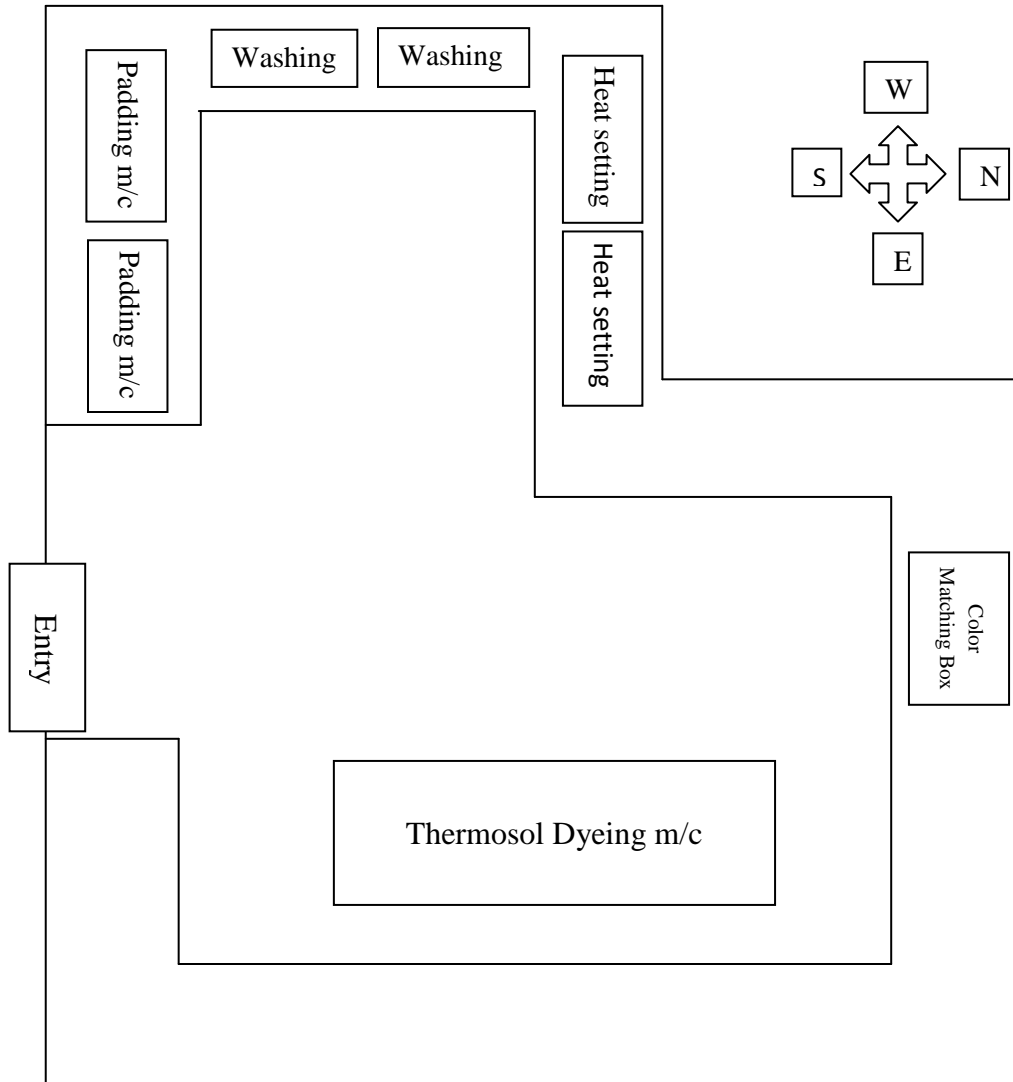


Lab Assistance



Lab Boy

3.1.1 Section layout



3.1.2 Machine specification

Padding Machine (01):

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

Padding Machine (02):

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

Heat & Time Setting Machine (01):

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

Heat & Time Setting Machine (02):

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.

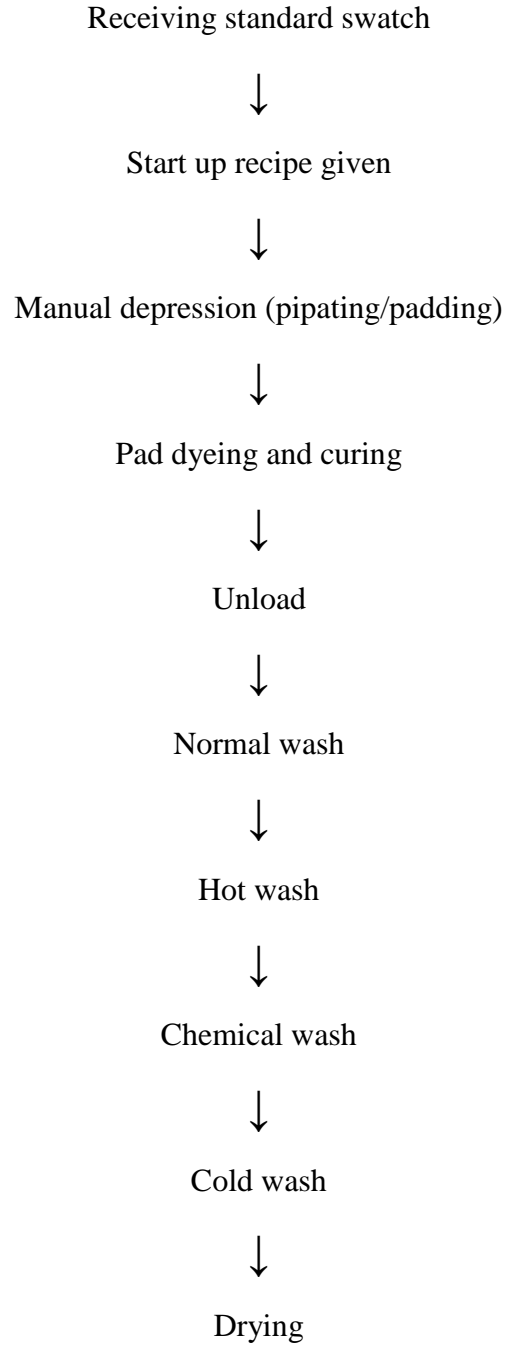
3.1.3 Importance and Development of Lab Dip**Definition:**

Lab dip development means the sample which is dyed according to buyers requirements (similar shade and so on). Depending on lab dip development sample dyeing and bulk production dyeing planning done.

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).

DEPARMENT OF LAB DIP:



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

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.

Sulpher 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:

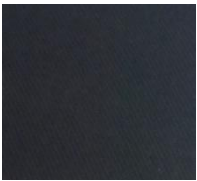
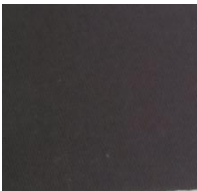
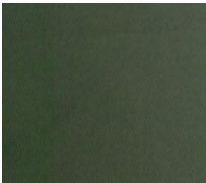


- At first we take 200ml water.
- Then we take the urea, soda followed by recipe and make solution.
- Then we take 5gm sample and mixed with solution.
- Then the sample put on steam at 60 c for 45 min.
- After 45min the dyed sample rinsed and washes with hot water. Then wash it soaping agent with hot water.
- Finally the samples are washing with cold water and dry the sample.

Washing Sequence of Lab:

Washing parameter:

Step No.	Process	Light wt. shade		Medium wt. shade		Heavy wt. shade	
		No. of washes	Time	No. of washes	Time	No. of washes	Time
1st	Cold wash	1	30 sec	1	30sec	1	30sec
2nd	Hot wash at 80-85°C	1	30 sec	1	30sec	1	30sec
3rd	Hot wash with soaping agent at 80-85°C	1	30 sec	1	30sec	1	30sec
4th	Cold wash	1	30 sec	1	30sec	1	30sec
M:L		1:10		1:15		1:20	
Soaping amount (g/l)		2		2		3	

Some recipe of dyed sample:

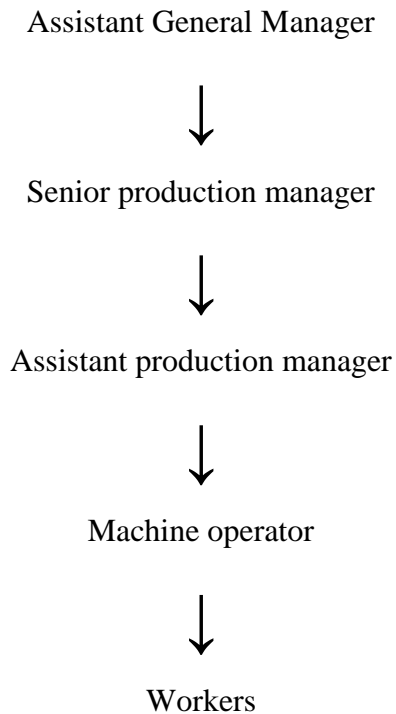
Denova Navy Y2BL = 9.88 gm/l Sunfix Red MFCN = 5.43 gm/l Sunfix Yellow = 4.4 gm/l	
Sunfix Yellow MFCN = 14.44 gm/l Sunfix Red MFCN = 13.35 gm/l Sunfix Blue SS = 9.49 gm/l	
Sunfix Yellow MFCN = 11.8 gm/l Sunfix Red MFCN = 0.96 gm/l Sunfix Blue SS = 8.38 gm/l	
Novacron Yellow CNPC = 5.13 gm/l Novacron Red TS-3B = 0.875 gm/l Novacron Blue TSGC = 0.86 gm/l	
Novacron Olive NC = 11.19 gm/l Novacron Yellow NC = 3.191 gm/l Novacron Brown NC = 1.55 gm/l	

3.2 PRE-TREATMENT SECTION

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.

Organ gram



Machine description of pre-treatment section:

SL NO.	MACHINE NAME	NO. OF MACHINE	BRAND	ORIGIN	PRODUCTION CAPACITY
01	Singeing & Desizing	01	KOMATSUBARA	JAPAN	60000-80000m/day
02	One bath Scouring & Bleaching	01	SAGA	CHINA	90000-100000m/day
03	Mercerizing	01	HAIYANG	CHINA	40000-60000m/day

3.2.1 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.



Figure 01: 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

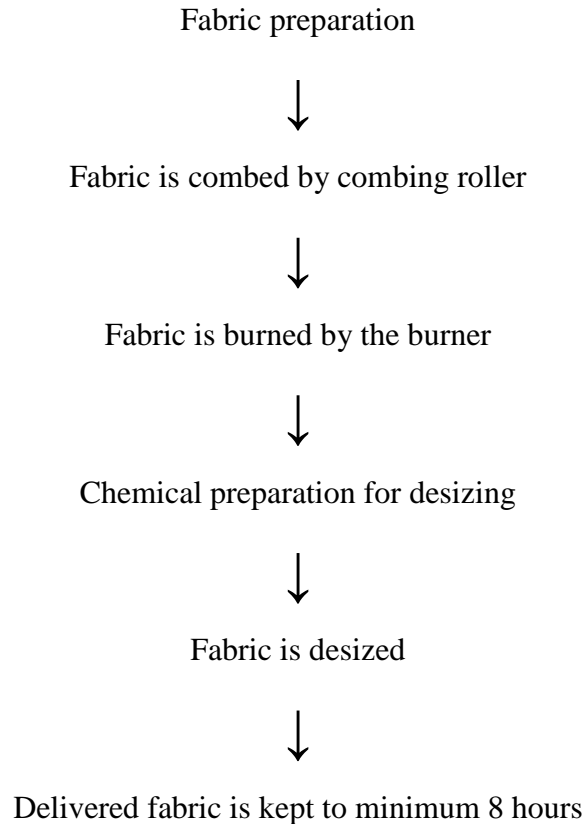
Recipe for Desizing:

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

1. Enzyme (Crozyme- 90) = 4g/l
2. Detergent (DLJ) = 2g/l
3. Sequestering agent (Mex) = 2g/l
4. pH = 5-5.5
5. Speed = 50 m/min
6. Temperature = (65-70)°C
7. 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:



3.2.2 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 fabric 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	(40-50)m/day
Used utilities	Gas
Temperature for washing	90°C
Temperature for steamer	100°C
Pressure for padder	2-3 bar
Pressure for squeezer	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



Figure 02: 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, than 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 improve 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:

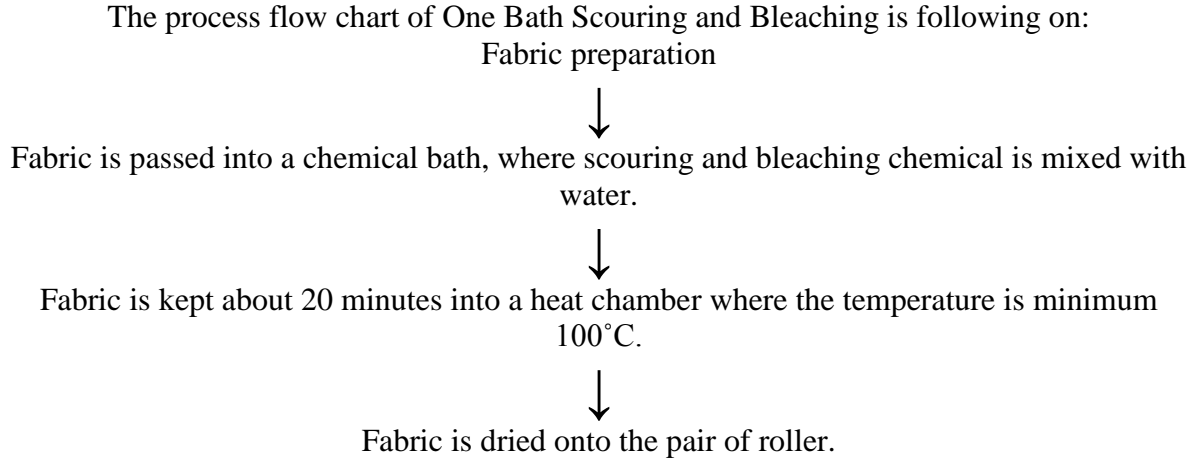
Bath:

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:



3.2.3 Mercerizing machine:

Mercerization is the treatment of pure cotton fabrics or yarn with strong caustic soda solution to improve strength, dye substantively, 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



Figure 03: 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 4th bath chamber is 33°C

The temperature of 5th bath chamber is 99°C

The temperature of 6th bath chamber is 71°C

3.3 DYEING SECTION

Introduction:

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.

Organ gram

Assistant General Manager



Production officer



Assistant Production Officer



Flour in charge

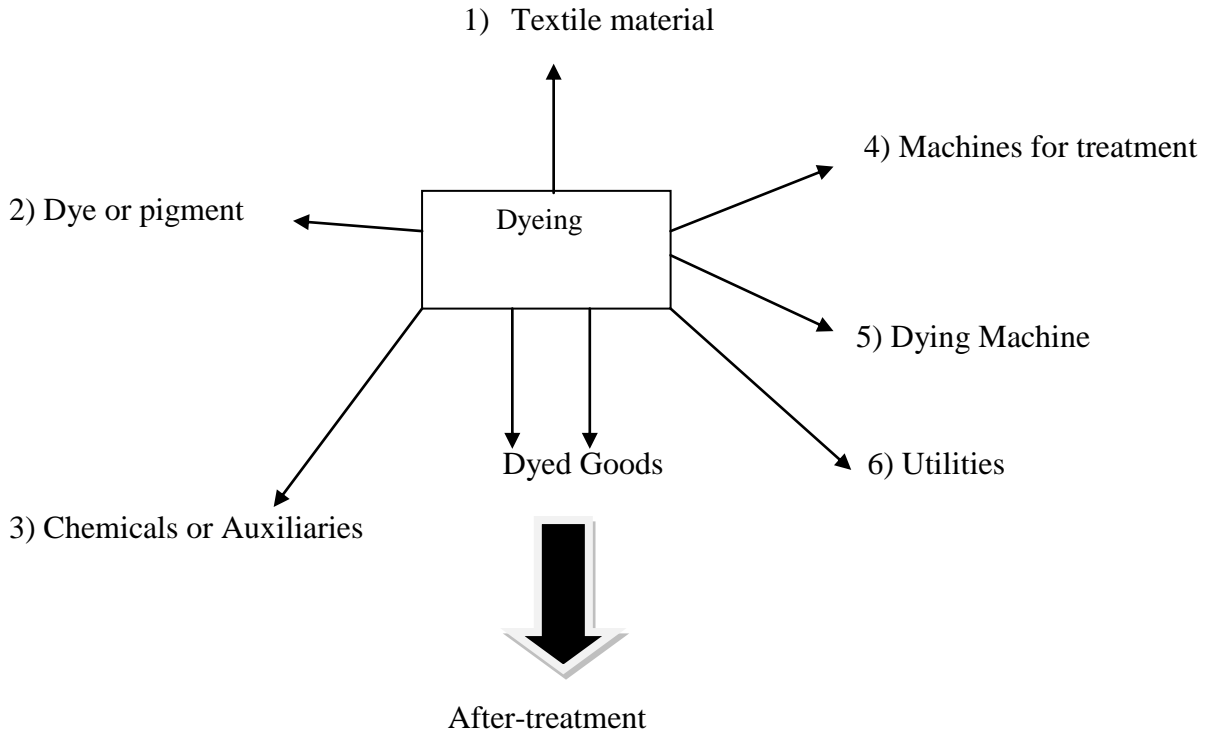


Machine Operator



Workers

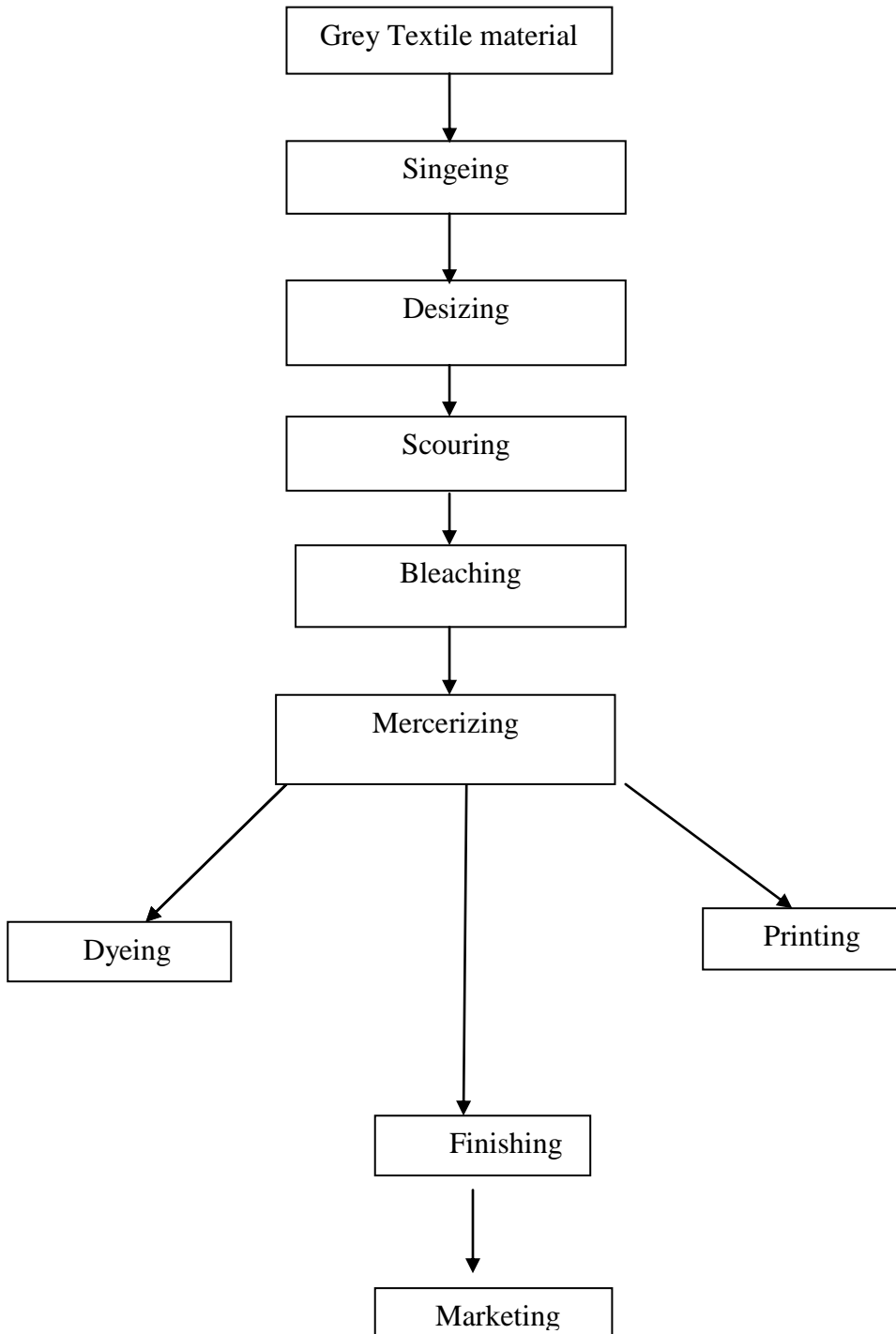
3.3.1 General idea about dyeing:



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

Process Flow chart of dyeing in textile:



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: Is used to prevent the creasing property of the fabric
- Anti-foaming agent: Is used to reduce the foam formation
- Dispersing agent: is 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

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
 - I. Water soluble
 - a) Direct dye
 - b) Basic dye
 - c) Acid dye
 - d) Reactive dye
 - e) Optical whiteness
 - II. Water insoluble dye
 - a) Vat dye
 - b) Sulphur dye
 - c) Disperse dye
- 2) Ingrain dyes
 - a) Azoic colors
 - b) Oxidation colors
 - c) Mineral colors

3.3.2 Machine Description of Dyeing Section:

SL NO.	MACHINE NAME	NO OF MACHINE	BRAND	ORIGIN	PRODUCTION CAPACITY
1	JAGGER	09	GOLLER	KOREA	9000M/DAY
2	COLOR PAD BATCH	01	BABCOOK	GERMANY	25000YDS/SHIFT
3	Z-DYE	07	SUN	KOREA	2000M/DAY
4	WASHING	02	RAMISCH KLEINWEFERS	CHINA	16000M/DAY
5	DRYING	01	HAIYANG	CHINA	20000M/DAY
6	ROTARY WASH	01	HAIYANG	CHINA	25000M/DAY
7	WINCH	01	HAIYANG	CHINA	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 C
Chemical level/ liquor level	260L
Function	Only cotton part dyeing
A-frame position	Set properly
Availability of sewing thread	As required
Used utilities	Gas



Figure 04: 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



Figure 04: 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



Figure No 05: 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.

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	1) Decrease shrinkage 2)To washing



Figure 06: 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 C
M/c speed	30-35m/min
Utilities	Gas
Function	To increase softness



Figure No 07: 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



Figure No 08: 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 Dyeing 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:

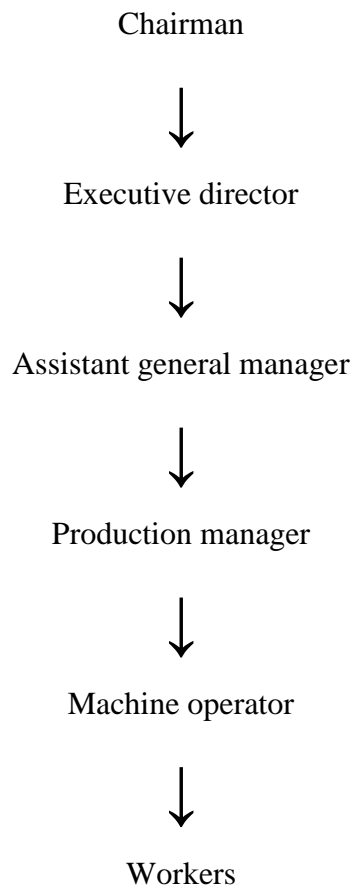
1m sample is cut from the batch & send to the Q.C lab for test. The shade continuity card is attached with the sample for the Q.C test. Q.C department does not physical tests, chemical tests & analysis the tests & notes the results in fabrics test results.

3.4 Printing Section

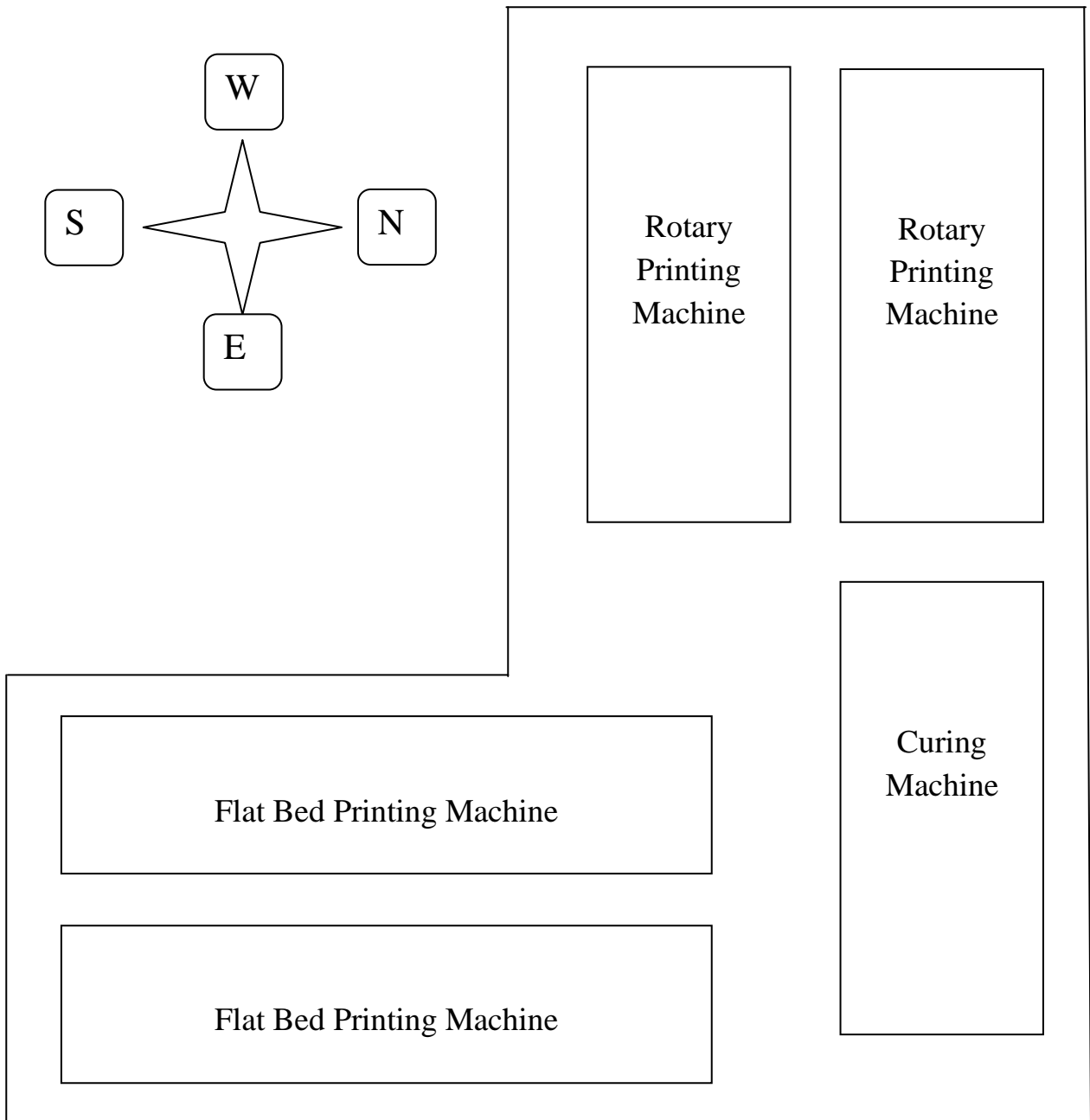
Introduction

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.

Organ gram of the printing section



3.4.1 Section layout of printing section



Steps in textile printing:

Textile printing is carried out in various steps, such as

Preparation of the fabric to be printed



Preparation of the print paste



Making an impression of the print paste on the fabric



Drying of the printed fabric



After-treatment (neutralization/soaping)

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.

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.

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)

Machine description:

3.4.2 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.



Figure No 11: Pictorial view of Flat bed screen Printing Machine.

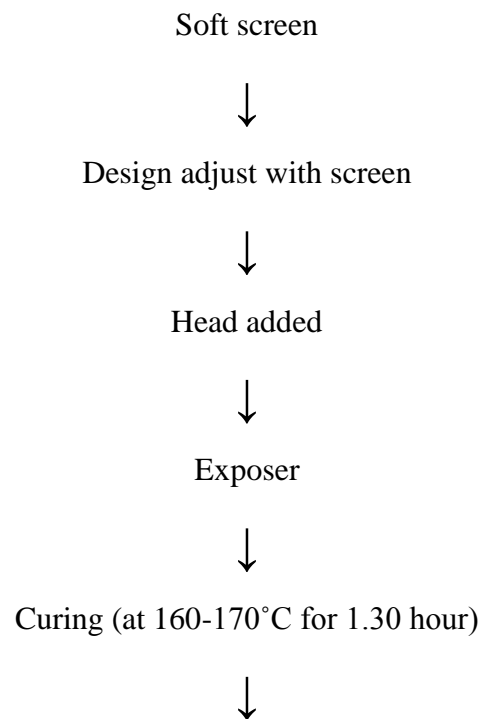
3.4.3 Rotary screen printing:

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.



Figure No 12: Pictorial view of Rotary screen Printing Machine.

Screen making flow chart:



Chemical added



Coating machine



Dryer (at 40°C)



Wash

3.5 FINISHING SECTION

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 into apparel or made into any articles of textile. Finishing is what improved attractiveness and 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-resistant and some fire proof and so on.

Organ gram

Assistant General Manager



Production Manager



Assistant Production Manager



Machine operator



Workers

Classification of finishing:

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

- Aesthetic finishes
- Functional finishes

3.5.1 Machine description of finishing section:

SL NO	MACHINE NAME	NO. OF MACHINE	BRAND	ORIGIN	PRODUCTION CAPACITY
01	STENTER	03	SUNSUPER	KOREA	25000-35000 m/day
02	SANFORIZING	01	SHRINKING RANGE	KOREA	20000-30000 m/day
03	EMARIZING	01	LAFER SPA	ITALY	20000-25000 m/day
04	CALENDERING	01	RAMISCH KLEINWEFERS	GERMANY	3000-4000 m/day

1. Stenter Machine:

Some important information of the stenter machine:

Machine name	STENTER
Brand name	SUNSUPER
Origon	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



Figure No 09: Pictorial view of Stenter Machine.

Function of Stenter machine:

- Starching
- Heat setting
- Soft finish(normal, hard & super soft)
- Dry coard
- Moist crose
- Water repellent
- White fabric finish(soft)
- White fabric finish (wrinkle free)
- Colored fabric finish (soft)
- Colored fabric finish (wrinkle free)
- Toping
- 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:
 - I. Design and fabric bow check (for yarn dyed fabric)
 - II. Pin setting check (for TC & yarn dyed fabric)
 - III. 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. Jinfix-SR
13. Elysin-S
14. Finox-DRN
15. Urea
16. Power soft

2. 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 for heavy fabric 60 m/min for light fabric
Steam pressure for damping.	2-5 bar
Water pressure for spraying before damping roller.	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



Figure No 10: Pictorial view of Sanforising 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

3.6 Utility Section

Source the following utility services are available:

1	Water	Pumps
2	Electricity	PDB & Generator
3	Steam	Boiler
4	Gas	Titas
5	Compress air	Compressor

Water:

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

SL No.	Centrifugal pump for water supply to dyeing & Others section	Capacity
1	20 H.P pedrollo pump each, 1000l/min	4000L/min
2	10 H.P Pedrollo pump flow rate, 600l/min	600L/min
3	Jhonoson pump (30HP)	100M/hr
4	KSB(30HP)	100m/hr
5	Submerssible pump KSB	150m/hr

Electricity:

SL. No	Machine Name	Origen	No of the machine	Capacity
01	Prime power generator	CHINA	03	1260KW
02	Warsila Gas generator	GARMANY	02	1050KW

Some information important of prime generator:

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

Boiler:

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

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.

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

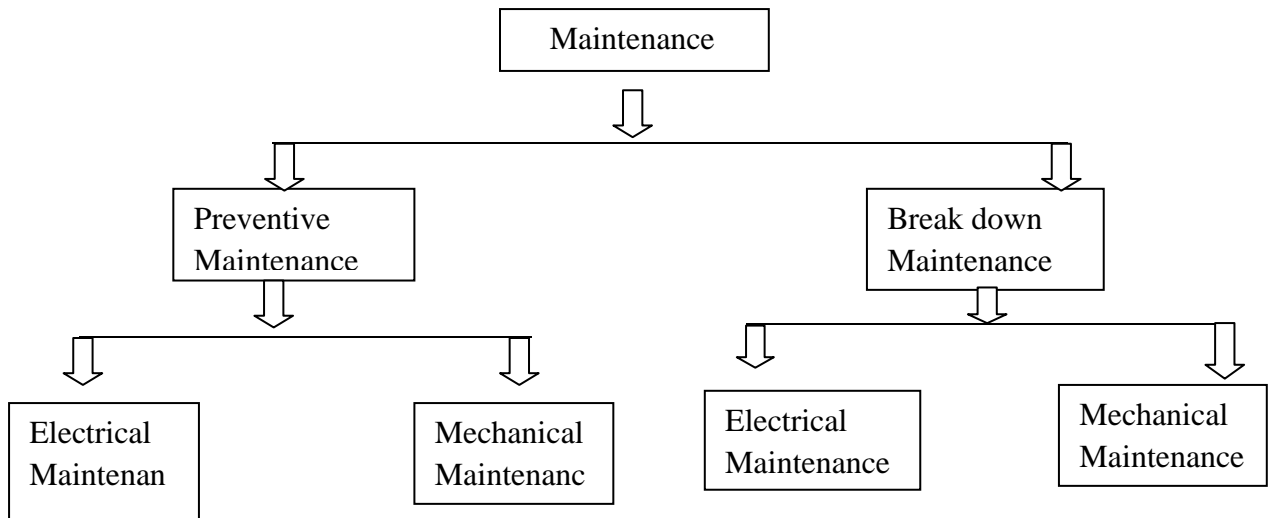
3.7 Maintenance

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.

Objective of Maintenance

- To keep the factory plants, equipments, 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.

Types of 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 perform 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.

Manpower Set-Up for Maintenance:

A Shift	9AM	9PM
B Shift	9PM	9AM

Maintenance Procedure:

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

Check list of Different Parts:

Maintenance: Mechanical

Machine: Dyeing machine

SL No.	Items need to be checked & serviced
1.	Crease the M/C bearing.
2.	Complete cleaning the machine.
3.	Cleaning of drain values, replace scale if required.
4.	Check air supply filter, regulators auto drain seals.
5.	Clean filters element and blow out.
6.	Greasing of unloading roller bearing.
7.	Checking of unloading roller coupling and packing.
8.	Checking of oil level and bolt of unloading roller gearbox.
9.	Checking & cleaning of main vessel level indicator.
10.	Check the oil level pump bearing and refill if required.
11.	Check the function of heat and cool modulation
12.	Check all door seals

CHAPTER 04

CONCLUSION

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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 Sumon Mazumder 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.

CHAPTER 05

IMPACT OF THE INTERNSHIP

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IMPACT OF THE INTERNSHIP

During our training period, we have gained lots of knowledge about the internal subjects of an industry. Especially we had learnt about different dyeing process such as continuous dyeing process, semi continuous dyeing and discontinuous dyeing process. Now we think we have too much skillful and qualified of a dyeing industry. We gain the knowledge of dyeing laboratory, dyeing floor, shade matching, finishing of a fabric, printing process and so on.

During our training period, we have also undertaken sort of responsibilities which are really helpful for our future life. We always try to learn best knowledge of the industrial activities especially dyeing laboratory system and different dyeing process. We saw the starting process to finishing process of a sample.

Industrial training is essential part of a Graduation. Anybody can not perfect without training of his profession. Our industrial training was grate helpful for our present and future life; because we learnt the industrial environment, how to maintain the workers, how to make a plan, how you can improve to your knowledge and how you can apply your knowledge at working field. We have also prepared an industrial attachment according to base our industrial training. We think it provide too much assistance for our future life particularly to our working field.

Every institute gives the student theoretical knowledge of his selected subject. We think it will not fulfill without internship. When students he or she is doing his training and see the different process steps, than he or she remained his or her theoretical knowledge and they can easily understood the process sequence. In this place, our classroom was sometimes too much helpful to our training period. We see different dyeing process which we learnt our classroom, so we can easily understood the dyeing process. Sometimes we did not understand some process than we told our lacings our industrial supervisor and university supervisor.