

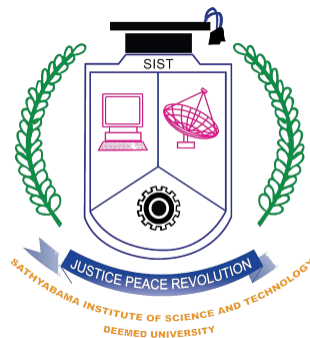
INTERNSHIP REPORT

**SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF**

BACHELOR OF SCIENCE – FASHION DESIGN

by

REENA JESMI.J (41105003)



**DEPARTMENT OF FASHION DESIGN
SCHOOL OF BUILDING AND ENVIRONMENT**

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)**

Accredited with “A++” by NAAC

JEPPIAAR NAGAR, RAJIV GANDHI SALAI, CHENNAI – 600119

JULY 2023

SCHOOL OF BUILDING AND ENVIRONMENT
DEPARTMENT OF FASHION DESIGN

INTERNSHIP REPORT (S105AINT)
2023 - 2024

Name of the Student: GREENA JESMI.J

Reg No : 41105003

Semester : V

Batch : 2021-2024



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
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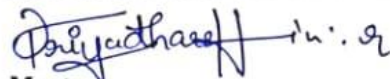
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SCHOOL OF BUILDING AND ENVIRONMENT
DEPARTMENT OF FASHION DESIGN
INTERNSHIP REPORT (S105AINT)
2023 – 2024

VIVA –VOCE EXAMINATION

This is to certify that the Internship (S105AINT) is the work of GREENA JESMI.J - 41105003, during semester V, is a student of Fashion Design department had undergone training in PENTAGON GARMENTS has been monitored by the continuous assessment during 11/05/2023 to 03/06/2023.

Submitted for Viva Voce examination held on: 06/09/2023


Mentor


Class Coordinator


Internal Examiner


External Examiner


Head of the Department
Head of the Department
Fashion Design
Sathyabama Institute of Science and Technology
Chennai-600 119.



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DECLARATION

I GREENA JESMI.J here by declare that the Internship (S105AINT) for 21 days from 11/05/2023 to 03/06/2023 done by me under the guidance of Ms. R. PRIYADHARSHINI, is my original work and is prepared based upon the data and information collected during my internship period is submitted in partial fulfilment of the requirements for the completion of practical training session.

Date: 06/09/2023

Place: CHENNAI

SIGNATURE OF THE CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to Board of Management of **SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY** for their kind encouragement in doing this Internship and completing it successfully. I am grateful to them.

I convey my thanks to **Dr. DEVYANI GANGOPADHYAY** Dean, School of Building and Environment for providing me necessary support and details at the right time during my internship period.

I express my deep sense of gratitude to **Ms. S. KRITHIKA** Head of the Department, Department of Fashion Design, School of Building and Environment, for providing me the assistance and knowledge at the right time during the progressive reviews.

I admire, the great opportunity that has provided to us and all the elements that made a contribution toward my understanding throughout this period I would like to extend my sincere gratitude to **MD Ms. BARANI RAJKUMAR** for giving me this wonderful opportunity of an industry internship program.

I would like to express my sincere and deep sense of gratitude to **Ms. R. PRIYADHARSHINI** for her valuable guidance, suggestions and constant encouragement. Paved way for the successful completion of my Training.

Last but not the least, I would also like to thank all my **FAMILY MEMBERS, FRIENDS AND RELATIVES** who shared their support to me during the Internship period.

ABSTRACT

This report is done in the garment production industry Pentagon Garments, Tamil Nadu. The report consists of the practical knowledge of how a garment is made how the factory works in order to make the garment and process. The information in this report is made by discussing, observing with the related people. The flow of the manufacturing process, different department in the garment industry and work flow etc are discussed in this report. I hope this report gives the knowledge and information a garment production industry.

BONAFIDE CERTIFICATE FROM COLLEGE

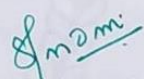

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Ref: SHD/2023/04/24/4524 April, 2023

BONAFIDE CERTIFICATE

This is to certify that **Ms. GREENA JESMI J**, Register Number **41105003** is a Bonafide student of our Institution pursuing 2nd year **BACHELOR OF SCIENCE** in **FASHION DESIGN** during the academic year **2022-2023**. She will be completing the course in the year **2024**.

This certificate is issued for the purpose of **Applying INTERNSHIP**.


DEAN (STUDENT AFFAIRS)
Dr. G. SUNDARI, M.E., Ph.D.,
DEAN (STUDENT AFFAIRS)
SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Jeppiaar Nagar, Rajiv Gandhi Salai
Chennai – 600 119.

MAIL REQUEST FROM DEPARTMENT TO COMPANY

Internship of our students regarding

Inbox



GAYATHRI N Apr 24

to rajacot, FASHION, bc... ▾



Dear Sir,

I am N. Gayathri, working as Assistant Professor in the Fashion Design department of Sathyabama Institute of Science and Technology. Students pursuing B.Sc. Fashion Design degree from our department needs to complete their internship for 21 days in their Second year as a part of their curriculum. We request you to kindly permit our students for their internship in your esteemed organization for 21 days from 11th May to 3rd June 2023. Kindly confirm your acceptance by mail.

please find the attached students name list with their register number.

Kaviya Sri.S - 41105005

Greena Jesmi.J - 41105003

Best Regards

N. Gayathri

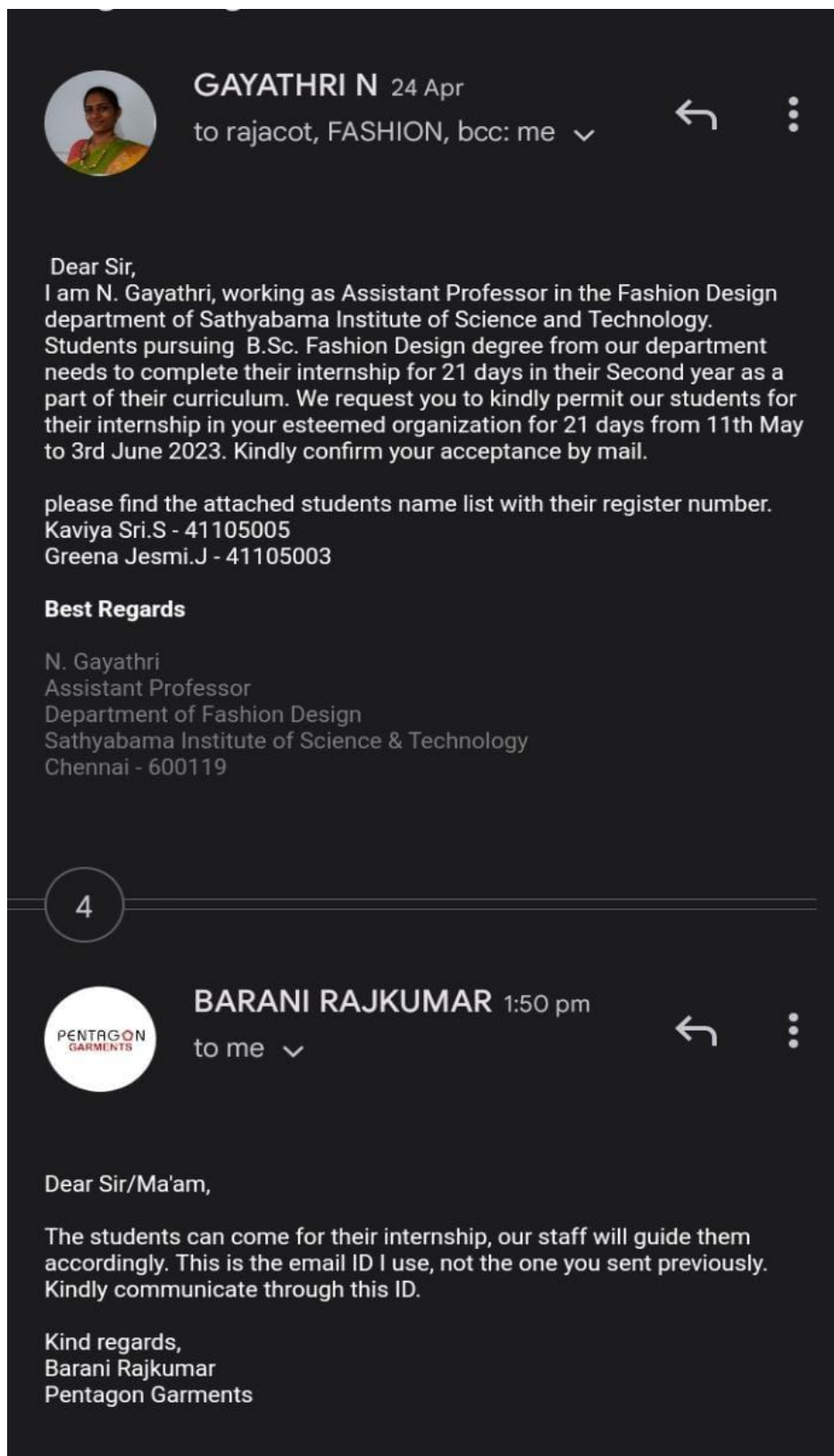
Assistant Professor

Department of Fashion Design

Sathyabama Institute of Science & Technology

Chennai - 600119

MAIL ACCEPTANCE FROM COMPANY



PERFORMANCE APPRAISAL

DEPARTMENT OF FASHION DESIGN

INTERNSHIP REPORT 2023

(Continuous progress report of the trainee for the period of 21 days in the industry to be submitted to HOD by the Trainee in Charge the Organization)

1. **Name of the Industry** : Pentagon Garments
2. **Address** : 216, Alagai Nagar, Rajapalayam-626117
3. **Name of the student** : Greena Jesmi.J
4. **Duration** : 11-05-2023 to 03-06-2023
5. **Total No. of days** : 21 days

Evaluation of performance criteria shall be on

*Note: Kindly grade the student as per her overall performance in the office during the assessment days, which will be converted to the allotted 40 marks by the department.

Description of works	Excellent	Good	Fair	Poor	NA
Understanding of the departments		✓			
Participation in the industry	✓				
Handling the given work	✓				
Punctuality		✓			
Coordination With Other Workers	✓				
Oral communication		✓			
Attitude	✓				
OVERALL PERFORMANCE	Very good				

Any other Remarks _____ Nil

Murugan

Signature of the Head of the Office:

CERTIFICATE

PENTAGON GARMENTS

216, Alagai Nagar, RAJAPALAYAM - 626 117.
Virudhunagar Dist., Tamilnadu.

Date: 05.06.2023

TO WHOM SO EVER IT MAY CONCERN

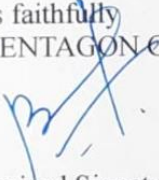
This is to certify that Ms. GREENA JESMI J. (Reg. No. 41105003) 2nd year Bachelor of Science in FASHION DESIGN student of SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY Chennai-600119 completed her Internship Training in our Organization during the period from 11.05.2023 to 03.06.2023.

During the Internship Training period she has gained knowledge in various aspects in our business.

We wish her to success in all his future endeavours.

Thanking You

Yours faithfully
For PENTAGON GARMENTS,


Authorized Signature

Cell : 9092449953, 88831 11108
Mail : raj.pentagongarments@gmail.com

GSTIN : 33CCQPS1864Q1ZN
TIN : 33575762257

INTERNSHIP DETAILS

1. INDUSTRY / ORGANIZATION: PENTAGON GARMENTS

Mentor Name : **Mr. Murugan**
Designation of the mentor: **HR**
Contact Number : **(+91) 9750943104**
Address : **Pentagon Garments 216, Alagai
Nagar Rajapalayam, Pin-code:626117 merchant.**

2. INSTITUTION: SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Mentor Name : **Ms. R. PRIYADHARSHINI**
Designation of the mentor: **Assistant Professor**
Student Name : **Greena Jesmi. J**
Department : **Fashion Design**
Address : **Jeppiaar Nagar, Rajiv Gandhi Salai,
Chennai- 600119 Tamil Nadu, INDIA.**

DAILY REPORT

DATE	REPORT
12/05/2023	Procedures to be followed while starting the industry
15/05/2023	Overall view of the company
16/05/2023	Safety measures done before starting the daily work
17/05/2023	Store Department
18/05/2023	Filing section in the store department
19/05/2023	Fabric checking Department
22/05/2023	Cutting Department
25/05/2023	Filing section in the Cutting Department
26/05/2023	Sewing Department
29/05/2023	Work of the Quecy
30/05/2023	Quality checking Department
31/05/2023	Excess Thread Removing Machine and Needle Area
01/06/2023	Packing Department
02/06/2023	Work done by me in fabric checking and cutting department
03/06/2023	Review by mentor

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1.COMPANY PROFILE

CIN	<u>U73100TN2005PTC057371</u>
Company Name	PENTAGON GARMENTS
Company Status	Active
RoC	RoC-Chennai
Registration Number	57371
Company Category	Company limited by Shares
Company Sub Category	Non-govt company
Class of Company	Private
Date of Incorporation	01 September 2005
Age of Company	17 years, 9 month, 5 days
Activity	Research and experimental development on natural sciences and engineering (NSE). [This class includes systematic creative work in the fields of research and development in natural sciences, medical sciences, agriculture and engineering & technology].
Share Capital	7,800,000 IND
Paid up Capital	7,800,000 IND

Director Identification Number	Name	Designation	Date of Appointment
01892462	KARPAGAVALLI GOVINDARAJ	Director	11 June 2009
00843134	JAWAHAR GOVINDARAJ	Director	01 September 2005
01891564	PANDURANGAN GOVINDARAJ	Director	01 September 2005

GJ INNOVATIONS & TEXTILE NETWORK PRIVATE LIMITED

GJ Innovations & Textile Network Private Limited is a Private incorporated on 01 September 2005. It is classified as non-government company and is registered at Registrar of Companies, Chennai. Its authorized share capital is Rs. 7,800,000 and its paid-up capital is Rs. 7,800,000. It is involved in Research and experimental development on natural sciences and engineering (NSE). [This class includes systematic creative work in the fields of research and development in natural sciences, medical sciences, agriculture and engineering & technology].

GJ Innovations & Textile Network Private Limited's Annual General Meeting (AGM) was last held on 30 November 2021 and as per records from Ministry of Corporate Affairs (MCA), its balance sheet was last filed on 31 March 2021.

Directors of GJ Innovations & Textile Network Private Limited are Karpagavalli Govindaraj, Pandurangan Govindaraj and Jawahar Govindaraj.

GJ Innovations & Textile Network Private Limited's Corporate Identification Number is (CIN) U73100TN2005PTC057371 and its registration number is 57371. Its Email address is jawahar.govindaraj@pentagontextiles.com and its registered address is 1/407, D.P-2, SIDCO INDUSTRIAL ESTATE SULAKKARAI VIRUDHUNAGAR TN 626003 IN .

Current status of GJ Innovations & Textile Network Private Limited is - Active.



Figure 1 (PENTAGON APPEARELS-I)

Establishments Details

Welcome to Pentagon Textiles

Pentagon Textile Network was established by a group of five highly qualified professionals from diversified industries in the Year 2006. The primary focus has been to provide excellent and cost-effective textiles product to consumer market in India and the world through creativity and innovation.

We would proudly claim innovation was triggering word for setting up Pentagon operations as our MD Mr. Jawahar has demonstrated enormous knowledge and skills in the areas of Intelligent Garments. Pentagon's desire to establish world class Textile industries setup can be traced back to its promoter's close link with textile industries and Mr. Jawahar's love and passion towards intelligent textiles. We have developed and incorporated excellent operating system to sustain the growth. Pentagon has truly incorporated the six-sigma quality, Kaizen, and 5 S to ensure the excellent quality, continuous improvement and sustainable growth. Pentagon's management council plays a very critical role in implementing the strategies, procedures and policies.

We have strategically selected the locations for weaving and garments to improve the employment situation and help the villages around Virudhunagar, Tamil Nadu. We believe in societal obligation and have been doing our best to improve the society around us.

ADDRESS

Pentagon Garments

216, Alagai Nagar

Rajapalayam

Pin-code:626117

merchant.garments@pentagontextiles.com

Contact: (+91) 9750943104

Pentagon Apparels - I

2, By-Pass Road

Virudhunagar

Pin-code:626001

merchant.garments@pentagontextiles.com

Contact: (+91) 9750943104

Pentagon Apparels - II

DP.No, 71 to 82, SIDCO New Industrial Estate, Alagapuri Main Road , Pavali,

Virudhunagar

Pin-code:626001

merchant.garments@pentagontextiles.com

Contact: (+91) 9750943104



Figure 2 (pentagon apparels-II)

PENTAGON
GARMENTS

Figure3

2. INTRODUCTION

FACTORY

Factory means any premises including the precincts whereon ten or more workers are working, or were working on any day of the preceding. Twelve months, and in any part of which a manufacturing process is being carried on with the aid of machine power.

Traditionally apparel manufacturing factories has been divided into two sectors as domestic and export.

OCCUPIER

Occupier of a Factory means the person who has ultimate control over the affairs of the Factory; any one of the partners in the firm, any one of the directors in a company, the manager in factory owned by Central Government or State Government or Local Authority.

PRINCIPAL EMPLOYER

The person who has control over all the workers in the factory. Every single type of workers and workers in all department are all under the control of the principal employer.

WORKERS

A person employed, directly or indirectly through any agency, including the contractor, with or without the knowledge of the principal employer. The workers are all the employee in the factory that does any kind of job in the factory.

HUMAN RESOURCE DEPARTMENT

The HR department handles the talent management, employee benefits, training and development, compliance and workplace safety. They are also in charge of the recruitment, arranging interviews.

The also handle the ESIC and EPF of the employee

LABOR WELFARE AND SCHEME

As per labour welfare laws,

- if a factory consists of 30 or more women workers the company should provide the employees with kid play school for their kids
- more than 150 workers, restroom, lunch area, a restroom for 20 women workers should be provided
- if more than 250 canteens should be provided. In a non-profitable way without raising the price and giving it in the normal prise

There are schemes and insurance provided by government to the workers. ESIC is one of the insurances.

Employees' State Insurance Corporation is one of the two main statutory social security bodies under the ownership of Ministry of Labor and Employment, Government of India, the other being the Employees' Provident Fund Organization. ESIC is covered through the income and on the first day of work itself ESIC is covered.

ESIC

The total of 4 % of the monthly income is paid to the government. The contribution should be paid within the 15th of the month.

It is a nonreturnable

For this insurance only employee whose monthly income is below 25,000 are eligible.

Employees contribution taken form the monthly income = 0.75%

Company contribution taken from the monthly income = 3.25%

4.00%

EPF

The total of 12% of contribution is taken from the monthly income.

Eps contribution = 8.33%

Epf employer contribution = 3.67%

12.00%

The family members who are eligible to get ESIC through a working member in family are

- unmarried – mother, father.
- married – husband, child, parents of the insured person.

For physically challenged people government pays the contribution for the first two years. The eligibility for the ESIC for physically challenged people are 25,000 and below.

Maternity leave

The government gives one year for pregnant women

Contribution period

- April – September
- October – March

78 days of work and 6 months of paid leave with 100% wage.

3.STORE DEPARTMENT

Store department is where the trims and fabrics are stored. Store department also has the stationary things that the factory needs. The store has things like

- Buttons
- Elastics
- Paper
- Inner board
- Needles
- Chalk
- Labels
- HT labels
- Clips
- IP cards
- Poly bags
- Bulk box



Figure 2 (store department)

FABRIC SHADING

To control the shade variation and get the correct shade in garments, the shade should be controlled in the fabric stage itself. Shade should be watch carefully. Complete garment may get rejected for shade. Shade variation is the most important thing in the dyeing and printing stage in textile industry.

The shading is done by CSV and LSV

CSV – centre to selvedge variation

LSV – length wise shade variation

1	2	3	4	5
---	---	---	---	---

4	1	3	5	2
---	---	---	---	---

To determine shading variation within a roll.

- Cut off 8” of fabric across the width of the fabric at the beginning and end of the roll being inspected.
- The cut fabrics are divided into 5 pieces and then stitched in a jumbled order.
- The jumbled order will help with the fining the shading variation.
- The jumbled order is 41352

LSV

Likewise, LSV is done length wise for shade variation.

SHADE BAND – COLOUR CONTINUITY CARD

- To check colour consistency from the dyed lots.
- A small piece of fabric is cut from all the rolls to the colour continuity card.
- The shades are checked against the buyer-approved colour standard.

- If there is a shading variation. Identify shading trends whether they are consistent or not Check shading relativity for possible shade groupings if necessary and get necessary approvals.

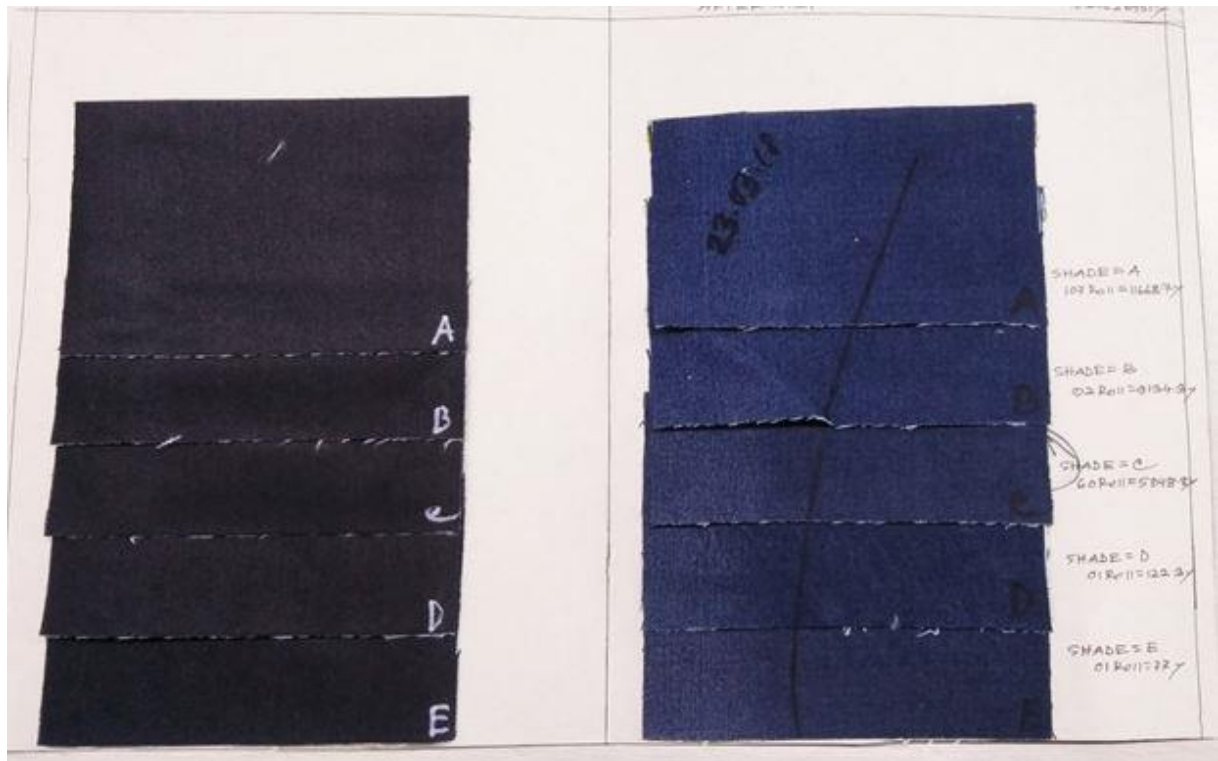


Figure 3 (samples of shade variation in rolls)



Figure 4 (shade variation)

4.FABRIC INSPECTION DEPARTMENT

The fabric inspection department does the inspection on the fabric using fabric inspection machine and rate each roll with points. The points are given on the bases of how many defects has been found and how long the defects are. The GSM of the fabric and width of the fabric is also checked. If the GSM is lower than then required level the roll will be rejected. The trims that are used for the garment is also checked and send to the line for production.

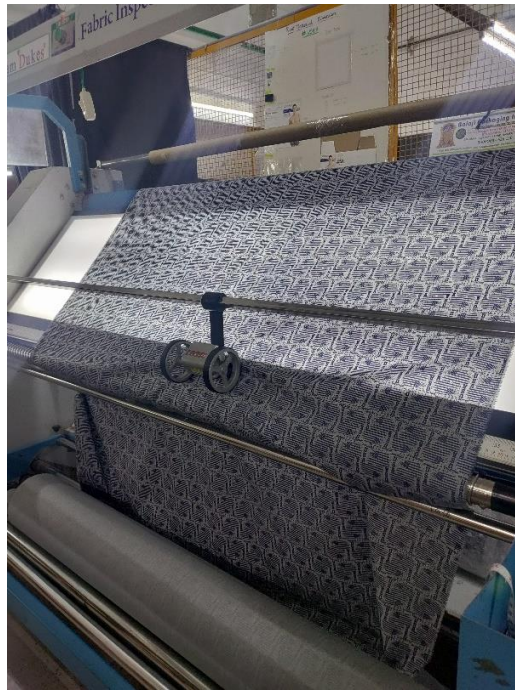


Figure 5 (fabric inspection)



Figure 6 (fabric inspection)

Defects that can be founded in woven fabric:

- Slabs
- Thick-pick
- Thick end
- Shade cutting holes
- Miss pick
- Miss end
- Double pick
- Double end
- Weaving defects
- Wrong pattern
- Cut marks
- Belt marks
- Stoppage marks
- Patches
- Wrinkles-centre/edge
- Crease/fold marks
- Stains-colour/oil/mud
- Miss print
- Colour bleeding
- Seam slippage

Slabs

The fabric has a thick chunk that is called slab.

Thick pick

Thickness of the fabric in a horizontal way on a specific area.

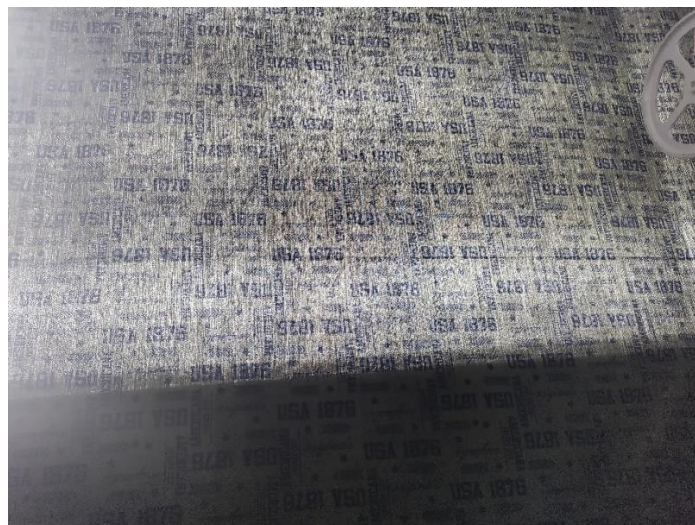


Figure 7 (defect-thick pick)

End out

Missing of a thread in the vertical line and has an empty space. End out are the threads that are missed vertically.

Miss pick

Almost similar to end out. Miss pick are the ones that the thread is miss horizontally



Figure 8(defect - miss pick)

Double pick

This is where the thickness of the fabric is more than one strand and has bold line of thick threads.

Stains

If there are any stains such as oil, colour, mud or any other kind of stains.

Points are given to the mistakes as follow

- 1 points = 1 inches to 3 inches
- 2 points = 3 inches to 6 inches
- 3 points = 6 inches to 9 inches
- 4 points = 9 or more inches

The inspected fabrics are given a label to note the roll number, GSM, by whom it was inspected and all the selected rolls are given green label whereas the rejected ones are given red label and stocked in the rejected rack.

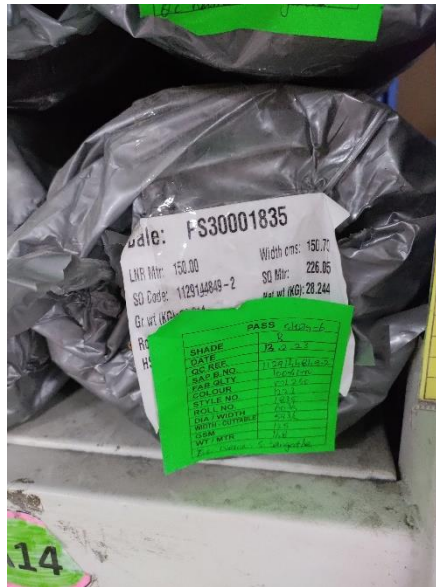


Figure 9 (passed fabric in ifabric inspection)

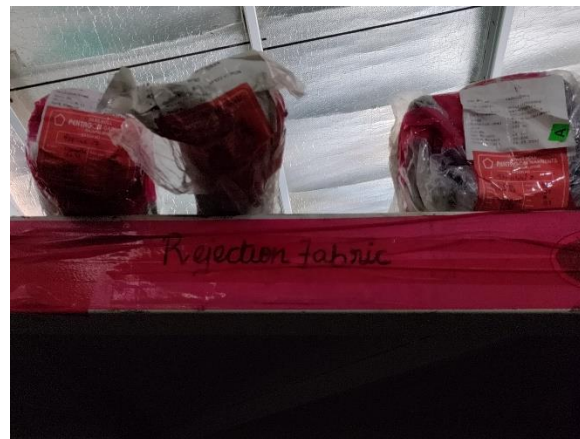


Figure 10 (rejected fabric in fabric inspection)

GSM

The full form of GSM is Gram per sq. meter. For checking the GSM, a fabric cutting machine is used and the fabric is cut in circle and then the fabric is weighted in a GSM weighting machine.

GSM CUTTER

The GSM cutter is a textile testing instrument. That is used for measuring fabric GSM with the aid of weighting scale. The instrument is equipped with a set of four replaceable blades and a cutting pad.

To measure the fabric GSM accurately the cutter is used as it cuts a uniform circle. Fabric GSM is the one of the most important fabric qualities. The fabric costing and fabric quality is determined with the GSM of the fabric.

A GSM cutter can be used for cutting the fabric sample of any type of fabric for checking the fabric weight. The weight of the circular fabric is in grams.



Figure 11 (gsm cutter)

The fabric cutting machine:

1. Instrument is used to cut any type of fabric – woven/knits/nonwoven/paper in circle
2. Metal platform eliminates completely regular use of GSM cutter blades and pad hence saves time
3. Any kind of industrial textile paper and textile material of any GSM can be cut accurately.
4. Safely and firmly grips fabric to cut 100 cm. sq. fabric samples
5. Hardened metal wheels to ensure smooth and long knife life

GSM BALANCE MACHINE

This machine is used to weight the fabric cut which is cut by the GSM cutting machine (GSM sample fabric) in gram. The GSM Cutter is a textile testing machine that uses a weighing scale and a GSM pad to determine fabric GSM. This fabric sample cutter helps to evaluate the product quality by cutting the specimen in a circular shape. If the specimen will be cut precisely, then you will be able to get highly accurate testing results. GSM will be calculated by multiplying the weight of the sample in grams with 1000 and dividing the whole by the area of the sample in cm².



Figure 12 (gsm balance machine)

1. The cut piece of the fabric GSM can be mounted on this machine for direct reading as GSM
2. It can be used for multipurpose weighting options up to 600 grams in 0.01grams.
3. Can read results in grams, Oz's, carets, etc.
4. The instrument is repairable and re-calibratable.
5. Adapter or battery interfaced.

FABRIC INSPECTION MACHINE



Figure 13 (inspection of fabric before cutting)



Figure 14 (fabric inspection machine)

Fabric inspection machine is used to inspect the fabric for any manufacturing defects or dirty stains. The fabric inspection machine has an illuminated panel under the material and a measuring meter above the fabric to measure the length of the fabric. The speed of the machine can be controlled using a controller.

This machine also has fabric relaxing option. The relaxing panel is at the bottom back of the machine. Relaxing is mostly used for knitted fabric.

- Suitable for all kind of fabric
- Variables speed up to 5 – 50 meter/minute
- Full forward and reverse run
- Top and bottom illumination
- Mechanical counter meter
- Tension control
- Scroll roll and bow pipe to control crease
- Wide measuring scale
- Relaxing panel

FABRIC INSPECTION FORMAT

The fabrics are inspected and rated with a 4-point system and noted in a report sheet.

FPT – fabric package testing

The term “Fabric Package Test” refers to various types of testing parameters. Each buyer sets guidelines for what all tests are mandatory at fabric stage and subsequent in garment stage. Buyers send this package tests list to their nominated testing labs. Fabric tests are primarily determined by the yarn, count, and fibre content of the fabric. If the test fails, it must be resubmitted and approved. The buyer, on the other hand, will not accept any failure report. The FPT test is being performed at an approved testing facility.

Testing parameters:

- Shade
- Hand feel
- Dimensional change
- Fabric width
- Fabric weight
- Fabric construction
- Piling resistance
- Tensile strength
- Tear strength
- Colour fastness to washing
- Colour fastness to perspiration
- Colour fastness to water

FPT report consist of:

- Vendor name
- Fabric supplier
- Processer
- Colour
- Batch.no
- Lot.no
- End use



Figure 16 (fpt report)

Page Industries Testing Laboratory - Unit 4
(Begur Hobli, Hange Sandur, Dematturur, BANGALORE, 560098)

LAB TEST REPORT

Report No: 42315066

Date In: 06-02-2023 03:50
Date Out: 10-02-2023 03:48

Customer Name: Product Development
Contact Name: Mr. Veloo Prabhakaran
Vendor Name: PENTAGON
Parent Supplier: ARVIND
Garment Manufacturer: PENTAGON GARMENTS
Yarn Mill: -
Knitter Name: -
Knitting Dia / Gauge: -
Processor: ARVIND
Finishing Type: NORMAL FINISH
Finishing Width: 60"
Type Of Sample: Bulk Lot Sample
Package Type: Woven Fabric Package Test
Previous Report No: -

Sample Description: Woven Fabric
Quality: 405X405/120X72.YDC
Color: ML241
Design No: -
Vendor Batch No: 1291444501
Ply No: 4522019224/9226/9949/9951
Style No: 1222/1223
Fibre Content: 100% COTTON
Size Of Garment: -
Roll No Tested: 8499
Total Lot Qty: 1688.00 M
End Use: BOXER SHORTS
Wash Program: -
Other Details: -

Submitted Wash Care: Machine wash normal warm, Tumble dry, normal low heat, iron low. Do not dry clean

PO. NO - 4523003298

Test Name	Parameter	Results	UoM	Requirement	Conclusion
Shade	Shade	OK		As per PO approved s/d	Pass
Handfeel	Hand Feel (Fabric)	OK		As per PO approved s/d	Pass
Dimensional Change After 3rd Wash	Dimensional change - 3rd wash (Length)	-2.9	%	-3.00	Pass
Dimensional Change After 3rd Wash	Dimensional change - 3rd Wash (Width)	-0.5	%	-3.00	Pass
Fabric Width	Width Fabric - End to End (All)	58.00	IN	58.00	Pass
Fabric Width	Width Fabric - Cuttable (All)	57.00	IN	57.00	Pass
Remarks	High dia				
Fabric Weight	Fabric Weight	126.000	GSM	120.00	Pass

1 of 3

Figure 17 (fpt report)

Page Industries Testing Laboratory - Unit 4 (Begur Hobli, Hanga Sarani, Bommasahalli, BANGALORE, 560088)					
LAB TEST REPORT			Report No. 42315066		
Test Name	Parameter	Results	Unit	Requirement	Conclusion
Fabric Construction (ASTM D3775 - 17)	Ends Per Inch	120	Nm	120.00	Pass
	Picks Per Inch	72	Nm	72.00	Pass
Pilling Resistance (ASTM D5852 / D5852M - 16) After 30 min	Pilling Resistance (Rating)	4.0	Rtg	3.50	Pass
Tensile Strength ASTM D6034 - 09(2017) mtc using CRE (1" Grab method)	Tensile Strength - Warp	81.6	lbf	> 25.00	Pass
	Tensile Strength - Weft	36.0	lbf	> 25.00	Pass
Tear Strength ASTM D1424 - 09(2013) Type of mtc used: Elmendorf Tearing Tester	Tear Strength - Warp	1450.6	gmf	> 907.00	Pass
	Tear Strength - Weft	1130.6	gmf	> 907.00	Pass
Color Fastness to Washing (AATCC 61-2010)gram - 2A, Liquor Ra. 1:15 GRL, Deterg. balls 50, Duration 45 min, Temp 40°C, Detergent: 1993 WOB Ref. detergent)	CF to Washing - Color Change Aciute	4.0	grd	4.00	Pass
	CF to Washing - Self Staining	4.0	grd	4.00	Pass
	CF to Washing - Staining on Acetate	4.5	grd	3.50	Pass
	CF to Washing - Staining on Cotton	4.0	grd	3.50	Pass
	CF to Washing - Staining on Nylon	4.5	grd	3.50	Pass
	CF to Washing - Staining on Polyester	4.5	grd	3.50	Pass
	CF to Washing - Staining on Acrylic	4.5	grd	3.50	Pass
	CF to Washing - Staining on Wool	4.5	grd	3.50	Pass
Remarks: Solution staining - 3.9					
Color Fastness to Perspiration (AATCC 15-2021)	CF to Perspiration-Color Change	4.0	grd	4.00	Pass
	CF to Perspiration - Self Staining	4.0	grd	4.00	Pass
	CF to Perspiration - Staining on Acetate	4.5	grd	3.50	Pass
	CF to Perspiration - Staining on Cotton	4.5	grd	3.50	Pass
	CF to Perspiration - Staining on Nylon	4.5	grd	3.50	Pass
	CF to Perspiration-Staining on Polyester	4.5	grd	3.50	Pass
	CF to Perspiration-Staining on Acrylic	4.5	grd	3.50	Pass
	CF to Perspiration-Staining on Wool	4.5	grd	3.50	Pass
Color Fastness to Water (ISO 105-E01:2013)	CF to Water - Color Change	4	grd	4	Pass
	CF to Water - Self Staining	4	grd	4	Pass
	CF to Water - Staining on Acetate	4-5	grd	4	Pass
	CF to Water - Staining on Cotton	4-5	grd	4	Pass
	CF to Water - Staining on Nylon	4-5	grd	4	Pass
	CF to Water - Staining on Polyester	4-5	grd	4	Pass
	CF to Water - Staining on Acrylic	4-5	grd	4	Pass
	CF to Water - Staining on Wool	4-5	grd	4	Pass

Figure 18 (fpt report)

Page Industries Testing Laboratory - Unit 4

(Begur Hobli, Hanga Sarani, Bommasahalli, BANGALORE, 560088)

LAB TEST REPORT

Report No. 42315066

Test Name	Parameter	Results	Unit	Requirement	Conclusion
Color Fastness to Crocking (AATCC 8-2018)	Dry	4.5	grd	4.00	Pass
	Wet	2.5	grd	2.50	Pass
Absorbency (AATCC 79-2013) Option II	Absorbency	3	s	< 30.00	Pass
pH Value (ISO 3071:2002) Extracting Solution: KCL	pH Value	6.6	Nm	5.50 TO 7.50	Pass

Overall Remarks :

Interpretation:

Color Fastness: 5-Very poor, 4.5-Poor, 2-Fair, 2.5-Slightly fair, 3-Moderate, 3.5-Good, 4-Very good, 4.5-Excellent, 5-Outstanding

Pilling: 1-Severe pilling/fuzziness, 2-Moderate pilling/fuzziness, 3-Moderate pilling/fuzziness, 4-Slight pilling/fuzziness, 5-No pilling/fuzziness

NOTE:

- The standard method for the above test procedure is (1) (1).
- Any comparison of the report or test result with our other documents, the results in this report represent only what is reported to the laboratory under the responsibility of the customer to ensure the entire lot quantity has the same quality or absorbency as reported in the laboratory.
- For actual values based on the test conducted in laboratory (sample and 10) the vendor's responsibility to replace the required quality on which the lot.
- Barcodes identified within the report will be used for internal and external use.
- Decision made is based on the requirement of the customer and the laboratory's internal team.
- Test results are not to be used for any other purpose.
- Accession for Page L1, Please refer L1L, Test result.

AUTHORIZED BY

For Page Industries Testing Laboratory - Unit 4

Name: Rishika Nish

Designation: Executive

CONTACT DETAILS

For Technical Queries: Mr. Vinay Kumar H KSM (Shrikumar S)

Email: vinay.kumar@pageindia.com

END OF THE TEST REPORT

3 of 3

Figure 19 (fpt report)

ORIGINAL FOR RECEIPT

TAX INVOICE

Address: ARVIND LIMITED (WOVENS DIVISION) SANTEJ P O KHATRAJ TAL. KALOL DIST. GANDHINAGAR Gandhinagar 382721 Gujarat India GSTIN: 24AABCA2398D120 CIN: L17119GU1901PLC000093 E-Mail: customer.support@arvind.in

Nature of Transaction: Interstate Supply Invoice No: SD2229979 Customer Type: Registered Invoice Date: 31.12.2022 Nature of Supply: Goods Credit Term: 1149157259

Principal Place of Business: Railwaypura Post, Naroda Road, Ahmedabad 380025, India

Customer Code/ Customer P.O. No.	Bill to Address	Delivery to	SR code name & address
407281 N/A	M/S PENTAGON GARMENTS M/S PENTAGON GARMENTS NO 216 ALAGAN NAGAR RAJAPALAYAM VIRUCHUNAGAR TAMIL NADU 626117	M/S PENTAGON GARMENTS NO 216 ALAGAN NAGAR, RAJAPALAYAM VIRUCHUNAGAR 626117 TAMILNADU TN NO 335762257 CST NO 33008008 09 2009	

Customer GSTIN & State Code	Transporter	LR No & Date	GR WT / NLWT	Payment Terms	Packing Forms Bale/Roll
33AAWT9068P7J2	STS		319.020	Z030	1129144850
33 - Tamil Nadu	GJ27TT1155		310.557		

Cust Mat. No HSN/ SAC Code	Material No / Style No Product Desc	Lot no / Bale no / Batch No	Pcs Width(cm)	Qty/Cat UCM	Qty	Ex Mill (Rs/UCM)	Amount (Rs.)
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	160.00	146.50	23,440.00
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	170.00	146.50	24,905.00
	✓ 1129144850-11 P520298506	✓	1/150.67	Fresh / M	146.00	146.50	21,242.50
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	160.00	146.50	23,440.00
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	96.00	146.50	14,054.00
Total NO Of Pack / M / Val		11.00		1,688.00		247,292.00	

Trade Disc%	Cash Disc%	Insurance / Forwarding Charges (Rs.)	Handling Charges (Rs.)	Assessable Values (Rs.)	CGST Rate Amount	SGST Rate Amount	IGST Rate Amount	Total GST	TCS
				247,292.40			5.00 %	12,364.60	0.100%
Amount Payable		Cash Disc	Net Amount	Net Amount RUPEES IN WORDS					
259,657.00			259,657.00	TWO LAKH FIFTY NINE THOUSAND NINE HUNDRED SEVENTEEN RUPEES ONLY					

Remarks: ROAD VIRUCHUNAGAR (TAMILNADU) Proper doc for Single Invoice Single LR - STS

Additional Remarks: ROAD VIRUCHUNAGAR (TAMILNADU) Proper doc for Single Invoice Single LR - STS

LC No: 1129144850 LC Date: 31/12/2022

Insurance No: 1129144850

Note: All the Transaction are subjected to Ahmedabad jurisdiction only
This is system generated Invoice Copy

For, Arvind Limited

AUTHORISED SIGNATORY

Figure 20 (fpt report)

ORIGINAL FOR RECEIPT

TAX INVOICE

Address: ARVIND LIMITED (WOVENS DIVISION) SANTEJ P O KHATRAJ TAL. KALOL DIST. GANDHINAGAR Gandhinagar 382721 Gujarat India GSTIN: 24AABCA2398D120 CIN: L17119GU1901PLC000093 E-Mail: customer.support@arvind.in

Nature of Transaction: Interstate Supply Invoice No: SD2229979 Customer Type: Registered Invoice Date: 31.12.2022 Nature of Supply: Goods Credit Term: 1149157259

Place of Business: Railwaypura Post, Naroda Road, Ahmedabad 380025, India

Customer Code/ Customer P.O. No.	Bill to Address	Delivery to	SR code name & address
407281 N/A	M/S PENTAGON GARMENTS M/S PENTAGON GARMENTS NO 216 ALAGAN NAGAR RAJAPALAYAM VIRUCHUNAGAR TAMIL NADU 626117	M/S PENTAGON GARMENTS NO 216 ALAGAN NAGAR, RAJAPALAYAM VIRUCHUNAGAR 626117 TAMILNADU TN NO 335762257 CST NO 33008008 09 2009	

Customer GSTIN & State Code	Transporter	LR No & Date	GR WT / NLWT	Payment Terms	Packing Forms Bale/Roll
33AAWT9068P7J2	STS		311.020	Z030	1129144850
33 - Tamil Nadu	GJ27TT1155		310.557		

Cust Mat. No HSN/ SAC Code	Material No / Style No Product Desc	Lot no / Bale no / Batch No	Pcs Width(cm)	Qty/Cat UCM	Qty	Ex Mill (Rs/UCM)	Amount (Rs.)
1222122356 2021 ML241	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	160.00	146.50	23,440.00
32984230	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	150.00	146.50	21,975.00
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	166.00	146.50	24,319.00
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	158.00	146.50	23,147.00
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	150.00	146.50	21,975.00
	✓ 1129144850-11 P520298503	✓	1/150.67	Fresh / M	173.00	146.50	25,344.50

Trade Disc%	Cash Disc%	Insurance / Forwarding Charges (Rs.)	Handling Charges (Rs.)	Assessable Values (Rs.)	CGST Rate Amount	SGST Rate Amount	IGST Rate Amount	Total GST	TCS
				247,292.40			5.00 %	12,364.60	0.100%
Amount Payable		Cash Disc	Net Amount	Net Amount RUPEES IN WORDS					
259,657.00			259,657.00	TWO LAKH FIFTY NINE THOUSAND NINE HUNDRED SEVENTEEN RUPEES ONLY					

Remarks: ROAD VIRUCHUNAGAR (TAMILNADU) Proper doc for Single Invoice Single LR - STS

Additional Remarks: ROAD VIRUCHUNAGAR (TAMILNADU) Proper doc for Single Invoice Single LR - STS

LC No: 1129144850 LC Date: 31/12/2022

Insurance No: 1129144850

Note: All the Transaction are subjected to Ahmedabad jurisdiction only
This is system generated Invoice Copy

For, Arvind Limited

AUTHORISED SIGNATORY

Figure 21 (fpt report)

5.CUTTING DEPARTMENT



Figure 22 (fabric laying for cutting)

The inspected fabrics are sent to the cutting department for the cutting. The fabrics are sent to the cutting department according to the grades that fabric is classified. Then the lay of the fabric is done manually in cutting table. Two persons pull the fabric for the lay and two persons will cut the end with an end fabric cutting machine, which cuts the fabric straight. Then the fabric is leaved for relaxation the pattern printed paper leaved on the top of the fabric. And the using a straight knife cutting machine the fabrics are according the pattern on the paper. Then checked and stickered. If there are any defect piece in the cut fabric the pieces are replaced with a recutting piece and then bundled for feeding.

APPROVAL OF BULK PATTERN

In exporting orders, the fitting and correction of the done in varies stage. The garment patterns are modified and corrected. Multiple corrections and modifications are done on the pattern prior to bulk cutting. Though the receiving right pattern is taken care there are chances of wrong pattern from the pattern department, so the pattern must be checked whether the pattern is signed for the bulk cutting.

FABRIC RELAXTATION

For relaxation required fabric relaxation should be done prior the laying process. As the fabric comes in a roll form the fabric mill the fabrics are stretched and the fabric is cut without relaxation. Shrinkage may happen on garment components after cutting.

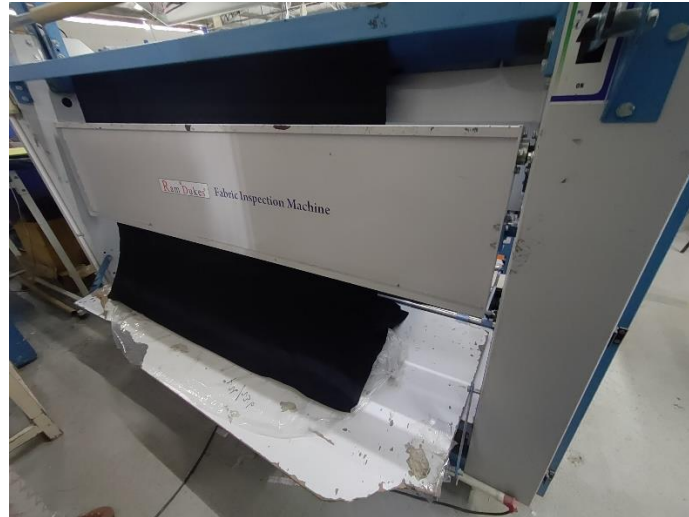


Figure 23 (RELAXATION OF FABRIC ON INSPECTION MACHINE)

The relaxation is done in the inspection machine itself as is has the relating options,

PATTERN MAKING

The pattern marking is done according to the ratio and color wise quantity. The cutting team plans and they send the ratio to the marking team as they will mark according to the given ratio and size. Then the marking team will mark the pattern in a paper that is placed upon the fabric for cutting. In this company the pattern is marked in a paper in another branch and send back for cutting. The cutting team in this company will update the required patterns to the other branch trough ERP and then the marked pattern papers are received for cutting.



Figure 24 (PATTERNS MARKED IN SHEETS FOR CUTTING)

The ratio is the size that should be in a pattern paper.

CUTTING

The fabrics are cut by following the pattern given by the marking team using a **straight knife cutting machine**. Each set of cut pattern has 21 pieces of cut fabric. Then the cut fabrics are checked and reported in a report sheet. The stickering is done and bundled. After the bundling the fabrics are sent for feeding to the sewing department.



Figure 25 (fabric cutting)

STICKERING

After cutting the garment panels, number marking is done to each layer and each garment component. The method used to stick a numbering sticker on the garment cut panels is known as stickering. The stickers attached to the panels help other departments to identify the order number, style number, size, fabric lot number of the garment from the serial number printed on the sticker. A hand labelling machine is used for attaching this gum sticker to the fabric panels. The stickering machine prints a pre-designed number on the paper sticker. stickering is done after cutting the fabric layer and sorting the layers. This process is done prior to bundling process.

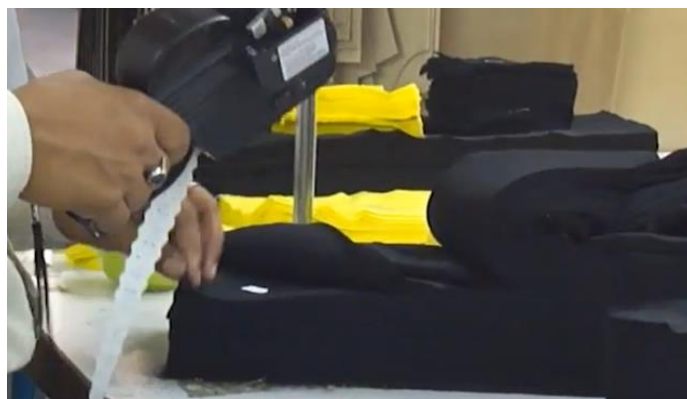


Figure 26 (stickering process)

BUNDLING

In bundling the cut garment panels are put into a bundle of every required part to mark the complete garment of 21 pieces of garment. The recutting will be done parallelly to close the bundle with the replacement of the damaged panels. Then the bundle is sent to feeding in the sewing department. Bundling is a common term used in the cutting room process. It is the way of counting pieces cut in the cutting room. Bundling helps the cutting department to handle cuttings and to store cutting inventory. They send cut parts to the sewing section as per the requisition received from the sewing floor. A bundle made of 10-20 units of garments, where all garment components are tied together.



Figure 27 (fabrics on waiting for bundling)



Figure 28 (bundled fabrics)



Figure 29 (recutting of the defected fabric piece manually)

STRAIGHT KNIFE CUTTING MACHINE

On a wide and long table, fabrics are laid in layers. After completion of layering 5-6 inches thick layer, markers are made on the top of the layer. The height of the fabric lay depends on the cutting machine blade. After marker making, the fabric lay is cut as per the marker using a cutting machine. It is moved along the cut contours, while the fabric spread remains in a fixed position. The machines are manoeuvrable and capable of curvilinear cutting. It is the most useful cutting instrument in garment cutting. In apparel industry, more than 99% cases this knife is used.

This machine is called straight knife cutting machine because its cutter is straight in shape. It is used for both woven and knit fabric. In this machine different types of straight knife are used according to the different cutting objects. This machine provides good efficiency.



Figure 30 (cutting the layed fabric with straight knife cutting machine)

Features of Straight Knife Cutting machine:

- The main parts of this machine are straight knife, electric motor, handle, grinder, base plate, stand/ knife holder, lubricating unit, wheel etc.
- Could be used to cut higher depth of fabric.
- Knife height is 10 cm to 33 cm.
- Knife stroke is 2.5 cm to 4.5 cm.
- Motor r.p.m. is 3000 to 4000.
- Auto grinder is used.
- Auto lubricating unit works for this machine.
- Different types of knife edge are used for cutting different objects. Such as, straight edge, wave edge, sew edge and serrated edge.
- A Handle for the cutter to direct the Knife.
- Knife guard is attached to the front of the knife.
- Sharp and heavy corners can be cut.
- Maximum 70% of knife height is used for fabric lay.
- Wheels are under the base plate to move the machine smoothly.
- Machine weight is around 12-15 kg.
- Knife cut the fabric very fast due to high speed of motor. That increases the risk of fabric damage.
- Suitable for mass trimming cotton, woollen, linen leather and chemical fibre goods, etc.
- Neat cutting, small-curvature radius curvilinear cutting.
- Low noise, stable running, easy to operate and high efficiency.
- Incorporated with an auto knife-grinding device, easier to operate.

Different Parts of Straight Knife Cutting Machine:

1. Upper handle,
2. Electrical cable,
3. Motor,
4. Side handle,
5. Knife sharpener,
6. Stand,
7. Presser foot,
8. Straight knife, and
9. Base plate with rollers.

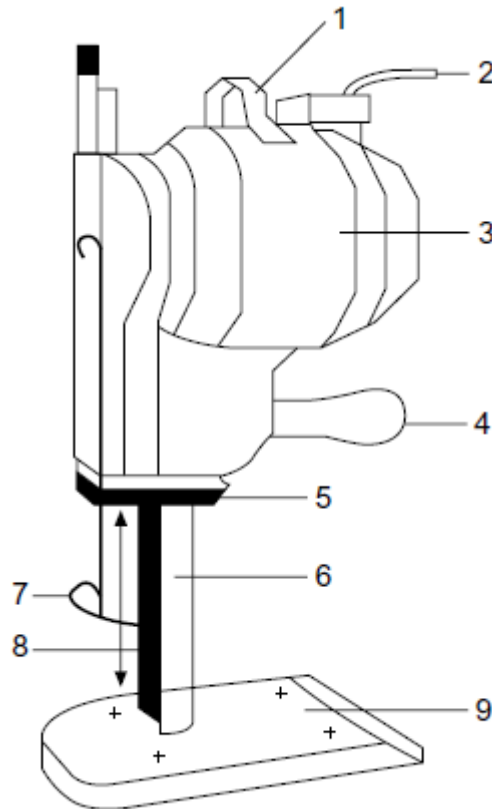


Figure 31 (straight knife cutting machine)

Straight knife:

The main functional part of the machine is a vertically oscillating straight knife with a sharp blade. In more powerful machines, the knife is longer, and higher spreads can be cut (80–300 mm). The width of the knives is between 10 and 20 mm and the thickness from 0.40 to 0.45 mm. The thickness of the knife is directly proportional to its length. Double-bevel knives with straight-edged blades are normally used to cut textile materials.

BAND KNIFE CUTTING MACHINE

A band knife blade is a thin steel band that is moving continuously on a rubberized guide wheel. Such band is usually narrower than the blade in a straight knife machine. That is why it offers a higher accuracy during cutting. The band knife cutting machine significantly reduces material cutting time compared to vertical and circular knives, and also minimizes the number of uneven cuts.

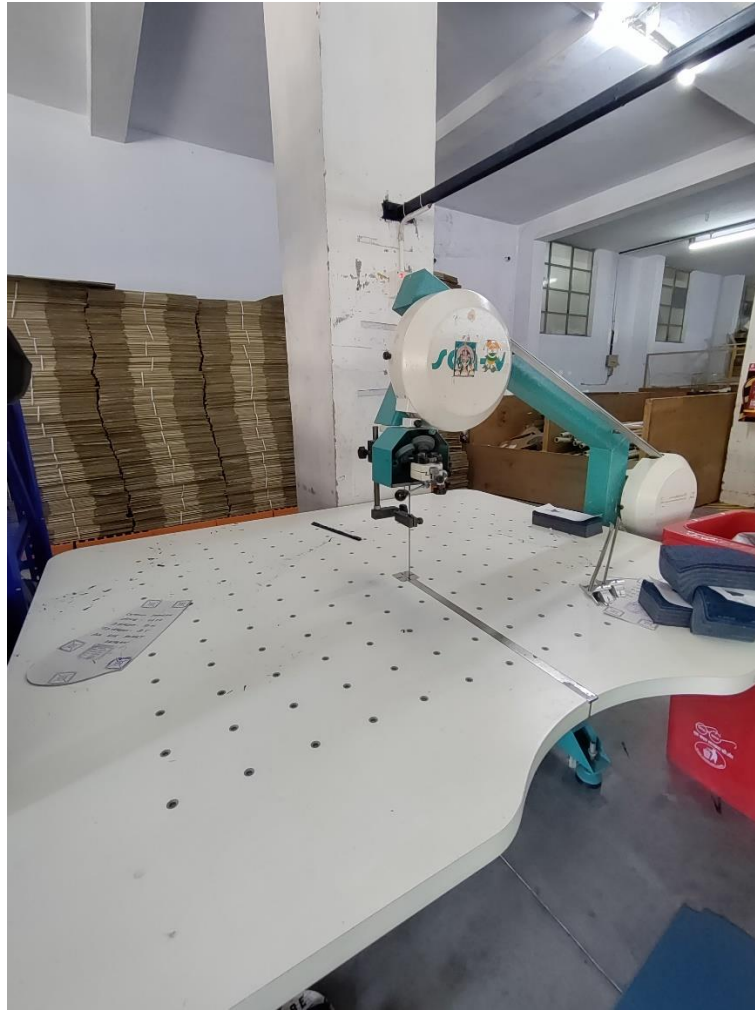


Figure 32 (band knife cutting machine)

Advantages of Band Knife Cutting Machine:

This type of cutting machine has a lot of advantages which are mentioned below:

- Band knife cutting machine is suitable for any type of line.
- It has higher productivity for limited products.
- It is also suitable for cutting small parts of fabrics.
- In-band knife cutting machine, the automatic grinder grinds the knife instantly.
- It is used especially.
- It is suitable to cut very sharp curves.
- Band knife cutting machine cuts the fabric at 90° angle of the lay.
- Here, the air blower helps to decrease the fabric weight which ultimately increases the smooth movement of fabrics.
- Accident possibly is very low here.

Disadvantages of Band Knife Cutting Machine:

Band knife cutting machines have also some disadvantages which are narrated in the following:

- Band knife cutting machine is comprised of a fixed space.
- The workload is higher.
- Here, it's not possible to cut the fabric directly from the lay.
- The running cost is higher.
- Fabric wastage is higher here.
- Band knife cutting machine is not suitable for large fabric components due to the shortage length of the table.

STICKERING MACHINE



Figure 33 (machine used for stickering)

This machine is used for stickering the fabric pieces. It prints the details which are entered in the sticker half of the sticker is peeled and then the sticker is stuck to the fabric.

6.PRODUCTION DEPARTMENT

The whole construction process of the garment is done in the sewing department. From side seam to button finish is done. The cut fabrics from the cutting department is supplied to the tailors in the sewing department in bundles which is done in cutting itself. Sewing department is the busiest in a garment industry as it has to be done faster and perfectly. They have the target of how many pieces has to be finished in a day. They use varies types of machines for each process.

Functions of the Sewing department

- Collect input material from the cutting section and feed it to the sewing line.
- Sew the process of the full garment by process as per line layout and operation bulletin.
- Ensure correct sewing thread, label, and shade during process work.
- Responsible for all sewing operations in a garment.
- Fill up daily production targets as per planning and report.
- Responsible for completing all sewing processes and sending to next process washing/ finishing.
- 100% quality inspection before moving from this department.
- Operator by operator efficiency increases and overall productivity improvement.
- Follow up on every individual sewing process maintaining good quality.
- Handover sewing output garments to the next section.
- Taking care overall sewing department and being responsible for this department.



Figure 34 (production department)

Each of the parts of a clothing should be sewed or assembled in order to make a complete apparel that are wearable. The sorted bundles of fabrics are now ready to be stitched. There are what is called sewing stations for sewing different parts of the cut pieces. In this workplace, there are many operators who perform a single operation. One operator may make

only straight seams, while another may make sleeve insets. Yet another two operators can sew the waist seams, and make button holes.



Figure 35 (over-locking at side seams)



Figure 36 (attachment of both end of the elastic)



Figure 37 (attachment of elastic to the garment)

a. Style Analysis

The line supervisor analyses the garment construction of the style to be loaded to the line. He calculates the machine requirement for the style, based on the garment construction.

b. Planning and scheduling floor level production

The floor in-charge and line supervisors plan the daily production output. They take information on upcoming orders from merchandisers or the planning department and plan manpower and machine requirements in advance.

c. Setting the line

Line supervisors set the sewing line for new orders. Line setting involves the tasks of placing sewing in a sequence, by allocating operators to each machine, giving work to operators and helpers and giving instructions to operators on how to undertake operations and the required stitching quality.

d. Stitching garments

The sewing department stitches garments and makes clothes. Operators sew garments using different types of sewing machines. An operator can be given single or multiple operations to sew.

e. Balancing the assembly line

To get maximum production from the line, line supervisors balance line by adding additional operator, or by clubbing operations. Read this article to learn about line balancing.

f. Marking parts

Marking is done on the garment component needed to point a position from where the stitching is to be done. Helpers mark on garment parts as per process requirement by using marking chalk and magic marker.

g. Ironing garment components

Garment components might need to be folded and ironed prior to stitching to improve seam quality. Portable irons are used for ironing on garment parts.

h. Checking stitched garments:

Garments are checked in line and off the line. The purpose of checking garments is to reduce defect generation from the line. The end-of-line checker segregates defective pieces from the good pieces. Read quality checking procedures in garment production.

i. Stitching alteration:

After segregation, defective garments are sent back to the stitching section. Seams are repaired by re-stitching. If defects are related to the fabric, part changing is done by replacing the defective component with the correct part.

TRAFFIC LIGHT SYSTEM

This system is used to stop producing defect at the source. This is a random inspection system. The format used for displaying as well as recording audit report. The format is very simple to use and to understand. The format is printed on a slightly thick A4 sheet and hanged on the sewing machine. In this system quality line in charge visit operator's workplace 4 times in a day and inspects stitched garments and fill circles with colour according to the inspection result. If auditor found any defective piece respective circle to be filled by RED colour. If red colour is marked on the inspection sheet, all stitched pieces must be checked by an auditor. Green indicates that Quality meets the customers Standard. Yellow indicates that a minor fault has been found and caution is required. Red indicates that the Quality Standard does not meet the customers standard requirement.

Standard Sample Size: 5 pieces. Garment Inspection to be done after every two hours.
 Colour marking procedures: Circles will be filled with colour

- **GREEN:** If found No defect
- **YELLOW:** If found 1 defect
- **RED:** If found 2 or more defects

Traffic Light System ABC Exports																
Operation Name: _____ Operator: _____ Line: _____ Floor: _____ Month: _____ Instructions: Each operation to be inspected bihourly. Standard Sample Size: 5 Pieces Mark Green if no defect found, Mark Red if found 2 defects, Mark Yellow if found 1 defects.																
Date																
I																
II																
III																
IV																
QA auditor																
Line super																

Date																
I																
II																
III																
IV																
QA auditor																
Line super																

Figure 38 (traffic liight report sheet given to each machine and workers)

7.LINE IN PRODUCTION DEPARTMENT

Sewing line is one of assembly lines in manufacturing systems in which a product is assembled progressively in workstations by different workers or machines, each executing a subset of the needed assembly tasks. Usually sewing line planning is based on experts' evaluation of each procedure subjectively, leading to unnecessarily waiting time.

In each line each person or two persons are given an operation to be completed to make the garment. A sheet will be provided with all the process in it and the person in charge of each operation should write down their name every day, it is also to note if a person is not there and other person take over the operation it would be noted for future needs. The report sheet is to find how many defects are found with the person operating and solve the problem with traffic light system

PENTAGON GARMENTS										5.0 SYSTEM REPORT TLS SYSTEM				
STYLE# : 0853			TEAM : (7)		DATE : 21/5/23									
S. No.	Operation Name	Operator Name	SPI	D.C.	1st Round 9.05-11.00	D.C.	2nd Round 11.05-1.00	D.C.	3rd Round 1.35-3.30	D.C.	4th Round 3.35-5.30	G.TTL	Code	DEFECTS Broken Stitch
1	FLY ATTACH	Senthilakumari	12	-	5		5		5		5		B	Down Stitch
2	SIDE DUMMY	Isanaga Lakshmi	12	-	5		5		5		5		C	Open
3	SIDE DUMMY	Eunani	12	-	5		5		5		5		D	Trim Ct
4	BUTTON BUTTI	Maruthi Lakshmi	12	N	5		5		5		5		E	PLEAT
5	FRONT DIL	Maruthi Lakshmi	12	-	5		5		5		5		F	Missing Operation
6	TOP STITCH	Bama Lakshmi	12	-	5		5		5		5		G	Shape Off/Asymmetrical
7	FLY BOX	Prathyasa Lakshmi	12	-	5		5		5		5		H	Hi Low & Up & Down
8	FLY BOX	Bama	12	-	5		5		5		5		I	Middle Out/Center Off
9	TOP BOX	Lina	12	-	5		5		5		5		J	Improper/Insecure Stitch
10	POCKET DIL	Rasika	12	J	5		5		5		5		K	Uneven Width/Stitch
11	POCKET DIL	Kallu	12	-	5		5		5		5		L	Rupper Folding/Visible
12	FOA (Back Rise)	Priya	12	-	5		5		5		5		M	Style/Size Change
13	POCKET ATTACH	Vamali	12	-	5		5		5		5		N	Uncut Thread
14	POCKET ATTACH	Pranav Lakshmi	12	-	5		5		5		5		O	Rae Edge/Piping
15	POCKET ATTACH	Subulakshmi	12	-	5		5		5		5		P	Pattern Tracker/Bartack
16	POCKET TOP STITCH	Raji	12	-	5		5		5		5		Q	Main Label/Tap Lbl Slant
17	POCKET TOP STITCH	Lina	12	-	5		5		5		5		R	Sewing Process Damage
18	POCKET TOP STITCH	Raja	12	-	5		5		5		5		S	Shade Variation
19	SIDE DUMMY (SN)	Rajini	12	-	5		5		5		5		T	Seam Margin Reverse
20	SIDE DUMMY (SN)	Karpagam	12	-	5		5		5		5		U	Spec Off
21	SIDE SEAM OIL	Maruthi	12	-	5		5		5		5		V	HT Label Defect
22	SIDE SEAM OIL	Rasika	12	-	5		5		5		5		W	Skip Stitch
23	SIDE TOP STITCH (DNI)	Subha	12	-	5		5		5		5		X	Loose Stitch/Tight Stitch
24	SIDE TOP STITCH (DNI)	Leelitha	12	-	5		5		5		5		Y	Needle Hole/Needle Mark
25	INSEAM (OIL)	Rasika	12	-	5		5		5		5		Z	Waviness/Puckering /Gathering/Rooping
26	INNER ELASTIC ATTACH (OIL)	Maruthi Lakshmi	12	-	5		5		5		5		AA	Oil Stain
TOTAL DEFECTS UNIT FOUND					9	130	130	130	130	130	130		AB	Handling Stain
LINE QC													AC	Strap Twist
LINE I/C													AD	Incomplete/Damage/Stain
PRO I/C													AE	Molding Defect (Shade/Stain)
QC I/C													AF	Others
FM													AG	Fabric Defects
													AH	Fabric Stains

Figure 39 (in line quality checking report)

Objectives of Line Balancing

- Regular material flow.
- Maximum uses of man power and machine capacity.
- Minimum process time.
- Minimizing slack time.
- Minimizing workstation.
- Maximum output at the desired time.
- Quality maintenance of the garment.
- Reduce production cost.

Importance of Line Balancing

- Line balancing helps to know about new machine required for new style.
- It becomes easier to distribute particular job to each operator.
- It becomes possible to deliver goods at right time at the agreed quality for list cost.
- Good line balancing increases the rate of production.
- Line balancing helps to compare the required machinery with the existing one and compare balance.

- It also helps in the determination of labour requirement.
- Good balancing reduces production time.
- Profit of a factory can be ensured by proper line balancing.
- Proper line balancing ensured optimum production at the agreed quality.
- It reduces faults in the finished product.

8.QUALITY CHECKING



Figure 40 (quality checking of garment)

In this the quality of each garment is done from seam to labels. The size of the garment is checked that is,

- if the label has L on it the length is check for L size.
- Threads are checked, if the garment has any excess thread on stiches.
- Stains are checked for oil or any kind of stains, of there is stain the garments are send for washing.
- The label placement is checked.

The quality control team has 3 baskets for rework, stains and rejection.

Rework:

The reworks are identified if the mistakes can be corrected. That is if the wrong size elastic is attached to the garment the elastic can be removed and the right size elastic can be attached little mistakes can be reworked.

Stains:

Stains that can be removed are kept in this; the stains will be removed by a machine that removes stains it is done manually with the help of the machine. If the hp label is in wrong position is also send for removing of stains

Rejection:

Garments which cannot be reworked are rejected. Which is if there is any hole in the fabric cannot be reworked. The rejected garments are sent for B and C.

B and C are grades that are given to the garment according to their quality.

Grade B is of garments which can be at least altered.

Grade C is garments which are wholly rejected.

The cost of the B and C garments are lower than A grade garments.

THE PROCESS AND REPORT

The checkers are given in the sheet with every possible mistake that can be found and marked.

Each checkers is provided with a bunch of stickers that has their own number. The sticker is sticked to the garment which they have checked.

If the checked piece gets rejected or found any quality damage in the random inspection, it will be easy to track down who have checked the quality of the garment. The checked garments are counted upon the given quantity which will be mentioned in the bundle tag.

The bundle consists of 21 pieces upon the given tag.

The 21 pieces in the bundle should be of same size.

The bundle is put according to the sizes.

If the bundle consists of B and C, it is also noted in the card. And the B and C piece is given separately with the bundle without mixing the pass or a grade garment.

After the bundling is done one person checks the size and quantity in a bundle to verify and is noted down in a note. This is to close the bundle card.

After this the bundle is move to the packing department.

If the bundle does not contain the mentioned quantity in the card a piece or the required amount of garment is placed with the bundle to fulfil the mentioned number of garments in the bundle.

[illegible]

TEAM-1 CARD NO: 69/140			
CUT Bundle Tag			
PO.NO	4523003349	ION	230018
WO NO	230025	Date	15/05/2023
Style	US57-0205-ASSTD-S1.23-ROT.01	Size	Share : B
Color	USP24	Bundle Qty	22
Bundle No	23052000981	Batch No	9001144/08
Lay No	2	End No	2S-170
Start No	2S-149	A :	B :
		C :	Total :

✓ CUT I/C
PROD I/C
PKG I/C
QA I/C
PACK I/C
FH

IRONING

Before packing the garments are treated in a tread sucking machine for removing the excess threads which are cut during sewing and checking process. Then the garment is sent for ironing process, steam iron with vacuum table is used to iron the garments.



Figure 43 (steam iron with vacuum table)



Figure 44 (removing of excess thread by thread sucking machine)

9.PACKING DEPARTMENT

The packing list is one of the most important documents for both apparel merchandising and commercial departments of an apparel manufacturing industry. The packing section is the part finishing section of the readymade apparel industry. Normally, the packing section packs the goods as per ratio or assortment. In the later, the apparel inspector inspects the apparel product according to the apparel packing list.

To prepare final packing lists, the commercial department of the apparel industry has needed the final packing list for forwarding agents and the customs department. From here, they calculate the total shipping volume and weight to confirm the required shipping cargo. As its importance, both apparel merchandiser and commercial personnel should aware of it to reduce cost in shipping.

The packing is done using inner board, clips, Ip card, plastic bags.



Figure 45 (packed garments)

The IP card consist of

- Mail ID
- Size chart
- Style

- Product name
- Brand name
- Care details
- Sticker
 - MRP, QR
 - Content
 - Barcode
 - Size
 - Mfd
 - Net Qty
 - Code
 - Mfd by



Figure 46 (IP card)



Figure 47 (packed garment)

CONCLUSION

The industrial internship to PENTAGON GARMENTS, Tamil nadu, prove to be a fruitful experience. The work experiences I encountered during the internship allowed me to develop my knowledge about garment industry. The overall experience was positive, and everything I learned would be useful in my future career in this field.



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