Faculty of Engineering
Department of Textile Engineering

"Study on Manufacturing Process of Swimwear and Related Test''

Course Title: Project (Thesis)
Course Code: TE-4214

Submitted By

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Supervised By

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This Report Presented in Partial Fulfillment of the Requirements for the Degree
of Bachelor of Science in Textile Engineering.

Advance in Apparel Manufacturing Technology

Letter of Approval

To

The Head

Department of Textile Engineering

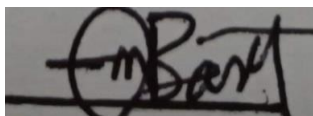102, Sukrabad, Mirpur Road, Dhaka 1207

Subject: Approval of Industrial Attachment Report of B. Sc. In TE Program

Dear Sir,

We are just writing to let you know that this Thesis report in Euphoria Apparels Ltd. has been prepared by the student bearing ID: 161-23-4603 & ID: 163-23-4857 is completed for final judgment. The whole report is prepared based on the proper investigation and information in Euphoria Apparels Ltd . We are directly involved in this thesis report activities.

Therefore it will be appreciated if you kindly accept this Thesis report and consider it for final judgment.

Yours Obediently

…………………………

Engr. Mohammed Abdul Baset

Assistant Professor

Department of Textile Engineering

Daffodil International University

ACKNOWLEDGEMENT

At first we thanks to Almighty Allah who gives us sufficient strength and enough ability to complete our thesis work. With honesty, we would like to thanks our supervisor, Engr. Mohammad Abdul Baset, Assistant Professor, Department of Textile Engineering of Daffodil International University for his guidelines and support to complete this thesis work. Being working with our supervisor, we have not only attained valuable knowledge, but was also inspired by his motivational speech which helped to done our work without any fear. His instructions and way of working was truly tremendous. We absolutely believe that, this work could not be completed if he did not help us continuously. We would like to thanks our course mate in Daffodil International University, who took part in this discuss in the time of completing the course work. Especially we would like to thanks the management of "Euphoria Apparels Ltd." to giving us this opportunity to complete this thesis report successfully and their valuable suggestions, also their momentous contribution to make this thesis report.

Finally, we must acknowledge our parents with due respect for their continuous support, patients and believe on our ability which drives us in the successful completion of this thesis report.
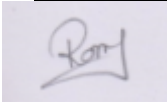
DEDICATION

At first, we want to dedicate this report to Almighty Allah (ALHAMDULILLAH) for giving us the opportunity to prove ourselves. Without help of Allah nothing would be possible. Especially our parents who give us chance to study in Textile Engineering and support us all time in all situations.

DECLARATION

We declare that, this report has been done under the supervision of Mohammad Abdul Baset, Assistant Professor, Department of Textile, Daffodil International University. We also declare that the materials which contained in this thesis report have not been submitted previously for any course of study and thesis report.

Submitted by:

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Faculty of Engineering

Department of Textile Engineering

Approval Sheet

This report entitled "Study on Manufacturing Process of Swimwear" at Daffodil International University, prepared and submitted by Md.Redwanur Rahman Rony ID:161- 23-4603 & Md. Ahsan Habib ID:163-23-4857 in partial fulfillment of the requirement for the degree of BACHELOR OF SCIENCE IN TEXTILE ENGINEERING has been examined and hereby recommended for approval and acceptance.

Muhammad Abdul Baset
Assistant Professor
Department of Textile Engineering

ABSTRACT

This project is „**"Study on Manufacturing Process of Swimwear''** of **"Euphoria Apparels Limited"** Garments (swimwear) manufacturing is totally different from any other garments manufacturing. It's not a regular production method. Each style is a different product that requires a different type of fabric, color, ruffle, rubber tape, thread, etc. Maintain right measurement is one of the most important stages in swimwear manufacturing. In the manufacturing process of swimwear, it required various types of sewing machines and also need to experience sewing operators because of maintain sewing faults and maintain correct measurements. Manufacturing of swimwear SMV is 5.85. Experience sewing operators sewing this swimwear to reduce the production cost. In the fabric inspection we got 08 holes and 05 spots in the fabric. We notice that fabric length is reducing after washing (Before wash length 50 cm and after wash length 33.5). In inspection according to AQL 2.5, know about the how much garments are check for a specific amount of garments (like 315 pieces check for 10001 t0 35000 pieces). The aim of this study is to know briefly about the swimwear manufacturing process, finishing process, packing process.

Table of contents

List of figure

List of Table

List of Chart

Chapter- 01
Introduction

1. Introduction

Thesis report is basically known as a research paper that provides to the reader with adequate information about the specific topic. Thesis is a document which submitted in support of candidature for an academic degree or professional qualification presenting the author's research and findings. Our thesis paper initiated as "Study on Manufacturing Process of Swimwear''. We understood that it is very much important to maintain actual measurement and quality in production of swimwear, that's why we select this type of topic and try to know properly garments (swimwear) production. We working in a garments manufacturing industry named Euphoria Apparels Ltd. which is 100% export and import industry. At first we have to know about manufacturing sequence of swimwear.

1.1. Objective of this report

- To know about the overall swimwear manufacturing process.
- To know about the fabrics used swimwear manufacturing process.
- To know about the accessories used to make swimwear.
- To know about the machines used to make swimwear.
- To know about the cutting techniques.
- To know about the daily report of finishing & packing process.
- To know about the inspection process of finished swimwear.

1.2. Methodology

- Textile industry
- Related book
- Practical information from factory
- Internet

1.3. Limitations

- Time consuming
- Lack of appropriate experience
- Lack of proper guidelines from industry

Chapter- 02
Literature Review

2. Fabric used for swimwear

Fabric is a main component to produce any kind of garments. When you make a swimwear then it's more important to used special characteristics (very soft feel, very good strength, quick drying, and good durability etc.) of fabric.

Swimwear fabric is mean to outspread to set all those frilly curve & to allow for a suitable move and safe swim. In dry and wet condition it's can be able to fold its own shape. For these reasons elastane fibers is used to produce all kinds of swimwear fabrics. Lycra/spandex is the generic name of elastane. Generally this fabric made with 10-20% elastane to 80-90% others fibers.

2.1. Fabric Composition:
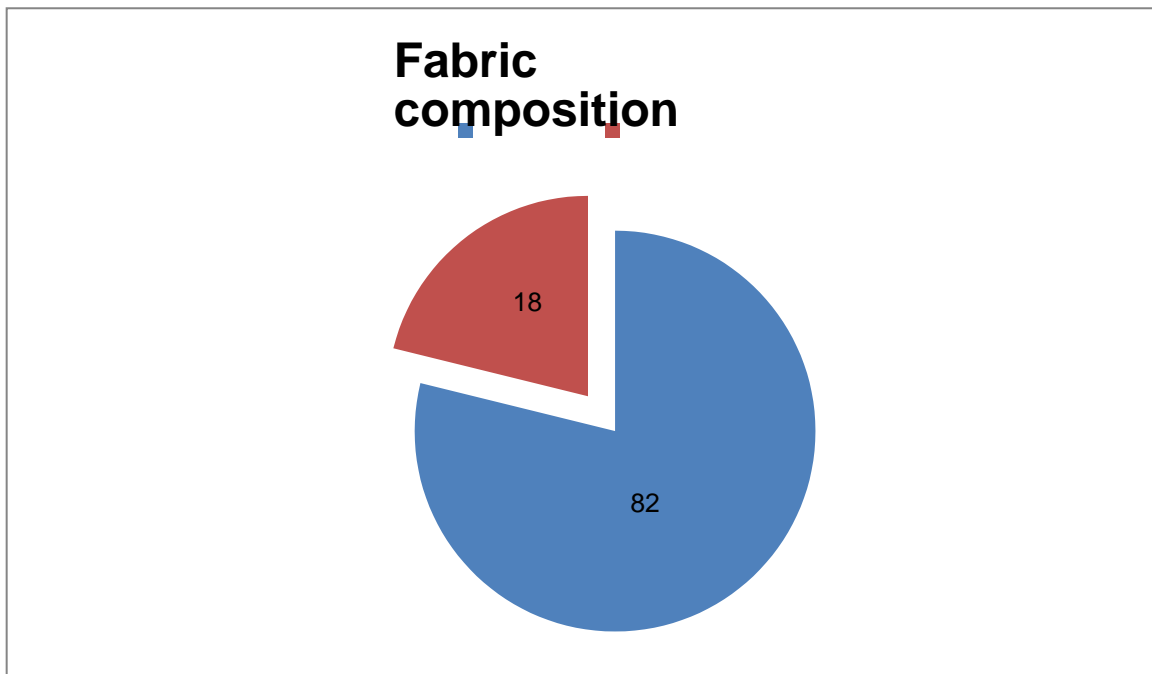
Figure 2.1: Fabric composition

2.2. Types of Fabric for swimwear:
There are mainly two types of fabric
- Nylon Blends
- Polyester Blends

2.3. Characteristics of Nylon Blends Fabrics:

- Very soft feeling
- Very good stretch
- Good durability
- Quick drying property
- Sometimes UV resistance
- Water repellent
- Rare chlorine resistance

2.4. Characteristics of Polyester Blends Fabrics:

- Very soft feeling
- Good durability
- Very good stretch
- UV resistance
- Water repellent
- Chlorine resistance
- Quick drying property

2.5. Accessories used to make swimwear

The components or materials except main fabric, which are used to produce garments are commonly known as accessories.

2.5.1. Used Accessories:
- Sewing Thread
- Rubber Tape
- Mobilon Tape
- Ring
- Slider
- Lining Fabric

- Main Label
- Care Label
- Size Label

2.6. Cutting:

Euphoria Apparels Ltd has separate cutting section which is located in 5th floor in the building. In garments industries, fabric cutting is term as fabric is cut from lay & spreading with accuracy & properly. Firstly fabric is spreading& lying on the spreading table with proper requirements of fabric spreading. Then laying fabric is cut by knife cutter or round cutter machine.

Figure 2.2: Cutting

2.7.   Process of cutting

Fabric receive from store

↓

Fabric Inspection (shade & GSM)

↓

Fabric Inspection (4 point system)

↓

Fabric Relaxation

↓

Receive fabric to cutting table

↓

Fabric spreading (automatic or manually)

↓

Marker collects from CAD

↓

Marker setting

↓

Fabric cutting

↓

Numbering

↓

Bundling

↓

Quality checking

↓

Re-cut

↓

Cutting store

↓

Forward to sewing
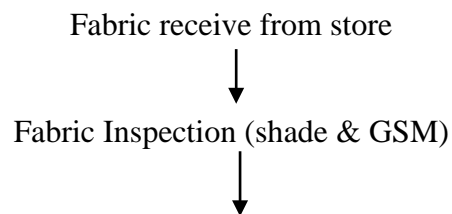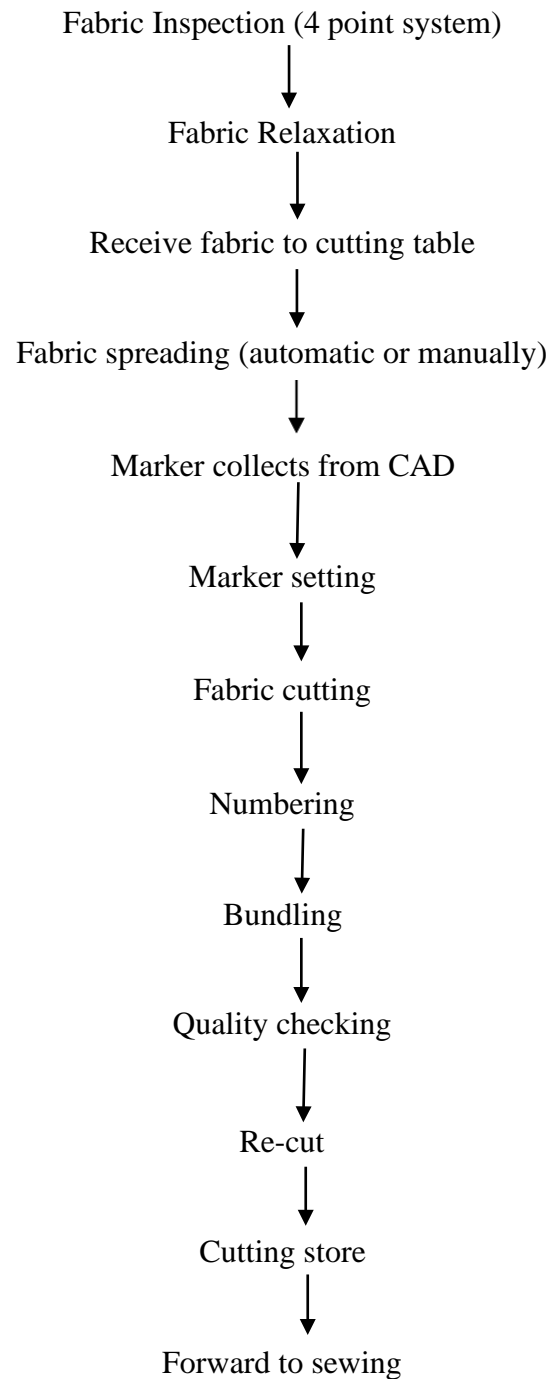
2.8. Cutting defects:

Figure 2.2.1: Cutting defects

2.9. Marker Making& Efficiency:

Marker is a thin paper which contains all the pattern pieces of garments .It is made for the cutting purpose, also maximum utilize of the fabric that means minimize the wastage of fabric. Important term for marker making marker with less than or equal to the fabric width.
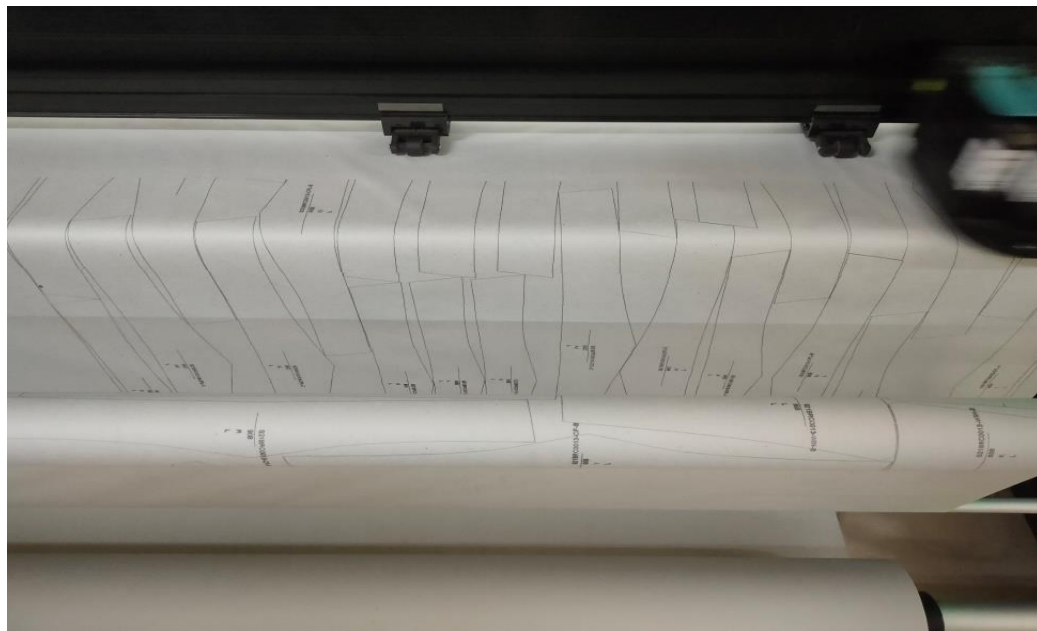
Figure 2.3: Computerized Marker Making

2.9.1. Marker efficiency:

Marker efficiency is the ratio of the all pattern on the marker to total area of the marker & it is expressed as percentage (%) called marker efficiency.

$$\text{Marker efficiency} = \frac{\text{All pattern on the marker}}{\text{Total area of the marker}} \times 100\%$$

If marker efficiency is higher, fabric wastage (%) lower.

If marker efficiency is lower, fabric wastage (%) higher.

2.10.   Sewing process

Machine used in manufacturing of swimwear

- 3 Thread over lock
- Single needle lock stitch machine
- Double needle flat lock machine
- 4 Thread over lock
- Double needle lock stitch machine
- Zigzag machine
- Bar tack machine

2.10.1.   Machine layout

3 Thread over lock ⟶ Single needle lock stitch m/c ⟶ Single needle lock stitch m/c

⟱

Double needle flat lock m/c ⟵ 3 Thread over lock ⟵ Single needle lock stitch m/c

⟱

3 Thread over lock ⟶ Single needle lock stitch m/c ⟶ 4 Thread over lock

⟱

Double needle flat lock m/c ⟵ Single needle lock stitch m/c ⟵ 4 Thread over lock

⟱

3 Thread over lock ⟶ Single needle lock stitch m/c ⟶ Double needle flat lock m/c

⟱

Single needle lock stitch m/c ⟵ Single needle lock stitch m/c ⟵ 4 Thread over lock

⟱

3 Thread over lock ⟶ Double needle flat lock m/c ⟶ Single needle lock stitch m/c

⟱

Single needle Zigzag m/c ⟵ 4 Thread over lock ⟵ 3 Thread over lock

⟱

Bar tack machine ⟶ Bar tack & thread trim

2.11.   Machines used to swimwear manufacturing:

Front gusset joint by the 3 thread over lock machine.

Figure 2.4: Over lock machine

Front gusset basting by single needle plain machine

Figure 2.5: Single needle plain machine

Side seam joint by 4 thread over lock machine.

Figure 2.6: 4 threads over lock machine

Attach elastic at leg, arm hole by 3 threads over lock machine.
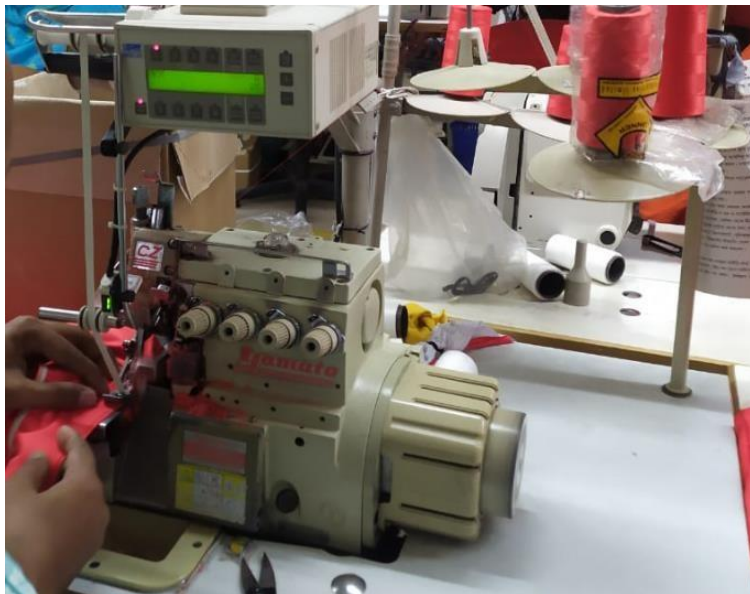
Figure 2.7: 3 threads over lock machine

Make gathering at ruffle, basting ruffle at neck line by single needle plain machine.

Figure 2.8: Single needle plain machine

Attach binding at neckline by flat lock machine.

Figure 2.9: Flat lock machine

Label making and attach main label at center of back part by Single needle plain machine.

Figure 2.10: Single needle plain machine

2.12. Standard Minutes Value (SMV)

		Line: A3			SMV=5.85		
Buyer: KIABI			**Style: BEPIP(X1253)**	**Item: SWIMSUIT**			
Sl. No	Operator name	Operator ID	Operation Details	M/C	SMV	SMV Target	
1			Neatrn front gusset	3 O/L	0.10	600	
2			Join back gusset	4 O/L	0.23	261	
3			Join back gusset	4 O/L	0.23	261	
4			Basting Gusset	1/N	0.26	231	
5			Basting Gusset	1/N	0.26	231	
6			Basting Gusset	1/N	0.26	231	
7			Join side seam(L+R)	4 O/L	0.40	150	
8			Join side seam (L+R)	4 O/L	0.40	150	
9			Attach elastic at legs(L+R) side	3 O/ L	0.32	188	
10			Attach elastic at legs(L+R) side	3 O/L	0.32	188	
11			T/S elastic at legs(L+R) side	1/JJ	0.34	176	
12			T/S elastic at legs(L+R) side	1/JJ	0.34	176	
13			Attach elastic at armhole	3 O/L	0.17	353	
14			T/S Elastic at armhole	F/L	0.18	333	

15			Make gathering at ruffle	F/L	0.24	250
16			Basting ruffle at neck line	1/N	0.32	188
17			Basting ruffle at neck line	1/N	0.32	188
18			Attach binding at neck line	1/N	0.31	194
19			Label make and main label at the centre back.	1/N	0.33	182
20			Mark and tack strap and loop	1/N	0.24	250
21			Join at neck binding and tack end of ruffle join	1/N	0.24	250
22			Bartack	B/T	0.33	182
23			Label make and main label at the centre back.	1/N	0.33	182
			Trim threads		0.7	86
			Trim threads		0.7	86
			Trim threads		0.7	86
Target				1000		
QC Received				850		
QC Pass				837		

2.13. Sewing faults:

- Uncut Thread
- Oil Spot
- Fabric Hole
- Broken Stitch
- Skip Stitch
- Raw edge
- Fabric fault
- Satin
- Crease mark

2.14. Quality control

Quality is an important issue for any kind of business. It is mandatory to maintain quality level to satisfy customer demand and obtain desire products.

Quality control is a process by which a company makes sure create quality products.

2.14.1. Objectives of Quality control:

- Maintain the quality label.
- Reduce the rework.
- Proper use of man & machines.
- Proper utilize of materials.
- Reduce complain from customers.
- Reduce inspection cost.
- Reduce the manufacturing cost.
- Identify various types of defects.

2.14.2. Types of quality control

Quality control is two types, which given in below:

- Process control
- Product control.

2.15.   Inspection System

There are many types of fabric inspection systems which given in below. In here, we will discuss about only 4point system because of 4point system most commonly used in factories.

- 4- Point system
- 10- Point system
- Graniteville 78system
- Dallas system
- 4- Point system-Revised.

2.15.1.   4 Point System

It also known as the American Apparel Manufacturers Association (AAMA). In this method, defected points are checked out in 100 square yds of fabric. If the defected points are greater than 40 then fabric must be rejected.

Defects	Points
Up to 3"	1
3 – 6"	2
6 – 9"	3
Above 9"	4

Hole	Points
1 or less than 1"	2
Above 1"	4

Example: Inspection for 100 square Yds.

Defect Length	No of faults	No of points
Up to 3"	7	7 X 1=7
3 – 6"	4	4 X 2=8
6 – 9"	2	2 X 3=6
Above 9"	1	1 X 4=4
Total		25

2.15.2.   AQL (Acceptable Quality Level)

Lot or Batch size	Sample size Code Letter	Sample Size (Level-I)	Acceptable Quality level (AQL)					
			2.5		4		6.5	
			Ac	Re	Ac	Re	Ac	Re
2 – 8	A	2	0	1	0	1	0	1
9 – 15	B	3	0	1	0	1	0	1
15 – 25	C	5	0	1	0	1	0	1
26 – 50	D	8	0	1	1	2	1	2
51-90	E	13	1	2	1	2	2	3
91-150	F	20	1	2	2	3	3	4
151-280	G	32	2	3	3	4	5	6
251-500	H	50	3	4	5	6	7	8
501-1200	J	80	5	6	7	8	10	11
1201-3200	K	125	7	8	10	11	14	15
3201-10000	L	200	10	11	14	15	21	22
10001-35000	M	315	14	15	21	22	21	22

Figure 2.11: AQL Chart

Chapter-03
Experimental Details

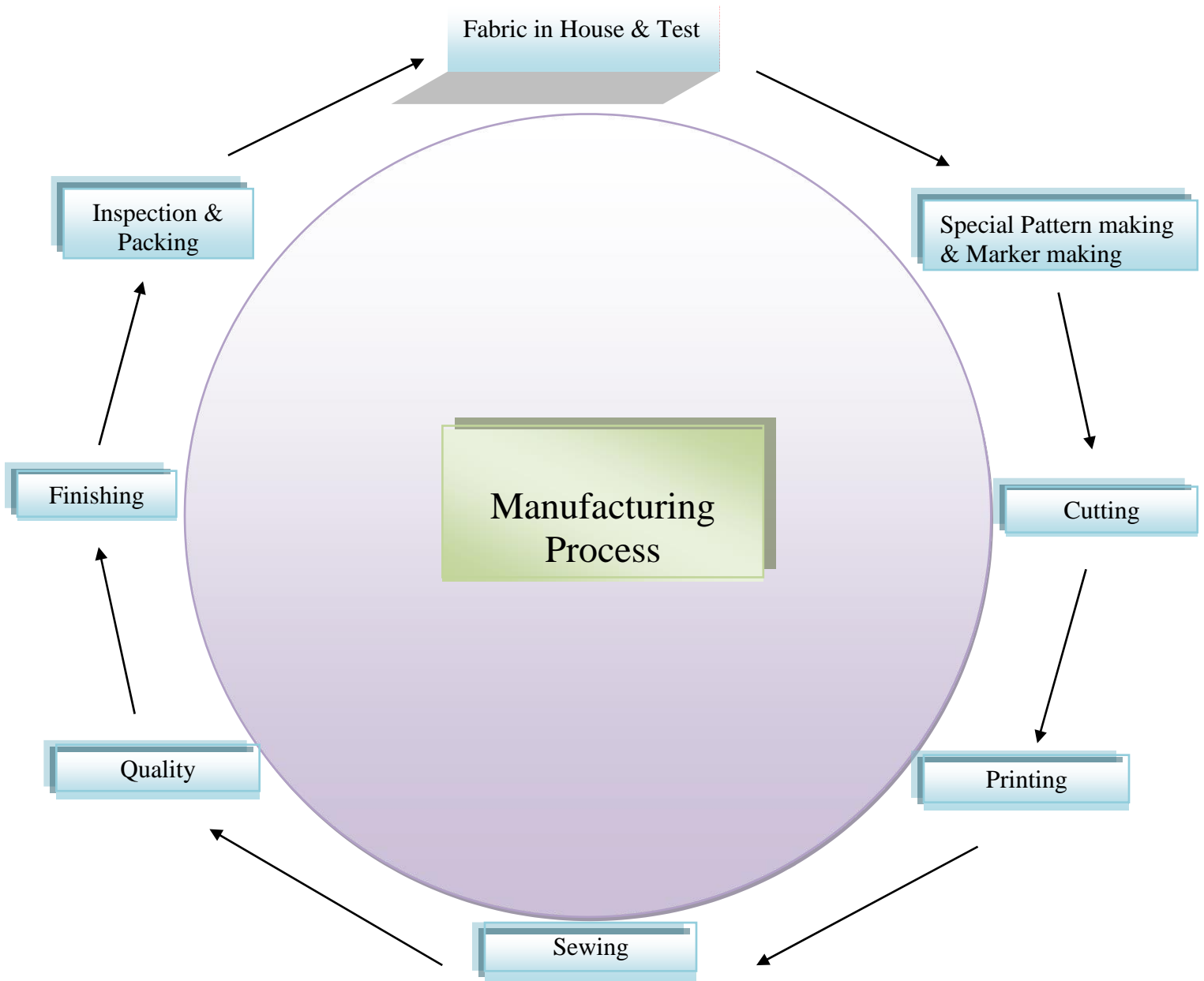# 3. Experimental Details

3.1. Experimental Data: 01

Fabric in House & Test

Special Pattern making & Marker making

Inspection & Packing

Manufacturing Process

Cutting

Finishing

Printing

Quality

Sewing

Figure 3.1: Manufacturing process

3.2. Experimental Data: 02

Buyer :	KIABI
Mo :	
Style :	NSUS21BPANT(XX805)
Color :	POPPY RED
Article :	82% POLY 18% ELA
Date :	18-11-2020

euphoria apparels limited
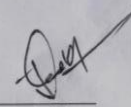
Srinkage Test Report
Quality Control Department

VERSION - 01

BG No. :	BGY-20028
Rcvd. Roll :	02 Roll
Rcvd. Qty :	190MTR

Sl No	Roll No.	Batch No.	Before Wash		After Wash		Length (-/+)	Width (-/+)	Length %	Width %	Roll Qty.	Act Qty.	Short Qty.	Short %	Remarks
			Length	Width	Length	Width									
01	CJ1000	BGY-20028	50 Cm	50 Cm	33.5	33.2	-1.5	-1.8	-4.28%	-5.14%					
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											

Remarks: SHRINKAGE TEST OY STEAM Iron.

_____
Inspected By

_____
Supervisor (QC)

_____
Officer/Manager (QC)

Fabric Inspection Report (4Point System)
Quality Control Department

Version - 01

Buyer: KIABI

MO/PO: NSU321 BFANT (XX305)

Style:

Lot No: B6Y-26028

Fabric Type: 82% poly 18% Ela

Color: AOP ON SNOW white

Total Roll: 02-Roll-169 MTR

Inspection Roll: 01-Roll-89 MTR

Accepted Roll: 01-Roll-89 MTR

Rejected Roll:

Req. GSM: 150

Req. Width: 152 cm

Dated: 15-11-20

Spirlity:

Shrinkage L = , W =

Roll No.	Declar Length MTR	Actual Length MTR	Declar Width	Actual Width	Declar GSM	Actual GSM	Slub	Weight of Roll	Yarn Contaminatio	Patta	Others	Any Hole / Set Up	Sinker Mark	Needle Mark	Knot	Others	Crease Mark	Running Shade	Side to Side Shade	Uneven Dyeing	Others	Spot	Compection Mark	Blass & Bow	Side / Middle Loose	Others	Print Over Loading	Miss Print	Print Shade	Others	Total Point	Points Per 100 Sq/Yds.
398	89	79	60					26.1				08										05										139.87

Sub Total Points: 39 79 60 26.1 08 05 139.

Ans: Pts/ 100 Sq.Yds.:

4 Point System:
- Up to 3" = 1 Point
- Abobe 3" to 6" = 2 Point
- Abobe 6" to 9" = 3 Point
- Abobe 9" = 4 Point
- Hole = 4 Point

Maxim of penalty points percentage
(Total defects x 36 x 100) / (Length of yards x Actual fabric widht (inch)

Acceptable Points Per 100 Sq. Yds.
- * Individual Roll..........30 Points
- * Lot Avarage ....30 Points

Inspector:

Supervisor (QC)

Officer (QC)

Manager (QC

Defect Swatch Report
Quality Control Department

VERSION - 01

DATED :	15 - 11 - 2020		
BUYER :	KIABI	USE PART :	
STYLE :	N34521 BFSNT (XX305)	G-ITEM :	
MO :		BG-NO. :	BGY-20028
ARTICLE :	82% poly 18% ELA	COLOR :	POPPY Red

Defective Item / Parts

(1st Problem %) :-	① Missing - 08 = 5.16%
(2nd Problem %) :-	② Hole - 16 = 10.32%
(3rd Problem %) :-	
(4th Problem %) :-	

IQC Officer Comment :	Quality Manager Comment:	Merchandiser Comment:

Factory name: Euphoria Apparels Limited

Buyer:	KIABI
Style:	NSUS21BFANT(XX305)
Color:	POPPY RED
Article:	82%Polyester 18%elastane
Date:	15-21-2020
Rcvd. Roll:	02 Roll
Rcvd. Qty:	190 MTR

Shrinkage Test Report

Sl No	Roll No	Batch No	Before Wash		After Wash		Length (+/-)	Width (+/-)	Length %	Width %
			Length	Width	Length	Width				
01	CJ 1000	BGY 20028	35Cm	35Cm	33.5	33.2	-1.8	-1.8	-4.28%	-5.14%

Table 3.1: Shrinkage Test Report

Inspection Report

Roll No	Declare Length	Actual Length	Actual Width	Wt. of Roll	Hole	Spot	Total Point	Point/100 Sq.yd
CJ 1000	89	79	60	26.1	08	05	13	9.87%

Table 3.1.1: Inspection Report

3.3. Experimental Data: 03

Buyer :	KIABI
Mo :	
Style :	NBUS2IGFANT(XX305)
Color :	AOP ON SNOW WHITE
Article :	82% POLY 18% ELD
Date :	15-11-2020

Euphoria apparels limited

Srinkage Test Report
Quality Control Department

VERSION - 01

BG No.	Y-20028
Rcvd. Roll :	02 Roll
Rcvd. Qty :	169 MTK

Sl No	Roll No.	Batch No.	Before Wash		After Wash		Length (-/+)	Width (-/+)	Length %	Width %	Roll Qty.	Act Qty.	Short Qty.	Short %	Remarks
			Length	Width	Length	Width									
01	098	BGY-20028	350 Cm	350 Cm	34.5	34.7	-0.5	-0.3	1.4%	0.85%					
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											
			50 Cm	50 Cm											

Inspected By

Supervisor (QC)
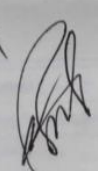
Officer/Manager (QC)

euphoria apparels limited

Defect Swatch Report
Quality Control Department

DATED :	15-11-2020			
BUYER :	KIABI	USE PART :		
STYLE :	NS4521 BFDNT (XX305)	G-ITEM :		
MO :		BG-NO. :	BGY-20028	
ARTICLE :	82% poly 18% EltA	COLOR :	AOP ON SNOW white	

Defective Item / Parts

(1st Problem %) :-	① Spot - 05 = 3.79 %
(2nd Problem %) :-	② Hole - 08 = 6.07 %
(3rd Problem %) :-	
(4th Problem %) :-	

IQC Officer Comment :	Quality Manager Comment:	Merchandiser Comment:
NEED TO 100%. co-prd		

euphoria apparels limited

Fabric Inspection Report (4Point System)
Quality Control Department

Buyer : KIDBI
MO/PO :
Style : NSUS2l BFANT (kk3o5)
Lot No : BGY-20028
Fabric Type: 82% poly 18% EV

Color : AOP ON SNOW white
Total Roll : 02-Roll-169 MTR.
Inspection Roll : 01-Roll-89 MTR.
Accepted Roll : 01-Roll-89 MTR.
Rejected Roll :

Req. GSM : 190
Req. Width : 152 cm
Dated : 15-11-20

Spirlity | Shrinkage
L =
W =

Roll No.	Declar Length MTR	Actual Length MTR	Declar Width	Actual Width	Declar GSM	Actual GSM	Slub	Weight of Roll	Yarn Contaminatio	Patta	Others	Any Hole / Set Up	Sinker Mark	Needle Mark	Knot	Others	Crease Mark	Running Shade	Side to Side Shade	Uneven Dyeing	Others	Spot	Compection Mark	Blass & Bow	Side / Middle Loose	Others	Print Over Loading	Miss Print	Print Shade	Others	Total Point	Points Per 100 Sq/ Yds.
CJ328	89	79	60					26.1				08										05										139.8

Sub Total Points : | 89 | 79 | 60 | | | | | 26.1 | | | | 08 | | | | | | | | | | 05 | | | | | | | | | | 139.

Ans: Pts/ 100 Sq.Yds.:

4 Point System:
Up to 3" = 1 Point
Abobe 3" to 6" = 2 Point
Abobe 6" to 9" = 3 Point
Abobe 9" = 4 Point
Hole = 4 Point

Maxim of penalty points percentage
(Total defects x 36 x 100) / (Length of yards x Actual fabric widht (inch)

Acceptable Points Per 100 Sq. Yds.
* Individual Roll..........30 Points
* Lot Avarage ....30 Points

Inspector:

Supervisor (QC)

Officer (QC)

Manager (QC)

Factory name: Euphoria Apparels Limited

Buyer:	KIABI
Style:	NSUS21BFANT(XX305)
Color:	AOP ON SNOW WHITE
Article:	82%Polyest er 18%elastan e
Date:	15-21-2020
Rcvd. Roll:	02 Roll
Rcvd. Qty:	190 MTR

Shrinkage Test Report

Sl N o	Roll No	Batch No	Before Wash		After Wash		Length (+/-)	Width (+/-)	Length %	Width %
			Length	Width	Length	Width				
01	8998	BGY 20028	35Cm	35Cm	34.5	34.7	-0.5	-0.3	-1.42%	0.85%

Table 1.2: Shrinkage Test Report

Inspection Report

Roll No	Declare Length	Actual Length	Actual Width	Wt. of Roll	Hole	Spot	Total Point	Point/100 Sq.yd
8998	89	79	60	26.1	08	05	13	9.87%

Table 3.2.1: Inspection Report

3.4. Experimental Data: 04

OPERATION CHART

CUSTOMER : KIABI
STYLE NO : FDUS20BFP1P (XI253)
SIZE RANGE : M
SAMPLE : SWIMSUIT

NO	Operation	Machine name	Presser foot code /photo for special style	Folder type/photo for special style	Tape Width	Needle type	Needle gauge	Thread type	SPI	Throw width	seam allowance	smv	Remark
1	Neatrn fnt gusset	3tho/l	j131842			DCX1/9	3mm	c/n/n	16	3mm	3mm	0.10	
2	Join back gusset	4tho/l	j131842			DCX1/9	6mm	c/c/n/n	16	6mm	6mm	0.23	
3	Basting gusset	1nd	Regular foot			DBX1/10	3mm	c/c	12	3mm	3mm	0.26	
4	Join side seam(L+R)	4tho/l	j131842			DCX1/9	6mm	c/c/n/n	16	6mm	6mm	0.40	
5	Att elastic at armhole	3tho/l	j131842		See the mo sheet	DCX1/9	4mm	c/n/n	16	4mm	4mm	0.19	
6	T/S elastic at armhole	1zz	225-48671			DPX5/10	3.2mm	c/n	14	3.2mm	3.2mm	0.17	
7	Make gatharing at ruffle	1zz	Gatharing foot			DPX5/10	3.2mm	c/n	14	3.2mm	3.2mm	0.24	
8	Join ruffle	4tho/l	j131842			DCX1/9	6mm	c/c/n/n	16	6mm	6mm	0.14	
9	Basting ruffle at neckline	1nd	Regular foot			DBX1/10		c/c	12			0.32	
10	Label make & att care label at the center back	1nd	Regular foot		See the mo sheet	DBX1/10		c/c	12			0.33	
11	Att binding at neckline	1zz	225-48671		See the mo sheet	DPX5/10	3.2mm	c/n	14	3.2mm	3.2mm	0.31	
12	Join at neck binding & tack end of ruffle join	1nd	Regular foot			DBX1/10		c/c	12			0.24	
13	Label make & att main label at the center back	1nd	Regular foot		See the mo sheet	DBX1/10		c/c	12			0.25	
14	Make shoulder strap & loop	1zz	225-48671		See the mo sheet	DPX5/10	3.2mm	c/n	14	3.2mm	3.2mm	0.13	
15	Measure & cut shoulder strap & loop	mnl	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		0.24	
16	Insert ring & slider	mnl			See the mo sheet							0.19	
17	Make shoulder strap	b/t				DPX5/10		c/c	42			0.23	
18	Insert male clasp & drowing	mnl										0.33	
19	Mark & tack strap & loop	1ndl	Regular foot		See the mo sheet	DBx1/10		c/c	12			0.24	
20	Att elastic at legs (L+R) side	3tho/l	j131842		See the mo sheet	DCX1/9	4mm	c/n/n	16	4mm	4mm	0.32	
21	T/S elastic at legs (L+R) side	1zz	225-48671		See the mo sheet	DPX5/10	3.2mm	c/n	14	3.2mm	3.2mm	0.34	
22	Bartack & thread trim	b/t				DPX5/10		c/c	42			0.60	

Prepared by _____

5.80

Buyer: KIABI			Style: BEPIP(X1253)		Item: SWIMSUIT		
Sl. No	Operator name	Operator ID	Operation Details	M/C	SMV	SMV Target	
1			Neatrn front gusset	3 O/L	0.10	600	
2			Join back gusset	4 O/L	0.23	261	
3			Join back gusset	4 O/L	0.23	261	
4			Basting Gusset	1/N	0.26	231	
5			Basting Gusset	1/N	0.26	231	
6			Basting Gusset	1/N	0.26	231	
7			Join side seam(L+R)	4 O/L	0.40	150	
8			Join side seam (L+R)	4 O/L	0.40	150	
9			Attach elastic at legs(L+R) side	3 O/ L	0.32	188	
10			Attach elastic at legs(L+R) side	3 O/L	0.32	188	
11			T/S elastic at legs(L+R) side	1/JJ	0.34	176	
12			T/S elastic at legs(L+R) side	1/JJ	0.34	176	
13			Attach elastic at armhole	3 O/L	0.17	353	
14			T/S Elastic at armhole	F/L	0.18	333	
15			Make gathering at ruffle	F/L	0.24	250	
16			Basting ruffle at neck line	1/N	0.32	188	
17			Basting ruffle at neck line	1/N	0.32	188	
18			Attach binding at neck line	1/N	0.31	194	
19			Label make and main label at the centre back.	1/N	0.33	182	
20			Mark and tack strap and loop	1/N	0.24	250	
21			Join at neck binding and tack end of ruffle join	1/N	0.24	250	
22			Bartack	B/T	0.33	182	
23			Label make and main label at the centre back.	1/N	0.33	182	
			Total SMV			5.85	

Table 3.3: SMV

3.5. Experimental data: 05

la mode à petits prix KIABI

Last updated on: 08-Sep-20

Applicant (submitter):	Euphoria Apparels Ltd			Contact Person:	Asaduzzaman Asad / Shimul
Address :	Shimultola,Jamgora,Ashulia ,Dhaka				
Phone No.:	+8801844159058	Fax No.:		Email address:	mer5@euphoriaapparels.com mer16@euphoriaapparels.com mer21@euphoriaapparels.com
Kiabi Contact Name (to send a copy of the report):				Group (Age range):	3A - 12A
Payer (Company Name):	Euphoria Apparels Ltd			Contact Person:	Asaduzzaman Asad / Shimul
Address:	Shimultola,Jamgora,Ashulia ,Dhaka				
Phone No.:	+8801844159058	Fax No.:		Email address:	mer5@euphoriaapparels.com mer16@euphoriaapparels.com mer21@euphoriaapparels.com

Sample Description:	Fabric & garments	Colors (mention below):
Tick Mark here if fabric is peach finished:	☑ Peach Finished	
End Use (End Product):	**Swimwear**	1 . GREE -SNOW WHITE(11-0602 TCX)
Sample/Style reference:	**NSUS21BFANT / XX305**	2 . ROUGE POP -POPPY RED(17-1664 TCX)
Submitter referece:	**EA1510**	

Order Number:	36114200 , 36114300	Season	ETE 21
Manufacturer/Factory Name:	Euphoria Apparels Ltd	QC pick Option(Buyer QC/ SD QC)	FOURNEAU
Supplier Name:	Euphoria Apparels Ltd	PMA/BASICS/Rolling (Yes/No)	
Buyer Name:	KIABI	Department:	GRUNDERW - KIDSUW
Dye type:		Country of Origin:	BANGLADESH
First Shipment Delivery Date	23-Nov-20	Country of Destination:	

Fabric Content announced (mention below):	Care Label advocated (fill in below) :
82% Polyester , 18% Elastane	⊞30 ⊠ ⊠ ⊠ ⊠

Product Category :	☑	Standard	☐	Essential

Test Required:	☑	KIABI mandatory tests (as per Kiabi Manaul) Physical test.
(See options at right side)	☐	Other tests (mention below)

Tests	Methods	Results
☑ Fabric Composition Test		M
☑ Pilling Test		M
☑ Color fastness Test		M
☑ GSM Test		M
☐ Oeko-Tex Certificate (Yes / No) :		

Factory Name: Euphoria Apparels Limited
Address: Shimultola,Jamgora,Ashulia,Dhaka.
Sample Description: Fabric & Garments
Buyer: KIABI
Season: ETE 21
Submitter Reference: EA1510

Style	Color	Fabric Composition	TEST	RESULT
NSUS21BFANT (XX305)	1. POPPY RED 2. AOP ON SNOW WHITE	82% Polyester 18% Elastane	Fabric Composition Test	M
			Pilling Test	M
			Color Fastness Test	M
			GSM Test	M
M= Meet Kiabi's Requirement #= No Specified Requirement F= Below Kiabi's Requirement			N/A= Not Applicable * = No Submitted Information Pending = Need Kiabi Agreement	

Table 3.4: Test Report

3.6. Experimental data: 06

Test Request Form (TRF)					
					Last updated on: 14-Sep-20
Applicant (submitter):	**Euphoria Apparels Ltd**			Contact Person:	Asaduzzaman Asad / Shimul
Address :	Shimultola,Jamgora,Ashulia ,Dhaka				
Phone No.:	+8801844159058	Fax No.:		Email address:	mer5@euphoriaapparels.com mer16@euphoriaapparels.com mer21@euphoriaapparels.com
Kiabi Contact Name (to send a copy of the report):				**Group** (Age range):	3A - 12A
Payer (Company Name):	**Euphoria Apparels Ltd**			Contact Person:	Asaduzzaman Asad / Shimul
Address:	Shimultola,Jamgora,Ashulia ,Dhaka				
Phone No.:	+8801844159058	Fax No.:		Email address:	mer5@euphoriaapparels.com mer16@euphoriaapparels.com mer21@euphoriaapparels.com
Sample Description:	Fabric & garments			**Colors (mention below):**	
Tick Mark here if fabric is peach finished:		☑ Peach Finished		1 . GREE -SNOW WHITE(11-0602 TCX) 2 . ROUGE POP -POPPY RED(17-1664 TCX)	
End Use (End Product):	**Swimwear**				
Sample/Style reference:	**NSUS21BFANT / XX305**				
Submitter referece:	**EA1510**				
Order Number:	**36114400 , 36114500**		Season		**ETE 21**
Manufacturer/Factory Name:	**Euphoria Apparels Ltd**		QC pick Option(Buyer QC/ SD QC)		**FOURNEAU**
Supplier Name:	**Euphoria Apparels Ltd**		PMA/BASICS/Rolling (Yes/No)		
Buyer Name:	**KIABI**		Department:		**GRUNDERW - KIDSUW**
Dye type:			Country of Origin:		**BANGLADESH**
First Shipment Delivery Date	**29-Nov-20**		Country of Destination:		
Fabric Content announced (mention below**):**			**Care Label advocated** (fill in below) :		
82% Polyester , 18% Elastane					
Product Category :	☑ **Standard**	☐ **Essential**			
Test Required:	☑ **KIABI mandatory tests (as per Kiabi Manaul) Physical test.**				
(See options at right side)	☑ **Other tests** (mention below)				

Tests	Methods	Results
☑ Fabric Composition Test		F
☑ Color fastness Test		M
☑ GSM Test		F
☐ Oeko-Tex Certificate (Yes / No) :		

Factory Name: Euphoria Apparels Limited

Address: Shimultola,Jamgora,Ashulia,Dhaka.

Sample Description: Fabric & Garments

Buyer: KIABI

Season: ETE 21

Submitter Reference: EA1510

Style	Color	Fabric Composition	TEST	RESULT
NSUS21BFANT (XX305)	1. POPPY RED 2. AOP ON SNOW WHITE	82% Polyester 18% Elastane	Fabric Composition Test	F
			Pilling Test	x
			Color Fastness Test	M
			GSM Test	F
M= Meet Kiabi's Requirement			N/A= Not Applicable	
#= No Specified Requirement			* = No Submitted Information	
F= Below Kiabi's Requirement			Pending = Need Kiabi Agreement	

Table 3.5: Test Report

3.7. Experimental Data: 07

KIABI
la mode à petits prix

INSPECTION REPORT

Identification	Date	Service provider
DQUA_061	2017 Jul 06	*RISING(ACTIVE)*

Final ☐
In Line
Cutting done ☐
Stitching done ☐
In Finishing ☐

		ORDER N°						Solid	Assort		PO Quantity							TTL. Cartoon			
DATE	17/12/2020	**1**	9	5	5	1	1	0	☒	☐	0	1	0	2	3	6	0	1	7	3
STYLE REF	FDUS20G3BFA	**2**	9	5	5	1	1	1	☒	☐	0	0	0	5	9	6	0	0	1	7
Q.C	HABIB / EMON	**3**	9	5	5	1	1	2	☒	☐	0	0	4	6	6	6	0	0	8	2
SUPPLIER	EUPHORIA APPARELS LTD.	**4**							☐	☐										

SAMPLING =
√Total carton quantity

Total Quantity: 0 0 2 7 2   Sample Quantity: 0 0 4 2

PIECES Total Quantity: 0 1 5 4 9 8   Sample Qty: 0 3 1 **5**

PICKING LIST: Carton Number

1	1	23	35	41	48	54	59	60	81	105
	122	142	158	173						
2	1	2	3	4	5	6	7	8	9	11
	13	15	16	17						
3	1	7	15	18	20	24	26	30	41	46
	58	66	77	82						
4										

Lot or Batch Size / Quantity			Sample Size Quantity	AQL 2.5	
				Ac	Re
3	To	25	**5**	0	1
26	To	50	**8**	0	1
51	To	90	**13**	1	2
91	To	150	**20**	1	2
151	To	280	**32**	2	3
281	To	500	**50**	3	4
501	To	1200	**80**	5	6
1201	To	3200	**125**	7	8
3201	To	10 000	**200**	10	11
10001	To	35 000	**315**	14	15
35001	To	150 000	**500**	21	22

INSPECTION COMPONENTS

PRODUCT FILE	
Order sheets	☒
Description sheets	☒
Measurements chart	☒
Fabric swatch approved	☐
Sealed sample	☒
PRE-FINAL INSPECTION	☒

TOOLS	
Head way calibre	☐

TESTS	
Laboratory n° (6820)343-0204	Date: Dec, 09, 2020
Home test report- n/a	Date:
Fabric Moisture Reading	ok
Carton Moisture Reading	ok

PREVIOUS INSPECTION REPORTS	1	2	3	4
In line	☐	☐	☐	☐
Final	☒	☐	☐	☐
Needle Detection (AQL QTY.)	Yes ☒ No ☐ Reason:			

INSPECTION COMPONENTS

FINAL DECISION AQL 2.5

Workmanship

Accept ☐   Reject ☒

Measurements

Accept ☒   Reject ☐

Import Buying Conditions (IBC)

Instead Of two combo One Combo (Blue Tiger) Lab test report not yet received.

Accept ☒   Reject ☐

RESULT   **ACCEPT :** [ ]   **REJECT :** √

KIABI
la mode à petits prix

INSPECTION REPORT

Identification	Date	Service provider
DQUA_061	2017 Jul 06	*RISING(ACTIVE)*

WORKMANSHIP INSPECTION

ORDER N° | 3 | 5 | 5 | 0 | 0 | 9 | / | 3 | 6 | 0 | 6 | 1 | 7 | / | 9 | 8 | 4 | 4 | 8 | 7 | / | 3 | 6 | 0 | 6 | 1 | 5

DEFECTS	Quantity of defects	
Piece not conform		
- Accessories not conform or missing	**Asymmetry at side Seam/ Hiking**	10
- Piece different with collection sample		
Workmanship defect		
- Garment is unbalanced	**Fabric Damage/ Fault**	02
- Pockets (unbalanced / symmetry / resistance)		
- Weak seams	**Elastic Damage**	4
- Puckering	**Broken skip**	5
- Overlock quality / seams quality	**Poor Trimming / Uncut threat**	5
- Holes on seams or open seams		
Colour shading		
- On same piece		
- On coordinated pieces (sets...)		
- Between pieces		
Finishing and general look		
- Defect ironing		
- Uncut threads		
- Embroideries – Prints (position, colour, size)		
- Holes		
- Stains		
- Fabric Defect hand feel, weave defects		

Accessories defects

-	Buttons – buttonholes alignment strength	
-	Snaps, loose, not resistant	
-	Zippers	

Care label

-	Composition / care label missing	
-	Composition / care label wrong	

Advertising

-	Advertising hang tag missing	
-	Brand label missing	
-	Size label missing	

Others

-		
-		

Accept

Sample quantity : | 3 | 1 | 5 | AQL 2.5 : | 14 | Total of defects : | 0 | 2 | 6 |

KIABI la mode à petits prix

INSPECTION REPORT Identification DQUA_061 Date 2017 Jul 06

Service provider *RISING(ACTIVE)*

ORDER N°	9	5	5	1	1	0	Assort	Solid	CA	CC	CI	PC
	9	5	5	1	1	2	☐	☒	☒	☐	☐	☐
	9	5	5	1	1	1	☐	☒	☒	☐	☐	☐
							☐	☒	☒	☐	☐	☐
							☐	☐	☐	☐	☐	☐

If one « Reject » is found, inspection is failed

To check on the Dispatch advice (draft)*

	Ac	Re
Dispatch advice printed from EPL application	☒	☐
Should be written on the printed packing list :		
Barcode correctly printed	☒	☐
Sender, consignee, buying group, item reference, order number	☒	☐
Cartons dimensions	☒	☐
Total volume	☒	☐
Gross and net weight	☒	☐
Total quantity of cartons	☒	☐
Total quantity of items	☒	☐
Total quantity of over packing cartons (when required)	☒	☐
Subtotal per line, pieces and cartons grand total	☒	☐

*the valid packing list will be edited when inspection has been accepted.
- 1 packing list will be placed inside the carton n°1 (except if garments on hanger),
- 1 packing list will be placed in the envelope stuck outside of the carton n°1

Visual inspection on 100% of the cartons

	Ac	Re
Correctly filled in (no empty space, no bulky) The last carton if no fill, is on top with an orange round sticker	☒	☐
Sealing correctly with personalized tape (60 mm width)	☒	☐
Closed with no staples, no straps	☒	☐
Condition (no crushed, no wet)	☒	☐
Shipping marks sticker present and well positioned	☒	☐
The carton n°1 is white or with a white round sticker	☒	☐

To check on all the cartons from the sampling list

Weight

		Ac	Re
Solid orders	Carton : conform to the shipping mark	☒	☐
Assorted orders	Assortment : conform to the shipping mark	☒	☐
	Over packing carton : conform to the shipping mark	☒	☐

Shipping marks

	Ac	Re
Is an original (no photocopy) and printed from EPL application	☒	☐
Barcode correctly printed	☒	☐
Order number same as dispatch advice	☒	☐
Carton number same as dispatch advice	☒	☐

Cartons content

		Ac	Re
Solid orders	Quantity of pieces per size and per colour is same as shipping mark	☒	☐
If PCB (solid PO)	Articles are in a transparent polybag which is closed safely	☐	☐
	There is a sticker with : « PCB = X articles »	☐	☐
	Quantity of articles in the polybag is the quantity requested	☐	☐
	Price tag visible and readable	☐	☐
Assorted orders**	Assortment, quantity of pieces per size and per colour is same as shipping mark	☐	☐
	Each assortment is in a global polybag strong and closed safely	☐	☐
	For over packing carton, Quantity of assortments is same as shipping mark	☐	☐
	For over packing carton, the assortments type are same as shipping mark	☐	☐

**Each assortment type is identified by a code in the bottom right of the shipping mark.
Detail of the content of each assortment type on the Dispatch advice.

To check on the products

		Ac	Re
Price hangtag	in correct position, visible and accessible	☒	☐
	Size conform to the product	☒	☐
	Color conform to the product	☒	☐
	Reference conform to the product		
	PO number conform to the product	☒	☐

Factory Name: Euphoria Apparels Limited
Date   :   17.12.2020

Style	PO No	PO Qty.	Total Ctn	Total Qty.	Quantity of defect				
					Hiking	Fabric Damage	Elastic Damage	Broken Skip	Uncut Thread
FDUS20 G3BFA	955110	10236	173	15498	10	2	4	5	5
	955111	596	17						
	955112	4666	82						
Total Defect					26				

Table 3.6: Inspection Report

3.8. Experimental Data: 08

INSPECTION COMPONENTS

FINAL DECISION AQL 2.5

Workmanship

Accept ☒   Reject ☐

Measurements

Accept ☒   Reject ☐

Import Buying Conditions (IBC)
Instead Of two combo One Combo (Blue Tiger) Lab test report not yet received.

Accept ☒   Reject ☐

| RESULT | ACCEPT : | √ | REJECT : | |

| Date + Signature of the Q.C: | Signature + Supplier Stamp : |

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KIABI la mode à petits prix

INSPECTION REPORT | Identification DQUA_061 | Date 2017 Jul 06 | Service provider *RISING(ACTIVE)*

WORKMANSHIP INSPECTION

ORDER N° 9 6 7 4 2 0 / 9 6 7 4 3 1 / 9 6 7 4 4 2 /

DEFECTS		Quantity of defects	
Piece not conform			
- Accessories not conform or missing	Asymmetry at side Seam/ Hiking		5
- Piece different with collection sample			
Workmanship defect			
- Garment is unbalanced	**Fabric Damage/ Fault**		02
- Pockets (unbalanced / symmetry / resistance)			
- Weak seams	**Elastic Damage**		2
- Puckering	**Broken skip**		2
- Overlock quality / seams quality	**Poor Trimming / Uncut threat**		2
- Holes on seams or open seams			
Colour shading			
- On same piece			
- On coordinated pieces (sets)			
- Between pieces			
Finishing and general look			
- Defect ironing			
- Uncut threads			
- Embroideries – Prints (position, colour, size)			
- Holes			
- Stains			
- Fabric Defect hand feel, weave defects			

Accessories defects

-	Buttons – buttonholes alignment strength	
-	Snaps, loose, not resistant	
-	Zippers	

Care label

-	Composition / care label missing	
-	Composition / care label wrong	

Advertising

-	Advertising hang tag missing	
-	Brand label missing	
-	Size label missing	

Others

-		
-		

Sample quantity :	3	1	5	AQL 2.5 :	Accept 14	Total of defects :	0	1	3

Factory Name:　　　Euphoria Apparels Limited
Date　　　　:　　　25.11.2020

Style	PO No	PO Qty.	Total Ctn	Total Qty.	Quantity of defect				
					Hiking	Fabric Damage	Elastic Damage	Broken Skip	Uncut Thread
FDUS20 G3BFA	967420	12260	188	18940	5	2	2	2	2
	967431	890	37						
	967442	5790	98						
Total Defect				13					

Table 3.7: Inspection Report

Chapter-04
Result & Discussion

4. Result and Discussion

In this chapter we can analyzed on the various stages of swimsuit manufacturing process and the critical path of this garments.

4.1. Experimental Data: 01

In this section we explain about the flow chart of the manufacturing process of swimsuit.

In that area we noticed that this process of manufacturing is so critical than others process of garments. That's why we can focus on the manufacturing layout. First of all we need to inhouse whole fabric and checkout of those fabric by the help of various process. Here some data about test process of fabric:

> Composition test
>
> GSM test
>
> Hygenic test
>
> Wicking test

Than its need to do for special pattern making and marker making. Because this is very important for swimsuit. The mesurement must accurate as requirement as buyer. Swimsuit is used most of the time by player. If the mesurement is accurate than its very easy to achive best performance.

And than cutting is also very important for making swimsuit for same reasson.

If printing is available in the garmnets than its must more carefully done. Because bad quality printing is harmful for the body. And the most important part is sewing. If it is make accurately

than a player or a swimer is more comfortable to wear it. After making a garments its need to quality cheaking , in that case its mandatory.

After completing quality cheaking its need to send for finishing. And in swimwear garments its need more good looking that others one.

And the major part is buyer inspection and packing. If we make it wrong than its must harmful for factory and buyer QC check it very carefully.

4.2. Experimental Data: 02

In this report we can explain about fabric inspection data. When fabric is the main issue of swimsuit than inspection of fabric is much more important. That's why we add some of fabric innspection data in this chapter. First of all here the 2 types of fabric we used in this program and the colors is:

1. Poppy Red.

2. AOP on snow white.

4.2.1. Shrinkage test:

Now we explain shrinkage test about the fabric report of Poppy Red . 82% & 18% fabric can inhoused 190mtr. We cut 35 cm on both length & width area.After wash it we can found 33.5 cm on the length area & 33.2 in the width area. So we losses 1.5 on the length & 1.8 in width area. That's why the losses perchantages is 4.28% in length side & 5.14% in width area.

So in this report the fabric is in good position for making garments.Because acceptable perchantage is below 10%.

Chart 4.1: Shrinkage Test

4.2.2. Defect Test:

Defect test is also important for fabric and this fabric is also done the defect test. The in housed fabric required GSM is 190. Declare length of the fabric is 89cm and the found length is 79. And the declare width is 68 and the found width is 60. So this found length and width is acceptable but not recommended.

And they can found 2 hole of above 1 inch and get 8 point. And they can found 5 spot on that fabric and get 5 point. The total point is 13.

And the perchantage of defect is under 10 so its passed.
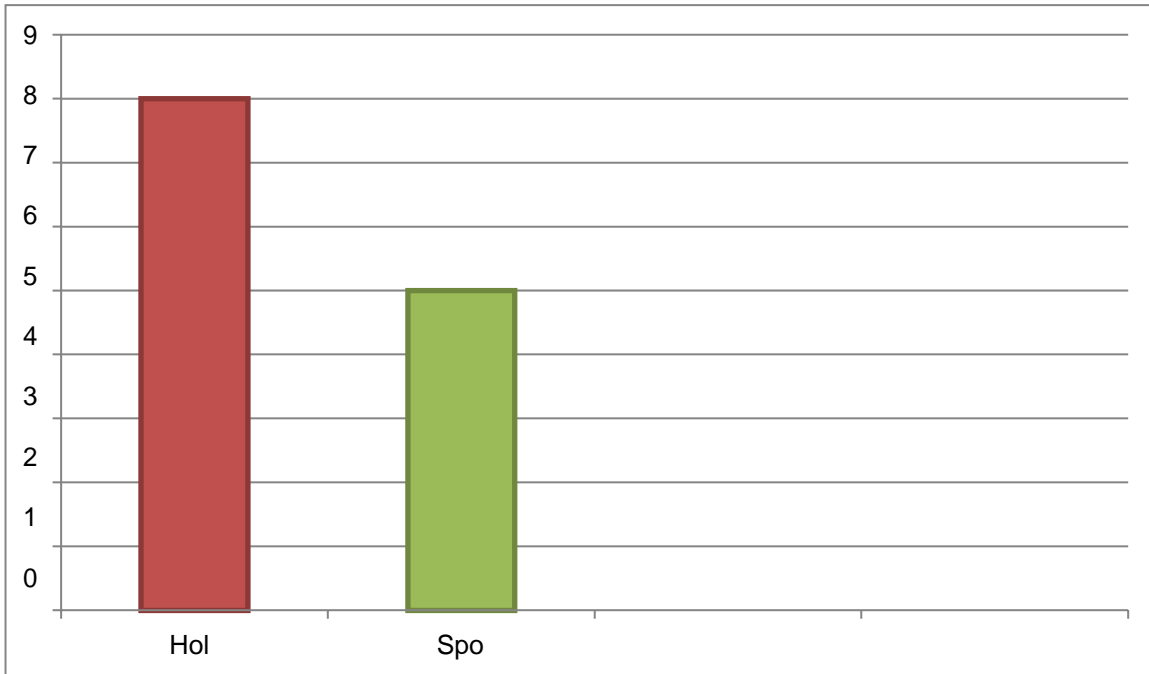
Chart 4.1.1: Inspection (4 point system)

4.3. Experimental Data: 03

In this report we can explain about fabric inspection data. When fabric is the main issue of swimsuit than inspection of fabric is much more important. That's why we add some of fabric innspection data in this chapter. First of all here the 2 types of fabric we used in this program and the colors is:

      1. Poppy Red.

      2. AOP on snow white.

4.3.1. Shrinkage test:

Now we explain shrinkage test about the fabric report of AOP on snow white. 82% & 18% fabric inhoused 162 mtr length. We cut 35 cm on both length & width area.After wash it we found 34.5

cm on the length area & 34.7 in the width area. So we losses 0.5cm on the length & 0.3cm in width

area. That's why the losses perchantages is 1.44% in length side & 0.88% in width area.

So in this report the fabric is in good position for making garments.Because acceptable
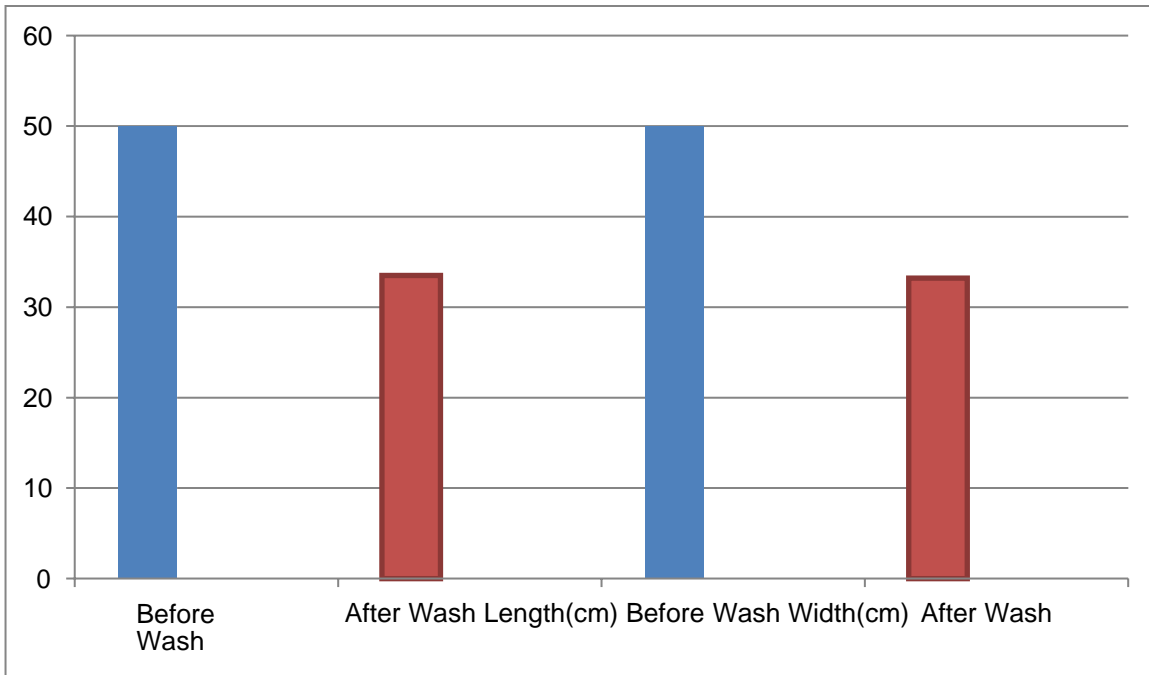
perchantage is below 10%.
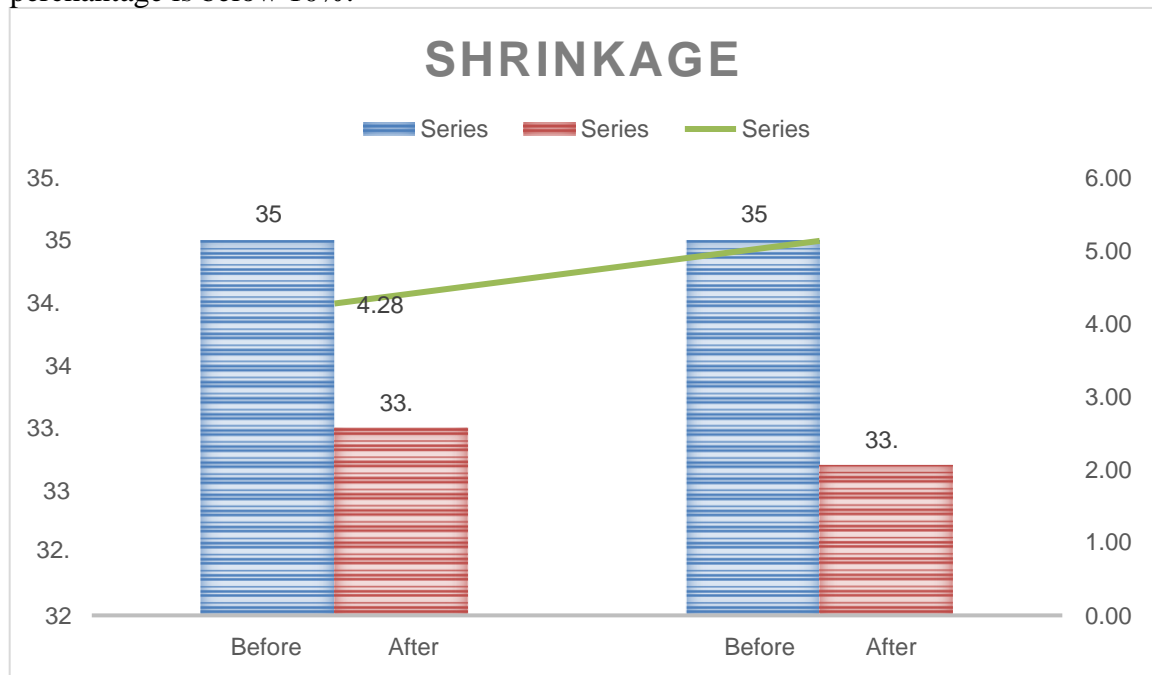
Chart 4.2: Shrinkage Test

4.3.2. Defect Test:

Defect test is also important for fabric and this fabric is also done the defect test. The in

housed fabric required GSM is 190. Declare length of the fabric is 89cm and the found length is

79. And the declare width is 68 and the found width is 60. So this found length and width is

acceptable but not recommended.

And they can found 2 hole of above 1 inch and get 8 point. And they can found 5 spot on that

fabric and get 5 point. The total point is 13.

And the perchantage of defect is under 10 so its passed.
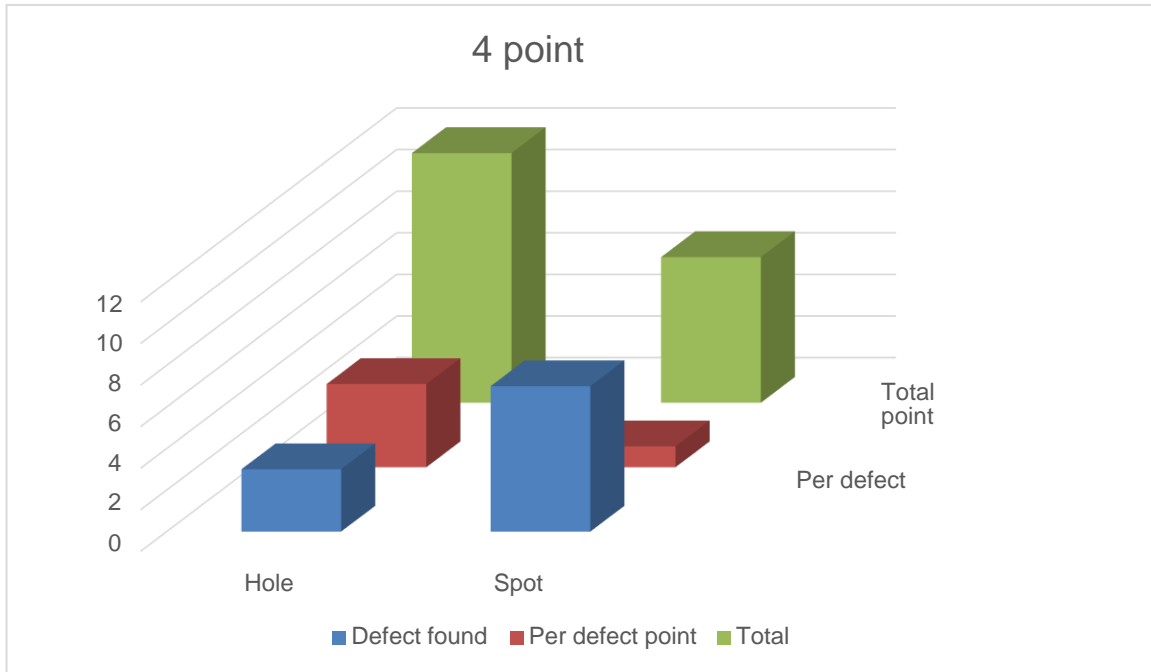
Chart 4.2.1: Inspection (4 point system)

4.4. Experimental Data: 04

In swimsuit garments sewing section is more important for making a garment. That's why we

look extra focus on this area and here some data of sewing action.

When make a garments there 10-15 types of joining is needed but in the making of a swimsuit it

Need more than 20 types of joining. Here the details of those joining:

Neatrn front gusset need 3 thread over lock machine & SMV is 0.10 sec

Join back gusset need 4 thread over lock machine & SMV is 0.23 sec

Basting gusset Single needed plain machine and the SMV is 0.26 sec

Side seam join need 4 threads over lock machine & SMV is 0.40 sec

Elastic at armhole is need 3 threads over lock machine & SMV is 0.19 sec

T/S elastic at armhole is need 1 stitch zigzag machine & SMV is 0.17 sec

Make gathering at ruffle is need 1 stitch zigzag machine & SMV is 0.24 sec

Join ruffle is need 4 thread over lock machine & SMV is 0.14 sec

Basting ruffle neckline is need single thread plain machine & SMV is 0.32 sec

Label make and join the label at center neck is need single thread plain machine and SMV is 0.33 sec

Binding at neckline is need 1 stitch zigzag machine and the SMV is 0.31 sec

Join at neck binding & tack end of ruffle join is need single thread plain machine & SMV is 0.24 sec

Label makes and join at centre back is needle single thread plain machine and SMV is 0.25 Sec

Make shoulder strap & loop is need 1 stitch zigzag machine & SMV is 0.13 sec

Measure and cut soulder strap & loop is need single thread plain machine .

Insert ring & slider is need MNL machine and SMV is 0.19 sec

Make soulder strap is need Barteck machine & SMV is 0.23 sec

Insert male clasf & dwowing is need MNL machine & SMV is 0.33 sec

Mark & tack strap & loop in need single needle machine and SMV is 0.24 sec

Attach elastic at legs(L+R) is need 3 thread over lock machine & SMV is 0.32 sec

T/S elastic at legs (L+R) is need 1 stitch zigzag machine & SMV is 0.34 sec

Bartack & thread trim is need Bartack machine and SMV is 0.62 secc

4.5. Experimental Data : 05

After completing the garments we need to third party test that's why its send to some renound

testing industry. That's why its need to send Bureau veritas factory for test and its recommend by

buyer and sometimes its send to Intertek or others factory. And take some garments of production

for testing.We send it for some important test is:

1. Fabric composition

2. Pilling test

3. Color fastness test

4. GSM test

After we get pass report for all test than its passed. And this is Oeko Test Certified report. In this report we get all test of 'M'. And this garments is passed.

Note: 'M' means Meet buyers Requirement

'F' means Below buyer requirement

'N/A' means its not applicable

'#' means no specific requirement

Pending= means need buyer aggrement

So test report is also very important for this garments because of their specilaism.

4.6. Experimental Data : 06

After completing this garments we need to third party test that's why its send to some renound testing industry. That's why its need to send Bureau veritas factory for test and its recommended by buyer and sometimes its send to Intertek or others factory. And take some garments of production for testing.We send it for some important test is:

1. Fabric composition

2. Color fastness test

3. GSM test

After we get pass report for all test than its passed. And this is Oeko Test Certified report. In this report we get 'F' in Fabric composition test, That means this fabric is not suiable for suimsuit. And we get 'M' in the color fastness test that means color is ok for this test. And we get 'F' on the GSM test that means the fabric is totally not ok. And it sould be change as soon as possible. The total result is also failed in this test report.

Note: 'M' means Meet buyers Requirement

'F' means Below buyer requirement

'N/A' means its not applicable

'#' means no specific requirement

Pending= means need buyer aggrement

So test report is also very important for this garments because of their specilaism.

4.7. Experimental Data : 07
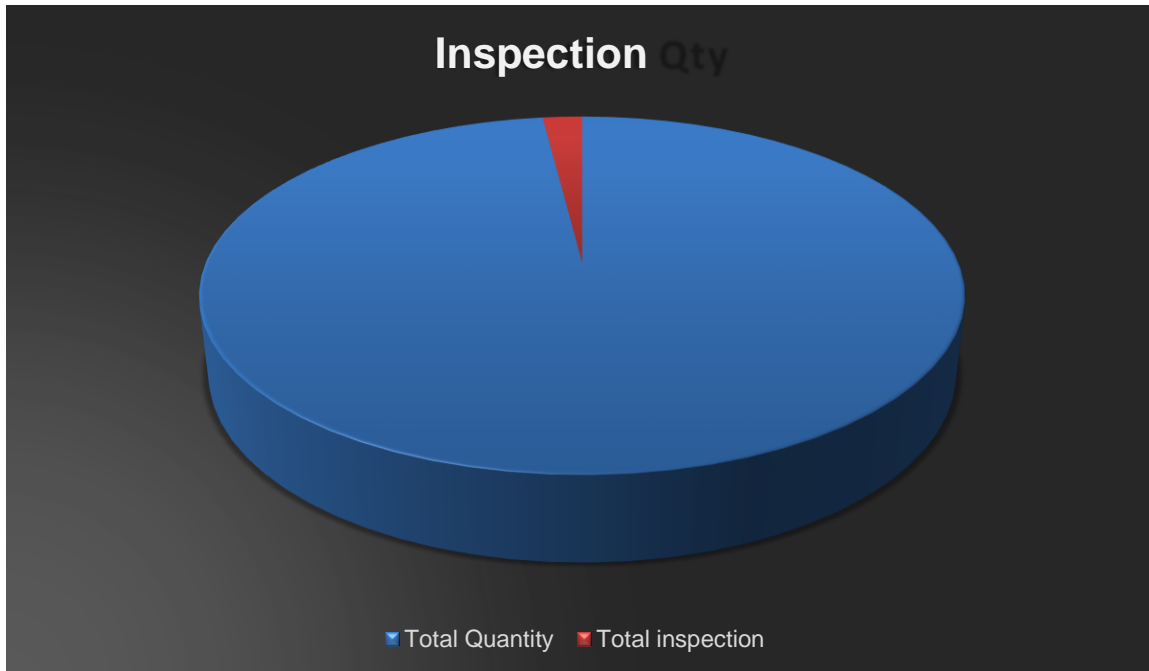
4.7.1. Inspection report:

After get test report it goes for packing and also inspection by buyer. In

this report buyer check all kind of fault of this garments.If faulty garments perchantage cant meet

the requirement than the inspection is failed. So we need to more carefull about to making

garments.

In this inspection the total garments is 15498 and the AQL checking quantity is 315.

Lot or Batch Size / Quantity			Sample Size Quantity
3	To	25	5
26	To	50	8
51	To	90	13
91	To	150	20
151	To	280	32
281	To	500	50
501	To	1200	80
1201	To	3200	125
3201	To	10 000	200
10001	To	35 000	315
35001	To	150 000	500

There are various kinds of defect is available here:

Care label

-	Composition / care label missing
-	Composition / care label wrong

Advertising

-	Advertising hang tag missing
-	Brand label missing
-	Size label missing

In this inspection the total defect is 26 out of 315 pcs of garments. According to AQL the acceptable range is 14 for 315 pcs garments. That means this inspection result is Reject.

AQL 2.5	
Ac	Re
0	1
0	1
1	2
1	2
2	3
3	4
5	6
7	8
10	11
14	15
21	22

INSPECTION RESULT

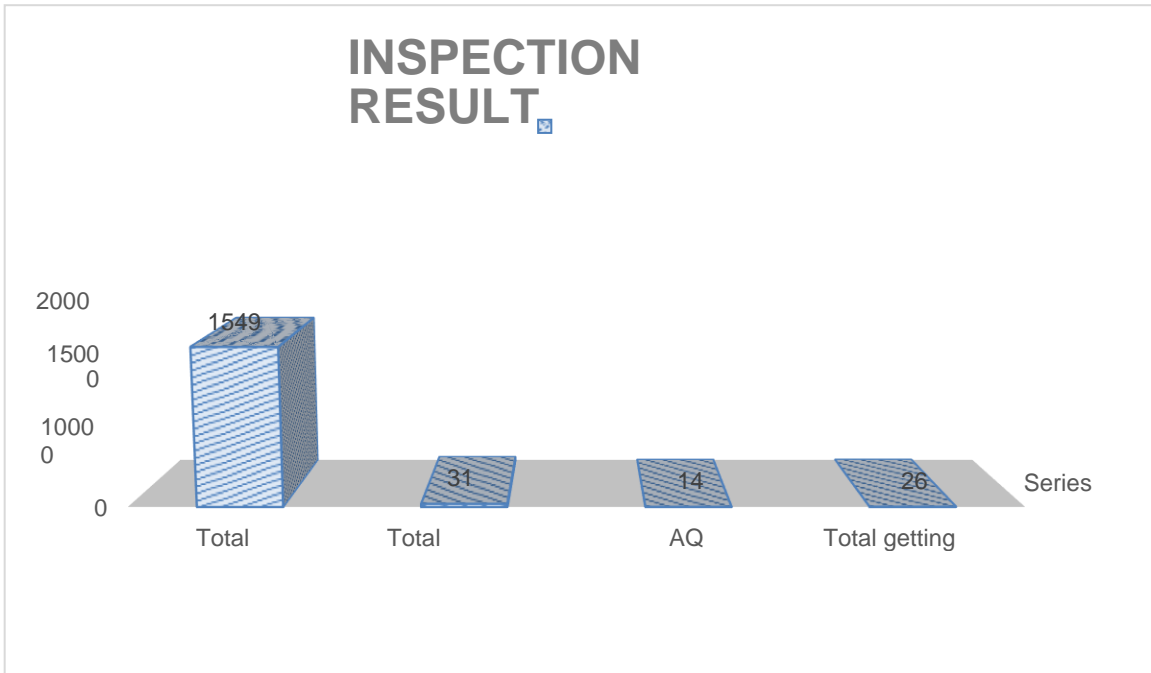|	1549	31	14	26
	Total	Total	AQ	Total getting

Chart 4.3: Inspection Result

4.8. Experimental Data : 08

4.8.1. Inspection report:

In this inspection the total garments is 18940 and the AQL checking quantity is 315

Lot or Batch Size / Quantity			Sample Size Quantity
3	To	25	5
26	To	50	8
51	To	90	13
91	To	150	20
151	To	280	32
281	To	500	50
501	To	1200	80
1201	To	3200	125
3201	To	10 000	200
10001	To	35 000	315
35001	To	150 000	500

There are various kinds of defect is available here:

Care label

-	Composition / care label missing
-	Composition / care label wrong

Advertising

-	Advertising hang tag missing
-	Brand label missing
-	Size label missing

In this inspection the total defect is 13 out of 315 pcs of garments. According to AQL the acceptable range is 14 for 315 pcs garments. That means this inspection result is passed.

AQL 2.5	
Ac	Re
0	1
0	1
1	2
1	2
2	3
3	4
5	6
7	8
10	11
14	15
21	22

INSPECTION RESULT

20000			
15000			
10000			
5000			

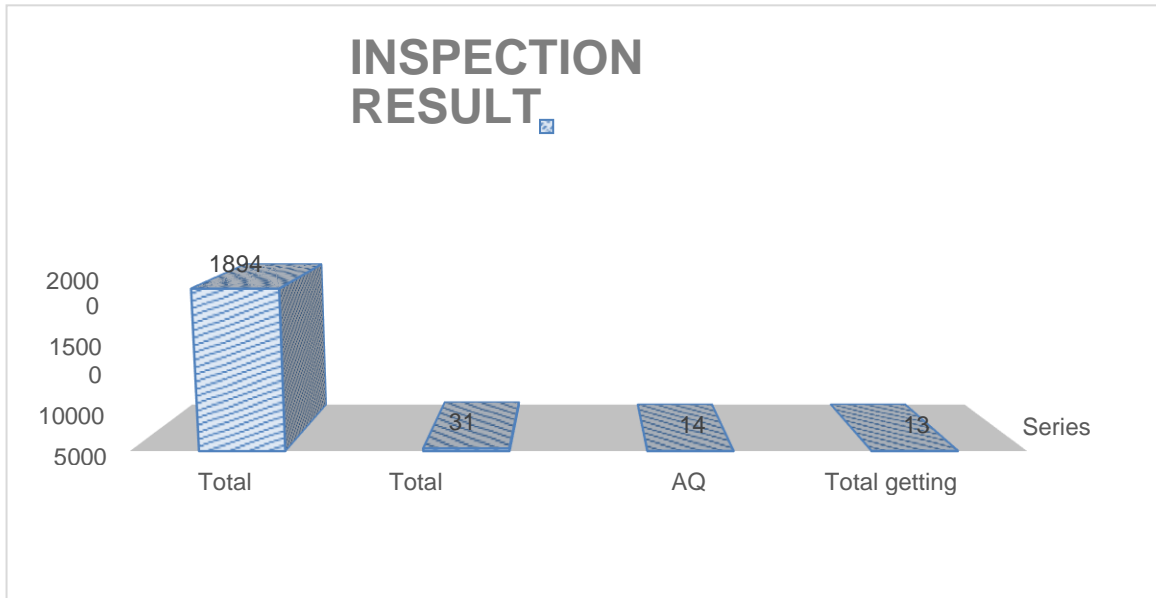| 1894	31	14	13	Series
Total	Total	AQ	Total getting	

Chart 4.4: Inspection Result

Chapter- 05
Conclusion

5. Conclusion

The aspects of a project are to develop an individual area for ensuring the exclusive garments. When a country can achieve their most of the GDP with a single sector than this is more important for making exclusive product and swimsuit is like that, and in this project we try to explore the manufacturing process of these garments. The R&D sector of our RMG industry is not much increasing in these days that's why it is very tough job to making exclusive garments. In that case we can't provide exclusive product like swimsuit. Exclusive product can increase the value of product and increase the Brand name and also the sector too. And exclusive product can meet the consumer satisfaction and get the actual price, high sales and foreign exchange for the country. When we produce different kind a product and its meet buyer requirement than its make impact on the economy of the factory also. In the period of project time we focus on the difficulties of manufacturing process like fabric, sewing thread, and sewing time, fault of the garments, inspection and lot more. If we can produced that kind of product without any type of problem which have an important impact to the country's economy as well as the factory.

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