



**Faculty of Engineering**

**Department of Textile Engineering**

Thesis on  
“Investigation on Final Random Inspection (FRI) report  
to find out the reasons of quality fail and remedies of the  
Faults”

**Submitted By**

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## Approval Sheet

This research entitled “**Investigation on Final Random Inspection (FRI) report to find out the reasons of quality fail and remedies of the faults at Daffodil International University, July 2015**” prepared and submitted by Samit Kumar Ghosh (ID-113-23-2699), Sourav Ray (ID-113-23-2774) and Md. Arifuzzaman Shakil (ID-113-23-2751) 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.

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## Declaration

We declare that this thesis paper is submitted in partial fulfillment of requirement of B.Sc. in Textile engineering Degree in Daffodil International University, Dhaka, Bangladesh. The total thesis work is written of our own language.

We also declare that, neither this thesis nor any part of this thesis has been submitted elsewhere for award of any degree.

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## **Dedication**

Our thesis dedicated to all kinds of worker/employee in Textile Industry.

## Abstract:

Our thesis topic is “Investigation on Final Random Inspection (FRI) report to find out the reasons of quality fail and remedies of the faults. We are try to describe this thesis overall quality control system in final inspection period, Quality control is the most important stage in any garments industries. This paper, we are briefly describing the quality control in knit garments industry. Mainly we are analysis the final inspection report in Montex Fabrics Ltd. (Mondol Group). Quality fail is the major problem in our garments industries. In garments industry quality means, Garments are free from different faults. Quality may be defined as the level of acceptance of a goods or services. We are trying to describe the quality control process, flow chart, procedure of final inspection, when final inspection report fail, defect analysis, their causes and their remedies. We have collected 13 Final inspection report from **Montex Fabrics Ltd. (Mondol Group)**. We found 13.24% fault in Fabric section fault, 64.87% sewing section fault, 18.82% finishing section fault and 3.07% miscellaneous. So we saw that the percentage of sewing fault is more than other section. The major fabric faults are Hole, Needle mark and Knitting defect. The major sewinf faults are Broken stitch, puckering, Neck shape poor, Skip stitch, Uncut thread etc. The major finishing faults are Hang tag missing, Pressing mark, Poly bag problems, Dirty spot, Oil spot etc. The major Miscellaneous fault is Printing spot. we are try to discuse about the Causes of the faults and how can we Remedies this type of faults.

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## 1. Introduction:

Although Bangladesh is not developed in industry, it has been enriched in Garment industries in the recent past years. In the field of Industrialization garment industry is a promising step. It has given the opportunity of employment to millions of unemployed, specially innumerable uneducated women of the country. It is making significant contribution in the field of our export income.

Today the apparel export sector is a multi-billion-dollar manufacturing and export industry in the Country and Bangladesh is one of the leading countries in exporting readymade garments of the world. The overall impact of the readymade garment exports is certainly one of the most significant social and economic developments in contemporary Bangladesh. There are about 4500 garments factories in the country, which was started from 1980 with exporting only \$3.24 million. From this sector approximately 80% is earned of our total export income, due to the tremendous growth of garment factories as well as the productions. With over one and a half million women workers employed in semi-skilled and skilled jobs producing clothing for exports, the development of the apparel export industry has had far-reaching implications. Garment industry has a complex supply chain where garment makers source materials, stitch garments and sell goods to retailers. Through buyers and retailers quality garments reach to end user located all over the world. No wearers will buy a garment with poor quality and visible defects. So buyers and retailer knowingly do not purchase a product that does not meet the quality requirement. Quality means customer needs is to be satisfied. Failure to maintain an adequate quality standard can therefore be unsuccessful. But maintaining an adequate standard of quality also costs effort. From the first investigation to find out what the potential customer for a new product really wants, through the processes of design, specification, controlled manufacture and sale. In the garment industry quality control is practiced right from the initial stage of sourcing raw materials to the stage of final finished garment. For textile and apparel industry product quality is calculated in terms of quality and standard of fibers, yarns, fabric construction, color fastness, surface designs and the final finished garment products. Quality is one of the important factors here, so quality control is required to make quality full products in this competitive world market.

Everybody understands the term “Quality” but it is difficult to define. Quality refers the total features and characteristics of a product depending on customers’ expectations of performance and durability of that product. Quality varies from people to people as their preferences. Quality is the agreed label of acceptance of any product between the two parties. User’s satisfaction is the ultimate object of the garments quality

According to the International Organization for Standardization (ISO) –

***“Quality is the fulfillment of the specified requirements for a product or service”.***

**Quality also means –**

- The degree of excellence that a product possesses.
- Meeting a specification.
- There is no defect found.
- Fulfill the customer expectations.

The acceptable quality label of products is especially depending on consumers. They use that product which is able to fulfill their all or most of the demand. In general term quality encompasses important characteristics of a product for which it is in demand. From the customers point of view to achieve satisfied quality label manufacturers should provide the right Product of right Quality at right Time & Undamaged Condition.

## **Aim & Objective:**

Final Random inspection is the last inspection system to export garments. Before shipment, a buyer inspect the products according to the AQL system. If the goods are ok then they order for shipment. But if the goods are not ok that means if they found many faults then they order for Recheck or cancel the shipment. For this reason a garments industry must be produce 100% faults free garments and that's why we choose this topic. We think that if we can reduce the faults which buyer found in final random inspection then

- Increase the buyer satisfaction.
- Buyer order maximum quantity of goods.
- Increase the number of new buyer and their order from Bangladeshi export oriented garments industries.
- Increase the export percentage of Bangladesh and we can earn more foreign money

## **Importance and Scope:**

Garments finishing process results in higher quality of garments. Because of garments finishing sells are increased. So the company achieves more profit. It is beneficial to all sectors which is given below:

**Benefit to the garments quality:**

- To enhance the suitability of the garments for end use.
- To improve appearance and sale apparel for comfort and utility.
- To improve attractiveness of the garments.
- To increase the life time or durability of the garments.
- To cover faults in the original garments.
- To improve wearing qualities of garments by making it shrink or crease resistant.
- To set garment shape. E.g. Durable press.

**Benefit to the management:**

- ✓ It provides overall properties and reputation of the organization
- ✓ Garments finishing ensure stability of the organization
- ✓ More profit achieved because of garment finishing.

**Benefit to the buyer:**

- ✓ Finishing process ensure better quality of garments.
- ✓ It also enables reduction in prices.

**Benefit to workers:**

- ✓ Increase the worker wages.
- ✓ Achieve worker satisfaction.
- ✓ Ensure better working condition.
- ✓ So we think the thesis work is so important for us to understand about garments finishing.

## **Limitation:**

During the project work, we have faced some limitation for which we could not give my best effort to ensure the project. They are in followings:

- As the worker is so busy when they remain in industry they could not talk with us freely.
- Sometimes buyer had visit in the industry so we could not move freely on that day.
- load shedding was happened for one day due to lack of gas. So on that day we could not do any work.
- We had very limited time. In spite of our willing to study more details it was not possible to do so.
- As we were not able to visit and research on several garments industry. So our thesis report is mainly based on a particular garments industry.
- Some of the points in different chapters are not described as these where not available.
- As some of the machine where not so updated and in some sector we have noticed the less use of modern technology, so our report on productivity can be partially true in case of using the modern technology.
- This whole process is not possible to bind in such a small frame as this report, hence our effort spent on summarizing them.

## 2. Literature Survey:

Firstly we collected 13 Final Random Inspection report from **Montex Fabrics Ltd. (Mondol Group)** and then we analyzed it. We separated the fault which occurs for machine fault and the fault which occur for worker fault. And we saw that the percentage of fault which occurs for worker fault is more than the fault which occur for machine fault.

### 2.1 Quality:

Quality means customer needs is to be satisfied. Failure to maintain an adequate quality standard can therefore be unsuccessful. But maintaining an adequate standard of quality also costs effort. From the first investigation to find out what the potential customer for a new product really wants, through the processes of design, specification, controlled manufacture and sale. There are a number of factors on which quality fitness of garment industry is based such as - performance, reliability, durability, visual and perceived quality of the garment.

A modern definition of quality derives from Juran's "fitness for intended use." This definition Basically says that quality is "meeting or exceeding customer expectations."

#### **American Society for Quality (ASQ) says-**

"Quality denotes an excellence in goods and services, especially to the degree they conform to requirements and satisfy customers."

### **Dave's Definition of Quality:**

"Quality is a really, really boring definition that has no real meaning to most humans on this planet unless you are a millionaire consultant writing a new book or a quality coordinator applying for some "Quality" award or certification so you can quit and become a millionaire consultant who writes books and produces infomercials from his private island in the Caribbean."

### **Some of the most popular definitions for quality are listed below:**

- a. A degree of excellence
- b. Conformance to requirements
- c. Totality of characteristics which act to satisfy a need
- d. Fitness for use
- e. Fitness for purpose
- f. Freedom from defects
- g. Delighting customers

## **2.2 Quality Control:**

The term quality refers the excellence of a product. When we say the quality of a product is good. We mean that the product is good for the purpose for which it has been made.

Control means To check or verify and hence to regulate.

So, Quality control is the synthetic and regular control of the variable which affect the quality of a product.



The operational techniques and activities that sustain the quality of a product or service in order to satisfy given requirements . It consists of quality planning , data collection, data analysis and implementation and is applicable to all phases of product life cycle ; design, manufacturing, delivery and installation, operation and maintenance.

Quality is of prime importance in any aspect of business. Customers demand and expect value for money. As producers of apparel there must be a constant endeavor to produce work of good quality. "The systems required for programming and coordinating the efforts of the various groups in an organization to maintain the requisite quality". As such Quality Control is seen as the agent of Quality Assurance or Total Quality Control. In the garment industry quality control is practiced right from the initial stage of sourcing raw materials to the stage of final finished garment. For textile and apparel industry product quality is calculated in terms of quality and standard of fibres, yarns, fabric construction, colour fastness, surface designs and the final finished garment products. However quality expectations for export are related to the type of customer segments and the retail outlets. Quality control and standards are one of the most important aspects of the content of any job and therefore a major factor in training.

### **2.3 Objects of Quality Control:**

- ❖ To produce required quality product.
- ❖ To fulfill the customer's demand.
- ❖ To reduce the production cost.
- ❖ To reduce wastage.
- ❖ To earn maximum profit at minimum cost.

## 2.4 Establishing the Quality Requirements:

The first step for quality control is to understand, establish & accept the customers' quality requirements. This involves the following steps.

- i. Getting customers specifications regarding the quality
- ii. Referring our past performance
- iii. Discussing with the Quality Control Department
- iv. Discussing with the Production Department
- v. Giving the Feed Back to the customers
- vi. Receiving the revised quality requirements from the customers
- vii. Accepting the quality parameters

## 2.5 Quality Control Function of Textile Materials

### *Test Properties of Yarn:*

- a) If routine checks are carried out on yarn choose a delivery of average Tex (count, denier).
- b) If incoming yarn is not checked then check the Tex (count, denier) of the delivery intended for samples and only use if it is within acceptable limits.
- c) Carry out other appropriate tests on yarn e.g. crimp nylon-Crimp Rigidity test. Knit a small sample and check that dye is fast to light, washing and perspiration etc.
- d) Record details of yarn type, supplier, Tex (denier, count) etc. and pass information to knitting room.

***Knitting Specification:***

- a) Record all details required to produce the fabric or garment blanks including chain set out, stitch length and any instrument measurements.
- b) Record all details of making the trimmings.
- c) Note any difficulties encountered e.g. stitch pattern causing occasional drop stitches. Pass information to making-up room.

***Making-up Specification :***

- Record all details of making-up, including the type and count of the sewing thread, and the order of seaming the parts.
- Note any difficulties encountered e.g. difficult operation to attach collar.

***Test for Physical Properties of Garments:***

- a) Record the dimensions of the garment as soon as it is completed.
- b) For a fiber of high moisture regain find the weight in correct condition.
- c) Wash garment and recheck the measurements.

***Liaison of Quality Control with Cost Department :***

- a) On completion, supply cost department with all information.
- b) For the correct Tex (count, denier) of yarn, costing may be made directly on sample. For a count which is above or below the average (although within an acceptable tolerance) make an appropriate adjustment to yarn costs and weight.

- c) Make an allowance for any anticipated extra difficulties, or a higher than normal rate of seconds.

***Subsequent Alteration :***

- a) Make any necessary alterations required by firm or by buyers.
- b) Record changes at each stage.

## **2.6 Quality Control in the Design and Development Department**

The following rules should followed by the Design and Development Department to control the quality of the product.

- If disorganization in sampling is to be avoided guideline procedure must be established beforehand.
- Modifications to the development sample must be noted for inclusion in the final specification.
- A handle sample (sealed if necessary) must be established as well as a working sample.
- A proper flow diagram must be established with appropriate time factors, and all personnel concerned informed of the duty and timing of their part.

## **2.7 Garments Quality Control:**

Employees are a significant component of any company. If an organization has personnel that do not have sufficient abilities or training, have difficulty knowing directions, or are misinformed, good quality could possibly be severely diminished. When good quality control is perceived as in conditions of human being beings, it concerns correctable issues. However, it should certainly not

be baffled with human being source issues. Quality control in garments is typically a procedure employed to make certain a particular degree of top quality in clothing industry. It may well consist of whatever actions a company deems essential to offer to the handle and verification of particular features of the product or service or service. The fundamental aim of top quality handle would be to be sure the fact that products, services, or processes supplied satisfy particular specifications and so are dependable, satisfactory, and fiscally sound. Garment quality control involves the examination of a product, service, or process for certain minimum labels of garment quality. The goal of a quality control team is to identify products or services that do not meet a company's specified standards of quality. If a problem is identified, the job of a quality control team or professional may involve stopping production temporarily. Depending on the particular service or product, as well as the type of problem identified, production or implementation may not cease entirely. Garment quality control in tcochina.com is designed to make sure processes are sufficient to meet your objectives. Simply put, quality assurance ensures a product or service is manufactured, implemented, created, or produced in the right way; while quality control evaluates that the end result is satisfactory.

## **2.8 The various Steps of Garments manufacturing quality control**

### **2.8.1. Quality Control in Sample Section:**

- Maintaining buyer Specification standard
- Checking the sample and its different issues
- Measurements checking
- Fabric color, GSM, Fastness etc properties required checking
- SPI and other parameter checking

### 2.8.2. Quality Control in Marker Making:

- To check notch or drill mark
- Fabric width must be higher than marker width
- Fabric length must be higher than marker length
- Matching of green line
- Check pattern size and dimension
- Matching of check and stripe taking into consideration
- Considering garments production plan
- Cutting table length consideration
- Pattern direction consideration

### 2.8.3. Quality Control in Fabric Spreading:

- Fabric spreading according to correct alignment with marker length and width
- Maintain requirements of spreading
- Matching of check and stripe
- Lay contains correct number of fabric ply
- Correct Ply direction
- To control the fabric splicing
- Tension control

#### 2.8.4. Quality Control in Fabric Cutting:

- The dimension of the pattern and the cut piece should be same and accurate
- Cut edge should be smooth and clean
- Notch should be cut finely
- Drill hole should made at proper place
  
- No yarn fraying should occur at cut edge
- Avoid blade deflection
- Maintain cutting angle
- More skilled operator using

#### 2.8.5. Quality Control in Sewing Section:

- Input material checking
- Cut panel and accessories checking
- Machine is in well condition
- Thread count check
- Special work like embroidery, printing panel check
- Needle size checking
- Stitching fault should be checked
- Garments measurement check
- Seam fault check
- Size mistake check
- Mismatching matching of trimming
- Shade variation within the cloth
- Wrong placement of interlining
- Creased or wrinkle appearance control

### 2.8.6. Quality Control in Finishing Section:

- Proper inspection of the garments including measurement, spot, dirt, impurities
- Water spot
- Shading variation check
- Smooth and unfold in pocket
- In secured or broken chain or button
- Wrong fold
- Proper shape in garments
- Properly dried in after pressing
- Wanted wrinkle or fold in lining
- Get up checking
- Collar closing
- Side seam
- Sleeve placket attach
- Cuff attach
- Bottom hem
- Back yoke
- Every parts of a body

## 2.9 Inspection:

Inspection in reference to the apparel industry can be defined as the visual examination or review of raw materials (like fabric, sewing threads, buttons, trims, etc.), partially finished components of the garments and completely finished garments in relation to some standards. The main objective of inspection is the detection of the defects as early as possible in the manufacturing process so that time and money are not wasted later on in either correcting the defect or writing off defective garments.



### 2.9.1 Types of inspection:

Quality Assurance process the bulk production is examined before delivery to the customer to see if it meets the specifications. The consumers want to get high quality products in low price. The products should reach the consumers with right quality depends on the cost. Quality assurance covers all the process within a company that contributes to the production of quality products. Which is conducted from beginning to end of the process (or) shipment? The inspection is carried out by representatives of the current production and the result recorded on control chart. Which is a process to assure the product quality acceptable or not. The aim of garment inspection is to visually inspect articles at random from a delivery in order to verify their general conformity and appearance with instruction/description and/or sample received.

There are different types of inspection following by inspectors as requirement of consumers.

#### **Pre-Production check:**

This is done before production starts. Where then is a final verification of the material used; style, cut and workmanship of the garment or pre-production sample as per the customer Requirements.

#### **Initial production check:**

This is done at the start of production where a first batch of garments is inspected; to distinguish possible discrepancies/variation and to allow for the necessary corrections to be made bulk production. The inspection is a preliminary stage covering mainly style and general appearance, workmanship, measurements, quality of fabrics, components, weight, color and/or printing.

#### **During production check:**

This is done during production to ensure initial discrepancies/variations have been rectified. This inspection is in fact the follow-up of the initial production check and is generally carried out a few days after the initial inspection, especially if discrepancies have been detected at that time.

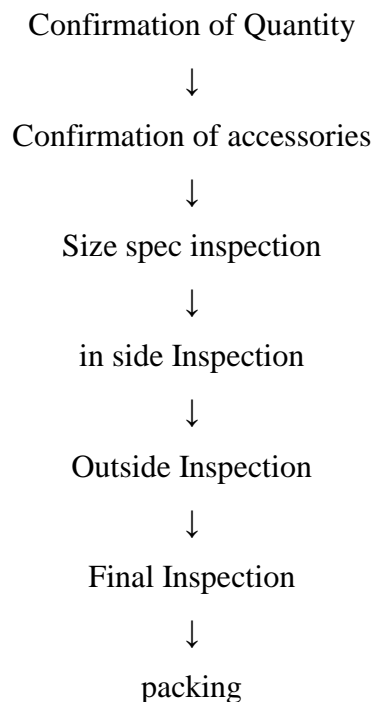
### **Final Random Inspection:**

This is carried out when the production of the total quantity of an order or partial delivery is completed. A sample lot will be selected from the order and a percentage of the garments will be inspected, this percentage usually being stipulated by the buyer.

### 2.9.2 Garment Inspection:

The inspections are done to control the quality is means by examining the products without the products any instruments. To examine the fabric, sewing, button, thread, zipper, garments measurements and so on according to specification or desired standard is called inspection. There are so many facilities for inspection in every section of garments industries. The aim of inspection is to reduce the time and cost by identifying the faults or defects in every step of garments making.

### 2.9.3 Flow Chart of Garment Inspection:



#### 2.9.4 Inspection Procedure of Garments are Described Below:

##### **Confirmation of Quantity:**

First step of garment inspection start with confirmation of Quantity with the vendors packing list by counting all pieces. Of each box. If quality is not matching to the packing list and written in the box then this discrepancy is informed to the vendor.

##### **Confirmation of Accessories:**

Next step is the confirmation of accessories, here we confirm brand tags, demerit tags, Price tags, or other tags, wash care labels, woven labels, or other labels and accessories as required by the buyer.

##### **Size Spec inspection:**

After confirmation of accessories all pcs are checked as per size spec based on the instruction sheet which is given by the buyer side. If any measurement problem is noticed then we check the original sample and inform the buyer same time.

##### **In Side Inspection:**

At this stage garment is checked from reverse side to ensure that there is no fabric defect, poor stitching, and stains etc in the garment.

##### **Out Side Inspection:**

At this stage garment is checked from outside to ensure that there is no color variation, weaving defect, fabric defect, printing defect, holes, poor stitching, bad smell , dying defect and stains etc. in the garment.

### **Final Inspection:**

Final Inspection stage is the most important part of inspection process, here garment is rechecked to confirm that inspection is done properly without missing any checking step if any defect is noticed we put it into rejection bin or send it for repay.

### **Packing:**

All “Grade-A” goods are put back into poly bags as per the original packaging and then they are send for needle inspection.

So, depending on the quality of defect some garments are send for repair and some are rejected.

## **2.10 Inspection of different section in garments industries:**

### **2.10.1 Accessories Inspection:**

❖ **Sewing Thread Inspection:** Sewing threads should be checked and tested for the following characteristics:

- i. Yarn count.
- ii. Yarn ply.
- iii. Number of twists per unit length (TPI or TPM).
- iv. Yarn strength (tenacity).

❖ **Zipper Inspection:** Zipper should be checked for the followings:

- Dimension: Tape width, tape extensions, and overall useable length of zipper should be as specified.
- Top and bottom stoppers should be fastened securely.
- Zipper tape should be uniform in color.
- Zipper should not cause wrinkling and puckering after sewn into garments.
- Zipper should be azo-free, nickel free, non-magnetic and non toxic painting.

❖ **Button Inspection:** Button should be checked for the followings:

- Button holes should be large, clean, and free from flash, so that it will not cut the thread.
- Button holes should be located properly.
- Button thickness should be uniform.
- Button shade should be within tolerance.
- Button size should be as specified.

### 2.10.2 Spreading Quality Control:

Not enough plies to cover quantity of garments required. Plies misaligned resulted in garment parts getting cut with bits missing in some plies at the edge of the spread. Narrow fabric, causes garment parts at the edge of the lay getting cut with bits missing. Incorrect tension of plies, i.e. fabric spread too tight or too loose. This will result in parts not fitting in sewing, and finished garments not meeting size tolerances. Not all plies facing in correct direction (whether 'one way' as with nap, or 'one way either way' as with some check designs). This happens when fabric is not spread face down, face up, or face to face as required. Unacceptable damages in the garment parts. Parts not fully included owing to splicing errors. Spread distorted by the attraction or repulsion of plies caused by excessive static electricity. Plies are not spread accurately one above another for cutting. This results in mismatching checks.

### 2.10.3 Cutting Quality Check List:

- i. Pattern to Cutting Garments Measurement Check
- ii. Pattern quality check
- iii. Marker quality check
- iv. Fabric diameter Measurement Check.
- v. Cutting Laid Check.

- vi. Fabric Roll to Roll Shade Check.
- vii. Fabric G.S.M Check.
- viii. Bundle Mistake Check.
- ix. Size Mistake Check.
- x. Fabric Color Mistake Check.
- xi. Yarn contaminated Check.
- xii. Any Fabric Problem Check.

#### 2.10.4 Sewing line quality inspection:

##### Sewing Line quality Check List:

- i. Buyer Approved Sample & Measurement Sheet Check.
- ii. Sample Wise Input Check.
- iii. Buyer Approved Trims Card Check.
- iv. Buyer Approved Sample Wise Style Check.
- v. All Machine thread Tension Check.
- vi. Style Wise Print & Embroidery Placement Check.
- vii. All Process Measurement Check.
- viii. All Machine Oil Spot Check.
- ix. All Process S.P.I Check as Per Buyer Requirement.
- x. Input Time Shading, Bundle Mistake & Size Mistake Check.
- xi. Buyer Approved Wise Contrast Color Check.
- xii. As per Buyer Requirement Wise Styling Check.
- xiii. All Machine Stitch Tension Balance Properly.

### 2.10.5 Sewing Table inspection

- i. Style Wise Garments Check.
- ii. All Process Measurement Check...
- iii. Front Part, Back Part, Sleeve & Thread Shading Check.
- iv. S.P.I Check for All Process.
- v. Print/Embroidery Placement Check.
- vi. Main Label, Care Label, Size Label & Care Symbol Check.
- vii. Size Mistake Check.
- viii. All Process Alter Check.
- ix. Any fabric fault/Rejection Check.

### 2.10.6 Inside 100% Process Inspection / Finishing Quality Check List:

- i. As Per Buyer Requirement Wise Iron Check...
- ii. Buyer Approved Sample Wise Style Check.
- iii. Front Part, Back part, Sleeve, Rib Thread & Contrast Color check.
- iv. Print/Embroidery Quality & Placement Check.
- v. All process S.P.I check.
- vi. Oil Spot/Dirty Spot Check.
- vii. Main Label Care label & Care Symbol Check.
- viii. Any Fabric Fault & Fabric Reject Check.
- ix. All process Measurement Check.
- x. Blister Poly & After Poly Getup Check.
- xi. Hang tag & Price Sticker Check.
- xii. Assortment Every Carton Pieces Quantity Check.
- xiii. Buyer Requirement Wise Carton Size, Poly Size, & garments Size Check.

## 2.10.7 Outside 100% process Inspection:

### a) **Print & Embroidery Quality Check List**

- Buyer Approved Sample or Artwork Wise Bulk Sample Print & Embroidery Design Check.
- Size Wise Approved Pattern Placement Check.
- As per Sample Wise Print Design, Color & Quality Check.
- Bundle & Size Wise Print/Embroidery Check.
- Fabric Top Side in Side Check.
- Print / Embroidery Pattern Placement Check.
- As Per Sample Wise Print/Embroidery Design, Thread Color Quality Check.
- Print/Embroidery Color Wise Wash Test Check.

### b) **Store Quality Check List:**

- Buyer Approved Trims Card Check.
- Buyer Approved Sample Wise Main, Size & Care Label Check.
- Buyer Approved Sample Wise Care Symbol Check.
- Thread Color Shading & Quality Check.
- Buyer Wise Hang tag & Price Sticker Check

## 2.10.8 Critical operation check:

- Neck shape check
- Zipper attaching check
- Miss tuck

## 2.10.9 Iron Check:

- Iron quality check
- Poor iron check
- Proper temperature check
- Proper pressing check



#### 2.10.10 Measurement check:

- Measurements check properly
- If fail then reprocess the operation
- If overall fail to desire measurement then reject

#### 2.10.11 Poly & accessories Check:

- Blister Poly & After Poly Getup Check
- Main Label Care label & Care Symbol Check.
- Front Part, Back part, Sleeve, Rib Thread & Contrast Color check.

#### 2.10.12 Final (Shade & Other check):

- Shade variation
- Dyeing fault check
- Fabric fault
- Pin holes
- Bowing
- Pilling
- Water Spots
- Cuts or Nicks
- Seam Tears
- Soil
- Streaks
- Inadequate Pressing
- Pressing Producing Shine on Fabric
- Loose Threads
- Folding Defects

### 2.10.13 2 hour audit:

A quality inspector audit the overall process every 2 hours

### 2.10.14 Day final audit:

Quality manager audits the overall process after day final.

### 2.10.15 Lot final audit:

After production a lot then lot final audit arrange by industry.

## 2.11 Acceptable Quality Label (AQL)

### 2.11.1 Definition:

A statistical measurement of the maximum number of defective goods considered acceptable in a particular sample size. If the acceptable quality level (AQL) is not reached for a particular sampling of goods, manufacturers will review the various parameters in the production process to determine the areas causing the defects.

For example: “We want no more than 1.5% defective items in the whole order quantity, on average over several production runs with that supplier” means the AQL is 1.5%.

AQL is one of the most frequently used terms when it comes to quality in the apparel export industry. As most of the acceptance decisions of the apparel shipments for the export market are made on the basis of AQL based sampling plans. AQL means Acceptable Quality Level. In any business process, before accepting the finished goods from the manufacturer buyer do inspection of goods. It is so much important in export garment sector. Because foreign buyers are so much concern about product quality. They give AQL on the product to the manufacturer. Buyers do inspection of goods as randomly process. If AQL pass that means goods are in acceptable quality

level he gives certificate to ship the goods. The AQL level varies process to process, product to product and even buyer to buyer. In the following table a sampling plan is given for final shipment inspection.

### 2.11.2 Types of defect in AQL

#### ➤ **Major defects:**

Which fails to meet the mandatory regulations directly affecting the salability and safety of the merchandise as the point of view of the customer? Which affect the salability but also affect the value of the merchandise is considered as major defective, the major defects cannot be rectify.

Example: Fabric hole, broken stitch, size Jumped, Dye patches, etc.

#### ➤ **Minor Defects:**

These defects shall deteriorate the serviceability of the merchandise within few washing or laundry minor defects rectify. Example: Stain, Skip stitch, wavy bottom hem. Etc.

If the defect found front side of the garment (when packed) which is considered as major, if it is found back side of the garment which is consider as minor defects. Defects are considered major & minor as per the customer demands.

#### ➤ **Critical Defect:**

Totally unacceptable defect by which a user might get harmed, or regulations are not respected is called critical defect.

Example: Sewing Needle Break, any harmful metal part.

Acceptance Quality Level (AQL) refers to the maximum number of defective items that could be considered accepted during the random sampling of and inspection. The defects that are found during inspection are classified into 3 categories:

Critical: Must be 100% accurate.

There is no range. Major: Normally 2.5%

Minor: Normally 4%

### 2.11.3 AQL Chart:

Category of inspection		FRI (Final Random inspection)				
Lot Size		AQL				
		1.0	1.5	2.5	4.0	6.5
51-90	Inspect	*13	8	20	13	13
	Accept	+0	0	1	1	2
91-150	Inspect	13	32	20	20	20
	Accept	0	1	1	2	3
151-280	Inspect	50	32	32	32	32
	Accept	1	1	2	3	5
281-500	Inspect	50	50	50	50	50
	Accept	1	2	3	5	7
501-1200	Inspect	80	80	80	80	80
	Accept	2	3	5	7	10
1201-3200	Inspect	125	125	125	127	125
	Accept	3	5	7	10	14
3201-10000	Inspect	200	200	200	200	200
	Accept	5	7	10	14	21
10001-35000	Inspect	315	315	315	315	200
	Accept	7	10	14	21	21
35001 -150000	Inspect	500	500	500	315	200
	Accept	10	14	21	21	21
150001- 500000	Inspect	800	800	500	315	200
	Accept	4	21	21	21	21
500001 + More	Inspect	1250	800	500	315	200
	Accept	21	21	21	21	21

#### 2.11.4 AQL Requirements Based on the Products:

In general cases the buyer will determine which sampling plan and what AQL to adopt. There are three types of sampling plans: i.e. single, double and multiple sampling plans. Each sampling plan can be performed at three levels, i.e. normal, tightened and reduced, depending on inspection requirements and quality of the products. The apparel industry mainly uses single sampling plans for the acceptance decisions. However, a few buyers also use double sampling procedure. In single sample based on AQL table you randomly draw a sample consisting of specified number of garments from a lot. The sample plan also provides the number maximum allowed defective pieces. If the defective pieces are less than allowed number the lot is accepted and if the number of defective pieces is greater than allowed the lot is rejected. One may say that as the acceptance sampling is scientific, ideally speaking, it must lead to 100% reliable results. In other words, it must always lead to acceptance of lots containing lower defective level than AQL and must reject all the lots that contain more defective products than AQL. But this is not possible, as the acceptance decision is made only on the basis of small sample drawn from the lot and it carries a risk of making a wrong judgment.

##### **Single sampling plan - Normal inspection:**

Assurance an AQL of 2.5 % and a lot size of 1200 garments and the sample size is 80 garments. If the number of defective garments found is 5 the total lot is "Acceptable" suppose if the defective garments found is 6, the total lot is "Reject/ Re-Check".

##### **Double sampling plan - Normal Inspection:**

Assurance an AQL 4.0% and a lot size is 1200 garments and the sample size is 80 garments. If the Number of defective garments found is 7, the total lot is "Acceptable" suppose if the defective garments found is 8 the total lot is "Reject/ Re-Check".

For Example:

Total garments (lot Size) 1200 garments

Sample size (selected for inspection) 80 garments

AQL 2.5 / 4.0

If the major defective found is 5 and minor defective found is 7 the total garments is "Acceptable". If the defective exceed (Above 5 major and 7 Minor), the total garments is Reject / Re-check.

### 3. Experimental Data and Analysis:

#### 3.1 Some Failed Final Random Inspection Report:

**Intertek**

FINAL INSPECTION REPORT

El Corte Inglés

REPORT ID NO: INS - 89694

4. Workmanship			Defect description	Critical	Major	Minor
Style no	Sample size	Color	ASymmetrical shape at armhole + oil spot + pinch at placket + uneven width at shoulder	-	01	-
E.515/JA.07	62 SETS	FUCXIA	NEEDLE CUT HOLE AT FRONT	-	02	-
			BROKEN STITCH AT HEM	-	01	-
			RAWEDGE AT INSIDE	-	-	01
			UNEVEN WIDTH AT PLACKET, SHOULDER	-	-	03
			SPOT AT HEM	-	-	01
			EXPOSED UNDER FABRIC AT PLACKET	-	-	01
	63 SETS	BLUE	FUSING MARK + LOOP THREAD AT INSIDE	-	01	-
			HOLE AT WAISTBAND, PLACKET CORNER	-	02	-
			NEEDLE CUT HOLE AT PLACKET	-	01	-
			ASymmetrical shape at armhole + uneven width at shoulder	-	02	-
			BROKEN STITCH AT HEM	-	02	-
			UNCUT THREAD AT WAIST BAND, INSIDE	-	-	02
			PINCH AT PLACKET CORNER	-	-	01
			UNEVEN WIDTH AT PLACKET	-	-	03
			RAWEDGE AT HEM	-	-	01
			CONTRAST COLOR THREAD AT BACK	-	-	01
Found				00	12	14
Allowed				00	07	10
Result				"FAILED"		

PIR-CHINA-IT-FRI-656 R20



**Intertek**
**FINAL INSPECTION REPORT**
*El Corte Ingles*

REPORT ID NO: IAS-78259

4. Workmanship							
Style no	Sample Size	Color	Defect description	Critical	Major	Minor	
K-16-TS-194	200 PCS	CURRY	OIL SPOT	-	01	02	
			BROKEN STITCH	-	-	02	
			POOR JOINT STITCH	-	02	-	
			HOLE AT BODY	-	-	03	
			DIRTY AT FRONT	-	-	02	
			MISMATCH AT BACK YOKES	-	-	01	
			PUCKERED AT FRONT	-	02	-	
			UNCUT THREAD	-	-	02	
			HANG TAG MISSING	-	03	-	
			LABLE MISSING	-	02	-	
			POLYBAG PROBLEM	-	-	01	
			PRINTING FAULTS	-	-	01	
			EMBROIDERY DEFECT	-	02	-	
			SHADE VARIATION	-	-	03	
				Found	00	12	12
				Allowed	00	10	14
				Result	"FAILED"		

PIR-CHINA-IT-FRI-656 R20



**Intertek**

FINAL INSPECTION REPORT

QI Control Page

REPORT ID NO: INS-39593

4. Workmanship								
Style no	Sample size	Color	Defect description	Critical	Major	Minor		
FJ-8GL-T3-1559	48 pcs	Cherisse	Needle cut hole at shoulder, Side seam	-	02	-		
			Stain at back	-	01	-		
			Hole at front	-	01	-		
			Uneven at stripe width	-	02	04		
			Uncut thread at side seam	-	-	01		
			Poor shape at armhole	-	-	01		
			Loop thread at armhole	-	-	01		
			Oil spot at front	-	-	01		
			53 pcs	Curry	Skipped stitch at armhole	-	01	-
					Broken stitch at bottom	-	02	-
Broken stitch at bottom + Uneven at shoulder width	-	01			-			
Poor shape at armhole	-	-			01			
Uncut thread at shoulder, Bottom	-	-			02			
48 pcs	Nautic	Dirty at shoulder	-	-	01			
		Open seam at armhole	-	01	-			
		Puckered at zipper end	-	-	01			
		Uncut thread at back yoke	-	-	01			
		Asymmetrical shape at neck	-	01	-			
48 pcs	Kaki	Poor joint stitch at bottom	-	-	01			
		Hole at armhole, back, shoulder	-	04	-			
		Oil stain at front	-	01	-			
		Asymmetrical shape at armhole	-	01	-			
		Dirty at front	-	-	01			
59 pcs	Black	Thick yarn at front	-	-	01			
		Slanted zipper at back	-	-	01			
		Hole at front	-	02	-			
		Needle cut hole at side seam, armhole	-	02	-			
		Broken stitch at bottom	-	01	-			
59 pcs	White	Asymmetrical shape at armhole	-	01	-			
		Uneven at strap width	-	01	01			
		Puckered at back	-	-	01			
		Mismatch at back yoke	-	-	01			
		Needle cut hole at armhole	-	02	-			
			Puckered at front	-	01	-		
			Hole at back	-	01	-		
			Uneven at stripe width, binding width	-	-	03		
			Pleat at back	-	-	01		
			Slanted zipper at back	-	-	01		
			Uncut thread at side seam	-	-	01		
Found				-	29	27		
Allowed				-	14	21		
Result				FAILED				

**Intertek**
**FINAL INSPECTION REPORT**
**El Corte Inglés**

 REPORT ID NO: **INS-80946**

4. Workmanship						
Style no	Sample Size	Color	Defect description	Critical	Major	Minor
T-46980	250PCS	NAVY	BROKEN STITCH	-	07	
			SPOT AT BACK	-	-	01
			DAMAGE	-	02	
			SIZE MISTAKE	-	01	
			CHALK MARK	-	-	01
			FIX YARN	-	-	01
			POOR IRON	-	-	01
			LESS ROLLING EFF	-	02	
			POOR NECK SHAPE	-	-	02
			LABLE MISTAKE	-	-	02
			* NEEDLE MARK	-	-	03
			SKIP STITCH	-	01	
			POCKET SHAPE POOR	-	-	02
			PRESSING MARK	-	-	02
			Found		13	15
			Allowed	-	10	14
			Result	"FAILED"		

PIR-CHINA-IT-FRI-656 R20

**TEX SERVICES LIMITED**

02 (Anjuman Rangs) Park Road, Baridhara, Dhaka- 1212, Bangladesh Tel: (88-02)8835935, Fax: (88-02)8835660

PRE-FINAL INSPECTION REPORT				FINAL I II III			PARTIAL / BALANCE QUANTITY		
DATE OF INSPECTION: 25.04.15				CUSTOMER: PRIMARK			AQL APPLIED: 0.2 MAJOR / 4.0 MINOR-LEVEL (11)		
SHIP MODE: BY-SEA				ORDER No: AP042390			QTY INSPECTED: 125		
PROD UNIT/ITY: MONDOL FAB				REF STYLE: P067LAN			CARTONS AVAILABLE: 20 / CHECKED: 02		
PO DEL DATE				DEPT: 207			CARTON DIMENSION: 430X20X120		
QTY ORDERED: 3100 pcs				DESCRIPTION: U/S PAGLAN			CTN Nos. CHECKED: SEE THE PACKING LIST		
SEASON: 02.02.15									
SAMPLE IN HAND: G. SERI									
CHECKED LIST				CORRECT		ACCEPTABLE		INCORRECT	
COLOUR	EXPECTED QTY	QTY AVAILABLE	% AVAILABLE	QTY CHECKED	MDA No.	PACKING LIST	✓	0	WEIGHT (FABRIC / GM)
BLUE	3100	3100	100%	125		HANDLE & SMELL	0	✓	LABELS (MAIN-SIZE-CARE)
						INSIDEGMT (STITCH, PKT BAG)	0	✓	TAG (PRICE-SIZE-COL)
						STITCH DENSITY	0	✓	BARCODES (STICKER-TAG-LABEL)
						MIN NECK STRETCH	0	✓	HANGER & SIZE RING
						BUTTONS, ZIPS, RIVETS	-	✓	POLYBAG (DIM, QUALITY, WARNING)
						PAPER PACKING/PLASTER	-	✓	GMT PACKAGING
						PRESENTATION & PRESSING	0	✓	ASSORTMENT & PACKING
						EMBROIDERY/PRINT/APPLIQUE	0	✓	BOX END LABEL & CTN MARKINGS
						COLOURS / SHADES	0	✓	CARTON DIMENSIONS QUALITY
						WASH	0	✓	CTN MAX WEIGHT (15.5KG)
CRITICAL DEFECTS: 1/50 pcs checked (ZERO ALLOWED)									
DEFECTS						MAJOR	MINOR	MEASUREMENT DISCREPANCIES (based on 3 pcs/size and at least one pc/size/colour)	
Needle Mark							02	SIZE.....	
Knitting defect						02			
Stitch poor tension							01		
Bottom Hem puckering						02		SIZE.....	
Open all collar							02		
Back tape run off stitch						01			
Pocket puckering							02	SIZE.....	
collar matching problem						02			
Size mistake						01			
Pocket shape very poor							01	SIZE.....	
Uncut thread									
Hole at Back Neck							02		
Poor Iron						01		SIZE.....	
fly yarn							02		
Print spot							01		
TOTAL NO. OF DEFECTIVE PCS						09	13	GENERAL 1/1	
TOTAL NO. ALLOWED						02	10	Within tolerance	
OVERALL DECISION AFTER INSPECTION: RELEASE / CONDITIONAL RELEASED / HOLD / REJECT									
COMMENTS: Order Reject. Found many defect. So, 100% Re-check all garments.									
GOLD SEAL APPRVD: YES / NO: YES									
TEST REPORT: PASS / FAIL: COMMENTS: PASS									
SIGN FOR TEX SERVICES: Hasan 25.04.15				TIME IN		TEX QC TEAM: DAS			
SIGN FOR SUPPLIER: Ziller				TIME OUT		INSPECTION TIME: 01:45 PM			

**TEX SERVICES LIMITED**

02 (Anjuman Rangs) Park Road, Baridhara, Dhaka- 1212, Bangladesh Tel: (88-02)8835935, Fax: (88-02)8835660

PRE - FINAL INSPECTION REPORT				FINAL: <u>I</u> II III		PARTIAL / BALANCE QUANTITY			
DATE OF INSPECTION: <u>14.06.15</u>		CUSTOMER: <u>PRIMARK</u>		AQL APPLIED: <u>2.5</u> MAJOR / <u>4.0</u> MINOR-LEVEL: <u>1.1</u>					
SHIP MODE: <u>BY-SEA</u>		ORDER No: <u>D144035</u>		QTY INSPECTED: <u>315</u> pcs					
PROD UNIT/FAB: <u>MONDOL FAB</u>		REF/STYLE: <u>2G RAGLAN</u>		CARTONS AVAILABLE: <u>208</u> CHECKED: <u>29</u>					
PO DEL DATE		DEPT: <u>2G</u>		CARTON DIMENSION: <u>420 X 300 X 120</u>					
QTY ORDERED: <u>6180</u>		DESCRIPTION: <u>2G US RAGLAN</u>		CTN Nos. CHECKED:					
SEASON: <u>05.10.15</u>				<u>SEE THE PACKING LIST</u>					
SAMPLE IN HAND: <u>G2 SEAL</u>									
CHECKED LIST				CORRECT		ACCEPTABLE		INCORRECT	
COLOUR	EXPECTED QTY	QTY AVAILABLE	% AVAILABLE	QTY CHECKED	MDA No.	PACKING LIST	✓	○	WEIGHT (FABRIC / GM)
<u>WHITE</u>	<u>6180</u>	<u>6180</u>	<u>100%</u>	<u>315</u>		HANDLE & SMELL	✓	○	LABELS (MAIN-SIZE-CARE)
<u>PINK</u>	<u>2500</u>	<u>2500</u>	<u>100%</u>			INSIDEGMT (STITCH, PKT BAG)	○	✓	TAG (PRICE-SIZE-COL)
						STITCH DENSITY	○	✓	BARCODES (STICKER-TAG-LABEL)
						MIN NECK STRETCH	○	✓	HANGER & SIZE RING
						BUTTONS, ZIPS, RIVETS	○	✓	POLYBAG (DIM, QUALITY, WARNING)
						PAPER PACKING/PLASTER	✓	○	GMT PACKAGING
						PRESENTATION & PRESSING	○	✓	ASSORTMENT & PACKING
						EMBROIDERY/PRINT/APPLIQUE	○	✓	BOX END LABEL & CTN MARKINGS
						COLOURS / SHADES	○	✓	CARTON DIMENSIONS QUALITY
						WASH	○	✓	CTN MAX WEIGHT (1/170 KG)
CRITICAL DEFECTS: <u>4/315</u> pcs checked (ZERO ALLOWED)									
DEFECTS				MAJOR	MINOR	MEASUREMENT DISCREPANCIES (based on 3 pcs/size and at least one pcs/size/colour)			
<u>Poor Neck Shape</u>						SIZE.....			
<u>Size mistake</u>				<u>01</u>					
<u>Poor pocket shape</u>					<u>03</u>				
<u>Dirty spot</u>					<u>02</u>	SIZE.....			
<u>Skip stitch</u>				<u>02</u>					
<u>Pressing mark</u>				<u>01</u>	<u>02</u>				
<u>Bottom hem puckering</u>					<u>02</u>	SIZE.....			
<u>Broken stitch</u>				<u>02</u>					
<u>Loose thread</u>					<u>02</u>				
<u>Dying spot</u>				<u>02</u>	<u>02</u>	SIZE.....			
<u>Placket up/down</u>					<u>02</u>				
<u>Hang tag size missing</u>				<u>02</u>					
<u>Needle Mark</u>					<u>01</u>	SIZE.....			
<u>Hole</u>				<u>03</u>	<u>01</u>				
<u>Body length is not ok</u>					<u>03</u>				
<u>Button mistake</u>				<u>02</u>	<u>02</u>	GENERAL			
<b>TOTAL NO. OF DEFECTIVE PCS</b>				<b>15</b>	<b>23</b>				
<b>TOTAL NO. ALLOWED</b>				<b>14</b>	<b>21</b>				
<b>OVERALL DECISION AFTER INSPECTION: RELEASE / CONDITIONAL RELEASED / HOLD / REJECT</b>									
COMMENTS <u>Order Reject</u> <u>100% Re-check all Finished goods</u>									
GOLD SEAL APPRVD: YES / NO.....									
TEST REPORT: PASS / FAIL: COMMENTS: <u>Pass</u>									
SIGN FOR TEX SERVICES: <u>Harun 14.06.15</u>				TIME IN		TEX QC TEAM: <u>DBS</u>			
SIGN FOR SUPPLIER: <u>Zillur</u>				TIME OUT		INSPECTION TIME: <u>11:30 AM</u>			

### TEX SERVICES LIMITED

12 (Anjuman Rangs) Park Road, Baridhara, Dhaka- 1212, Bangladesh Tel: (88-02)8835935, Fax: (88-02)8835660

PRE- FINAL INSPECTION REPORT		F A I L : ① II III	PARTIAL / BALANCE QUANTITY	
DATE OF INSPECTION: 09.06.15		CUSTOMER: PRIMARK		AQL APPLIED 2.5 MAJOR / 4.0 MINOR LEVEL ④
SHIP MODE: BY-SEA		ORDER No: A003700		QTY INSPECTED: 50 pcs
PROD UNIT / FY: MONDOL FAB		FAB / STYLE: 2G / PAGLAN		CARTONS AVAILABLE: 14 CHECKED /
PO DEL DATE		DEPT: 2G		CARTON DIMENSION: 4 TEX 390X170
QTY ORDERED: 420 pcs		DESCRIPTION: 2G/LD 4S RAGLAN		CTN Nos. CHECKED: SEE THE PACKING LIST
SEASON: 05.10.15		SAMPLE IN HAND: G-SEAL		

CHECKED LIST						CORRECT		ACCEPTABLE		INCORRECT	
COLOUR	EXPECTED QTY	QTY AVAILABLE	% AVAILABLE	QTY CHECKED	MDA No.	PACKING LIST	✓	○			
BLACK	420	420	100%	50		HANDLE & SMELL	○	✓	WEIGHT (FABRIC / GM)		
						INSIDGMT (STITCH. PKT BAG)	○	✓	LABELS (MAIN-SIZE-CARE)		
						STITCH DENSITY	○	✓	TAG (PRICE-SIZE-COL)		
						MIN NECK STRETCH	○	✓	BARCODES (STICKER-TAG-LABEL)		
						BUTTONS, ZIPS, RIVETS	○	✓	HANGER & SIZE RING		
						PAPER PACKING/PLASTER	○	✓	POLYBAG (DIM. QUALITY;WARNING)		
						PRESENTATION & PRESSING	○	✓	GMT PACKAGING		
						EMBROIDERY/PRINT/APPLIQUE	○	✓	ASSORTMENT & PACKING		
						COLOURS / SHADES	○	✓	BOX END LABEL & CTN MARKINGS		
						WASH	○	✓	CARTON DIMENSIONS QUALITY		
								✓	CTN MAX WEIGHT (43.8KG)		
						CRITICAL DEFECTS:	150	pcs checked (ZERO ALLOWED)			
<b>DEFECTS</b>						<b>MAJOR</b>	<b>MINOR</b>	<b>MEASUREMENT DISCREPANCIES</b> (based on 3 pcs/size and at least one pc/size/colour)			
Poor Neck Shape						01		SIZE.....			
Oil Spot							01				
Hole Missing level.						01	01				
Hole						02		SIZE.....			
Arm Hole up/down						01					
Printing Fault							01				
Broken stitch							02	SIZE.....			
								SIZE.....			
								SIZE.....			
								SIZE.....			
<b>TOTAL NO. OF DEFECTIVE PCS</b>						04	05	GENERAL % Within Tolerance			
<b>TOTAL NO. ALLOWED</b>						03	05				

**OVERALL DECISION AFTER INSPECTION: RELEASE / CONDITIONAL RELEASED / HOLD / REJECT**

COMMENTS: Order Reject  
Due found children safety issue  
So, 100% Re-check.

GOLD SEAL APPRVD: YES / NO.....

TEST REPORT: PASS / FAIL: COMMENTS: Pass

SIGN FOR TEX SERVICES: *Hasem 09.06.15* TIME IN: TIME OUT: TEXT QC TEAM: *Des* INSPECTION TIME: 02:00 PM

SIGN FOR SUPPLIER: *Emran*

### TEX SERVICES LIMITED

02- (Anjuman Rangs) Park Road, Baridhara, Dhaka- 1212, Bangladesh Tel: (88-02)8835935, Fax: (88-02)8835660

PRE - FINAL INSPECTION REPORT				FINAL: I II III			PARTIAL / BALANCE QUANTITY		
DATE OF INSPECTION: 10.02.15				CUSTOMER: PRIMARK			AQL APPLIED: 2.5 MAJOR / 0.40 MINOR-LEVEL		
SHIP MODE: BY-SEA				ORDER No: ACO-45902			QTY INSPECTED: 80 PCS		
PROD UNIT/FY: MONDOL FABRI				REF/STYLE: AT-90248			CARTONS AVAILABLE: 1 CHECKED:		
PO DEL DATE:				DEPT: 2G			CARTON DIMENSION: 420X304X120		
QTY ORDERED: 1100PCS				DESCRIPTION:			CTN Nos. CHECKED:		
SEASON: 2E NIGHT							SEE THE PACKING INOG		
SAMPLE IN HAND: G SEAL									
CHECKED LIST				CORRECT		ACCEPTABLE		INCORRECT	
COLOUR	EXPECTED QTY	QTY AVAILABLE	% AVAILABLE	QTY CHECKED	MDA No.				
PINK	1100PCS	1100PCS	100%	80PCS					
						PACKING LIST			
							HANDLE & SMELL		WEIGHT (FABRIC / GM)
							INSIDEGMT (STITCH, PKT BAG)		LABELS (MAIN-SIZE-CARE)
							STITCH DENSITY		TAG (PRICE-SIZE-COL)
							MIN NECK STRETCH		BARCODES (STICKER-TAG-LABEL)
							BUTTONS, ZIPS, RIVETS		HANGER & SIZE RING
							PAPER PACKING/PLASTER		POLYBAG (DIM, QUALITY, WARNING)
							PRESENTATION & PRESSING		GMT PACKAGING
							EMBROIDERY/PRINT/APPLIQUE		ASSORTMENT & PACKING
							COLOURS / SHADES		BOX END LABEL & CTN MARKINGS
							WASH		CARTON DIMENSIONS QUALITY
							CRITICAL DEFECTS:		CTN MAX WEIGHT (5.20 KG)
								150	pcs checked (ZERO ALLOWED)
DEFECTS				MAJOR	MINOR	MEASUREMENT DISCREPANCIES (based on 3 pcs/size and at least one pc/size/colour)			
print spot				-	02	SIZE.....			
Dying spot				02	-				
Hang tag size missing				01	-				
Sleeve tuck position not ok				02	-	SIZE.....			
Broken stitch				02	-				
Neck puckering				-	02				
Neck shape poor				-	02	SIZE.....			
Bottom hem puckering				-	01				
Less rolling Effect				-	01				
						SIZE.....			
						SIZE.....			
						GENERAL			
TOTAL NO. OF DEFECTIVE PCS				02	08				
TOTAL NO. ALLOWED				05	02				
OVERALL DECISION AFTER INSPECTION: RELEASE / CONDITIONAL RELEASED / HOLD / REJECT									
COMMENTS GOODS ARE RECHECK									
GOLD SEAL APPRVD: YES / NO									
TEST REPORT: PASS / FAIL COMMENTS:									
SIGN FOR TEX SERVICES					TIME IN 11:30 AM				
SIGN FOR SUPPLIER					TIME OUT 02:40 PM				
					INSPECTION TIME				

# OBS ORIENTAL BUYING SERVICES LIMITED

## GRUPPO COIN

BANGLADESH LIAISON OFFICE ATLANTA TRADE CENTER, HOUSE #1 (8TH & 9TH FLOOR)  
 ROAD # 1A, SECTOR # 4, UTTARA, DHAKA-1230, TEL: +88-02-8354531, +88-02-8804632

### INSPECTION REPORT

DEPARTMENT GA FACTORY MICRO TEX DATE 24/04/15  
 STYLE NO RTH-356 ORDER QTY 9000 PCS IN-LINE  % SEWING  
 DESCRIPTION PLD INSP. CARTON NO. \_\_\_\_\_ FINAL  % PACKED  
 BUYER LUCHELOTTI INSP. QTY 200 PCS INSP. COLOR/SIZES 312-00-AS  
 DIVISIONE: OVERSE/WARM (ITALY, CHINA), COIN, COSI UPIM, IANA, COLD SHIPPING QTY 5385 PCS

#### ACCESSORIES:

MAIN LABEL  THREAD  ZIPPER  HANGER  TISSUE PAPER   
 SIZE LABEL  LINING  BUTTON  HANG TAG  OTHERS \_\_\_\_\_  
 CARE LABEL  EMBROIDERY  POLYBAG  BARCODE

SHIPPING MARK  M. OF EXPORT CTN 27X19X35 G.W. \_\_\_\_\_ KGS. N.W. \_\_\_\_\_ KGS

INNER PACKING FLAT/HANGER \_\_\_\_\_ PCS/INNER BOX/BIG POLYBAG \_\_\_\_\_ IN SOLID/ASSORTED COL IN SOLID/ASSORTED SIZES

OUTER PACKING \_\_\_\_\_ PRE-PACKS IN EXPORT CTN. \_\_\_\_\_ IN SOLID/ASSORTED COL IN SOLID/ASSORTED SIZES

DESCRIPTION OF DEFECTS	MAJOR	MINOR
* FABRIC REJECT HOLE	01	0
* TOP BUTTON POSITION UNEVEN	03	02
* STAINED PLACKET	04	03
* SILK SENSITIVE FABRIC UNEVEN	01	0
* TRIPIT SIDED AT FRONT	04	0
* ALL TAB BODY FABRIC LOOSE/POOR	05	03
* TWISTING BODY	05	03
* TOP PLACKET PUCKERING	04	02
* FRONT MARKS	03	02

COMMENTS: GOODS RECHECK DOE TO THE  
 SIZE MEASUREMENT PROBLEM, PLS 100% RECHECK.  
 WORKMANSHIP 3 COLOUR  
 COLOR/PRINTING \_\_\_\_\_  
 PACKING \_\_\_\_\_  
 OTHERS WORKMANSHIP OUT OF TOLERABLE

UNIT PRICE (PCS/PK/SET)	\$	€
WEIGHT/NO OF SHIPMENT	FOB/	CFR/
GSP/AJ/CO		
LAB TEST REPORT	OK	NOT OK



**OBS** ORIENTAL BUYING SERVICES LIMITED  
GRUPPO COIN

BANGLADESH LIAISON OFFICE: ATLANTA TRADE CENTER, HOUSE # 1 (8TH & 9TH FLOOR)  
ROAD # 1/A, SECTOR # 4, UTTARA, DHAKA-1230, TEL: +88-02-8954531, +88-02-8954532

INSPECTION REPORT

DEPARTMENT GA FACTORY Moor TEX DATE 24/04/15  
 STYLE NO BTH-356 ORDER QTY 9000 PCS IN-LINE  % SEWING  
 DESCRIPTION POL INSP. CARTON NO ..... FINAL  % PACKED  
 BUYER MICHELE COIN INSP. QTY 200 PCS INSP. COLOR/SIZES 3 COLOURS  
 DIVISION: OVERSE/WARM (ITALY, CHINA), COIN, COSI UPIM, IANA, COLD SHIPPING QTY 2388 PCS

ACCESSORIES: TOTAL CARTONS .....

MAIN LABEL  THREAD  ZIPPER  HANGER  TISSUE PAPER   
 SIZE LABEL  LINING  BUTTON  HANG TAG  OTHERS .....  
 CARE LABEL  EMBROIDERY  POLYBAG  BARCODE   
 SHIPPING MARK  M. OF EXPORT CTN 21x79x35 G.W ..... KGS. N.W ..... KGS  
 INNER PACKING FLAT/HANGER ..... PCS/INNER BOX/BIG POLYBAG  IN SOLID/ASSORTED COL IN SOLID/ASSORTED SIZES  
 OUTER PACKING ..... PRE-PACKS IN EXPORT CTN.  IN SOLID/ASSORTED COL IN SOLID/ASSORTED SIZES

DESCRIPTION OF DEFECTS	MAJOR	MINOR
* FABRIC REJECT HOLES	01	0
* TOP BUTTON POSITION UNEXCT.	03	02
* CLAMPED PLACKET	04	03
* SIDE SEAM SHAPE UNEXCT.	01	0
* WRH PIT CHOC AT FRONT	04	0
* SLL TAB BODY FABRIC LOOSE/PUCKERING	05	03
* TWISTING BODY	05	03
* TOP PLACKET PUCKERING	04	02
* IRON MARKS	03	02

COMMENTS: GOODS REJECTS DUE TO THE  
 SIZE MEASUREMENT PROBLEM, PLS 100% RECHECK,  
 WORKMANSHIP 3 COLOUR,  
 COLOR/PRINTING .....  
 PACKING .....  
 OTHERS WORKMANSHIP OUT OF TOLERANCE,

UNIT PRICE (PCS/PK/SET)	\$	€
FREIGHT/MODE OF SHIPMENT	FOB/	\$FR/
GSPA/CO		
LAB TEST REPORT	OK	NOT OK





ICA Global  
Sourcing Ltd



### Final Inspection report Textile

AQL, critical defect: Not allowed / Major defect: 2,5 / Minor defect: 4,0

Sample size based on PO for ICA/RIMI. Sample size based on Article for Hemtex.

Report Number	15-0149BD	Inspection Date	26.05.2014
Inspection Type	FRI	Article Number	M-BA-211 ( 583294, 583295, 583296, 583505, 583507 )
Inspected By	Ataul	Order Number	303150/ 95820
Manufacturer	Mondol Fabrics	Order Quantity	2400
Description	MENS V-NECK TOP	Inspection Quantity	2400 Pcs
Inspection Level	General Level II	Sample Size	125 Pcs

	Critical	Major	Minor
Number of defects allowed:	0	7	10
Total defects found:	0	15	29

#### Barcode scanning check

Consumer/ Product Barcode:	ok
Inner box	N/A
Retail Barcode	Ok

Export Carton barcode:	ok
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#### Consumer Packaging

Dimension:	
Quantity / Set:	N/A

#### Export Carton

Dimension:	600x400x100 - 200mm
GW / NW:	3.60 - 9.60 kgs
Quantity / Carton:	20 - 40pcs

#### Remarks:

1) Found 4cm empty space in 100% of inspection carton of "M" size & 3cm empty space in 100% of inspection carton of "XL" size.	
2) Found shade variation in piece to piece checking in 100% inspected goods ( grey scale 4).	
3) Found neck rib width 5mm instead of 8mm in some pieces of M size.	
Sealed sample exists (fill in "Yes" or "No", if "No" please write remark on how product is compared)	Yes

#### Inspection Result (please note: NO shipment release even if pass):

PASS	
FAIL	Fail due to AQL found beyond limit
PENDING	

Ataul	Shahadat
IGS Inspector signature	Supplier Signature

Packaging		
<b>Shipping carton</b>		
1	Wrong or damaged packaging which affect the degree of protection	Remark and actions taken
2	Barcode failure (covered by adhesive tape or strapping band, wrinkled, will not scan,	Remark and actions taken
3	Shipping label failure (wrong information, missing information)	Remark and actions taken
4	Package material has obvious water marks	Remark and actions taken
5	Others:	Remark and actions taken
<b>DFP / Retail unit</b>		
6	Wrong or damaged packaging which affect the degree of protection	Remark and actions taken
7	Barcode failure (covered by adhesive tape or strapping band, wrinkled, will not scan, missing)	Remark and actions taken
8	Shipping label failure (wrong information, missing information)	Remark and actions taken
9	Package material is damp	Remark and actions taken
10	Others:	Remark and actions taken

11	Measurements	W	H	L
	Measurements of DFP according to PO			
	Actual measurements of DFP			

#### General Inspection Findings

Item	Defect Description	Classification	Critical	Major	Minor	Remark
<b>KFP / Sales unit</b>						
12	Wrong or damaged packaging which affect the degree of protection	Major/Minor	0	0	0	
13	Hang tag missing (damaged, wrong, missing, poor printing)	Major	0	0	0	
14	Label failure (damaged, wrong, missing, poor printing)	Major	0	0	0	
15	Label failure (not scannable, alignment)	Major	0	0	0	
16	Missing or wrong instructions manual (where relevant)	Major	0	0	0	
17	Polybag has no SPI symbol (recycle)	Minor	0	0	0	
18	Packaging has no "Importer Information" in Swedish	Major	0	0	0*	
19	Packaging does not match sealed packaging sample or the description of the packaging in	Major	0	0	0	
20	Package material is damp	Major	0	0	0	

Item	Defect Description	Classification	Critical	Major	Minor	Remark
<b>Product Safety</b>						
21	Long cords or drawstrings on children	Critical	0	0	0	
22	Small parts, including buttons, will easily come loose on children garments (ONLY size 104 and smaller)	Critical	0	0	0	
23	No pull force test record	Critical	0	0	0	
24	No needle detection record for nightwear, underwear, swimwear, childrens garments, bedlinnen	Critical	0	0	0	
25	Sharp edges and sharp points	Critical	0	0	0	
26	Missing Broken needle record	Critical	0	0	0	
<b>Component/Accessories</b>						
27	Zipper malfunction	Major	0	0	0	
28	Button malfunction	Major	0	0	0	
29	Functional component malfunction	Major	0	0	0	
30	Wrong sewing thread (not DTM)	Major	0	0	0	
31	Component missing	Major	0	0	0	
32	Splinters or burrs (potential sharp point / edge)	Major	0	0	0	
33	Rust / corrosion on any metal components.	Major	0	0	0	
34	Marking does not match specification	Major	0	0	0	
<b>Fabric</b>						
35	Wet or damp	Major	0	0	0	
36	Abnormal odors	Major	0	0	0	
37	Infestation of insects	Critical	0	0	0	
38	Weaving / knitting fault	Major/Minor	0	0	0	
39	Holes (face/back)	Major/Minor	0	0	0	
40	Foreign yarn and slub	Major/Minor	0	0	2	
41	Neps	Major/Minor	0	0	0	
42	Mispick, double pick, uneven yarn	Major/Minor	0	0	0	
43	Knot	Major/Minor	0	0	0	
44	Flocking	Major/Minor	0	0	0	
45	Stains, mildew, Spots (oil and other dirt)	Major/Minor	0	0	0	
46	Printing faults incl wrong print direction, bad colour matching, missprint or dye spots	Major/Minor	0	0	0	
47	Washing defects	Major/Minor	0	0	0	
48	Embroidery defects	Major/Minor	0	0	0	
49	Dying faults	Major/Minor	0	0	0	
50	Fabric strength (easily tear apart)	Major/Minor	0	0	0	
51	Detachment of coating, dents, scratches, tears, holes	Major/Minor	0	0	0	
52	Harsh handfeel, less luster	Major/Minor	0	0	0	
53	Fabric not cut according to grain line	Major/Minor	0	0	0	
54	weight/ construction not within tolerance?	Major/Minor	0	0	0	

Item	Defect Description	Classification	Critical	Major	Minor	Remark
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**Product Appearance/Workmanship**

Item	Defect Description	Classification	Critical	Major	Minor	Remark
55	Product does not visibly conform to sealed	Major/Minor	0	0	0	
56	Wrong measurements with referens to Size Chart in Inquiry.	Major/Minor	0	0	0	
57	Wrong pattern matching	Major/Minor	0	0	0	
58	Wrong match repeat (curtains)	Major/Minor	0	0	0	
59	Pile not in same/ correct direction	Major/Minor	0	0	0	
60	Product colour smear	Major/Minor	0	0	0	
61	Product damage / Deformation	Major/Minor	0	0	0	
62	Shape not according to specification	Major/Minor	0	0	0	
63	Unsymmetrical positioned pockets	Major/Minor	0	0	0	
64	Sewing defect	Major/Minor	0	0	0	
65	Stitch faults	Major/Minor	0	0	0	
66	Wrong stitching length/ tension	Major/Minor	0	0	0	
67	Broken/ missing stitches, open seams	Major/Minor	0	0	0	
68	Puckering / gathering	Major/Minor	0	0	2	
69	Uneven / not straight hem	Major/Minor	0	0	0	
70	Raw edges /Un-finished seam	Major/Minor	0	1	0	
71	Seam slippage	Major/Minor	0	0	0	
72	Outside untrimmed threads	Major/Minor	0	0	2	
73	Inside untrimmed threads	Critical/Majo	0	0	0	
74	Loose threads	Major/Minor	0	0	0	
75	Non-conformed color inconsistency within product	Major/Minor	0	0	0	
76	Uneven filling too much/ too little filling	Major/Minor	0	0	0	
77	Pillows: fillingpower not correct	Major/Minor	0	0	0	
78	Poor ironing/ pressing marks/cutting mark(edge)	Major/Minor	0	0	0	

79	Air humidity inside DFP / Retail unit (measured with testo 625)					67.8%
80	Air temperature inside DFP / Retail unit (measured with					27.6°C

81	Uneven bottom hem		0	6	13	
82	Poor neck shape		0	5	5	
83	Print off center		0	1	1	
84	Uneven side seam		0	0	2	
85	skipped stitch		0	2	0	

### 3.2 Data Analysis:

Defects type	Major defect	Minor defect	Weight	Section wise%	Total%
<b>Fabric section</b>					
Hole	16×3=48	8×1=8	48+8=56	81.16%	13.24%
Needle mark		6×1=6	6	8.7%	
Knitting defect	2×3=6		6	8.7%	
Fly yarn		3×1=1	1	1.44%	
			Total =69	Total= 100%	
<b>Sewing section</b>					
Broken stitch	22×3=66	5×1=5	66+5=71	21.0%	64.87%
puckering	12×3=36	11×1=11	36+11=47	13.90%	
Neck shape poor	7×3=21	10×1=10	21+10=31	9.17%	
Stripe variation	5×3=15	10×1=10	15+10=25	7.34%	
Uncut thread	2×3=6	14×1=14	6+14= 20	5.92%	
Skip stitch	6×3=18		18	5.33%	
Label mistake	3×3=9	3×1=3	9+3=12	3.55%	
Back tape run off stitch	3×3=9		9	2.67%	
Size mistake	3×3=9		9	2.67%	
Body length not ok	2×3=6	3×1=3	6+3=9	2.67%	
Bottom hem uneven	2×3=6	2×1=2	6+2=8	2.37%	
Button up down	2×3=6	2×1=2	6+2=8	2.37%	
Button missing	2×3=6	2×1=2	6+2=8	2.37%	
Shade problem	2×3=6	2×1=2	6+2=8	2.37%	
Stitch poor tension	2×3=6	1×1=1	6+1=7	2.07%	
Arm hole Up down	1×3=3	3×1=3	3+3=6	1.78%	
Pocket shape very poor		6×1=6	6	1.78%	
Without button	1×3=3	2×1=2	3+2=5	1.50%	
Raw edge	1×3=3	1×1=1	3+1=4	1.18%	
Rolling over at neck	1×3=3	1×1=1	3+1=4	1.18%	
Poor shape		4×1=4	4	1.18%	
Uneven width at placket		3×1=3	3	0.89%	
Collar matching	1×3=3		3	0.89%	

Less rolling effect		$3 \times 1 = 9$	3	0.89%	
Slanted placket	$1 \times 3 = 3$		3	0.89%	
Open at collar		$2 \times 1 = 2$	2	0.59%	
Slanted zipper at back		$2 \times 1 = 2$	2	0.59%	
Mismatch at back yoke		$2 \times 1 = 2$	2	0.59%	
Chalk Mark		$1 \times 1 = 1$	1	0.30%	
			Total=338	Total=100%	
<b>Finishing section</b>					
Dirty spot	$8 \times 3 = 24$	$9 \times 1 = 9$	$24 + 9 = 33$	33.66%	18.82%
Oil spot	$4 \times 3 = 12$	$7 \times 1 = 7$	$12 + 7 = 19$	19.38%	
Hang tag missing	$6 \times 3 = 18$		18	18.37%	
Pressing mark	$4 \times 3 = 12$	$3 \times 1 = 3$	$12 + 3 = 15$	15.30%	
Poor iron	$1 \times 3 = 3$	$4 \times 1 = 4$	$3 + 4 = 7$	7.11%	
Gum mark at placket	$1 \times 3 = 3$	$2 \times 1 = 2$	$3 + 2 = 5$	5.10%	
Poly bag problems		$1 \times 1 = 1$	1	1.02%	
			Total =98	Total=100%	
<b>Miscellaneous section</b>					
Printing spot	$1 \times 3 = 3$	$6 \times 1 = 6$	$3 + 6 = 9$	56.25%	3.07%
Embroidery defect	$2 \times 3 = 6$		6	37.50%	
Printing faults		$1 \times 1 = 1$	1	6.25%	
			Total-16	Total=100%	
			In Total - 521		Total 100%

#### 4. Discussion of result:

We have collected 13 Final inspection report from **Montex Fabrics Ltd. (Mondol Group)**. Then we analyze it and found many fault from different section.

We found 13.24% fault in Fabric section fault, 64.87% sewing section fault, 18.82% finishing section fault and 3.07% miscellaneous. So we saw that the percentage of sewing fault is more than other section.. Finishing fault is removable fault.

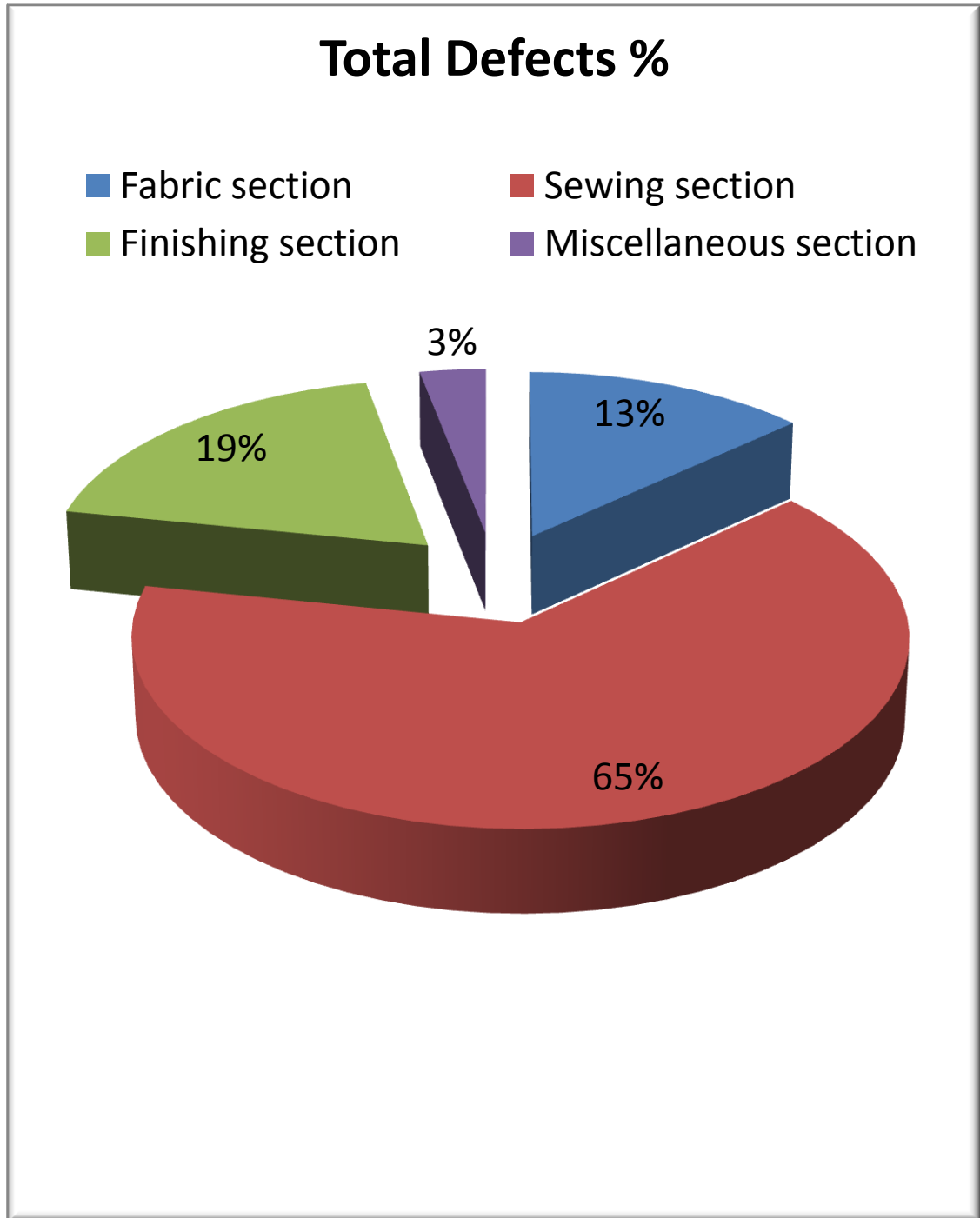
The major fabric faults are Hole, Needle mark and Knitting defect. The major sewing faults are Broken stitch, puckering, Neck shape poor, Skip stitch, Uncut thread etc. The major finishing faults are Hang tag missing, Pressing mark, Poly bag problems, Dirty spot, Oil spot etc. The major fabric faults is Printing spot.

So we can say that maximum fault which found in final random inspection, occur for worker irresponsibility.

we are try to discuse about the Causes of the faults and how can we Remedies this type of faults.

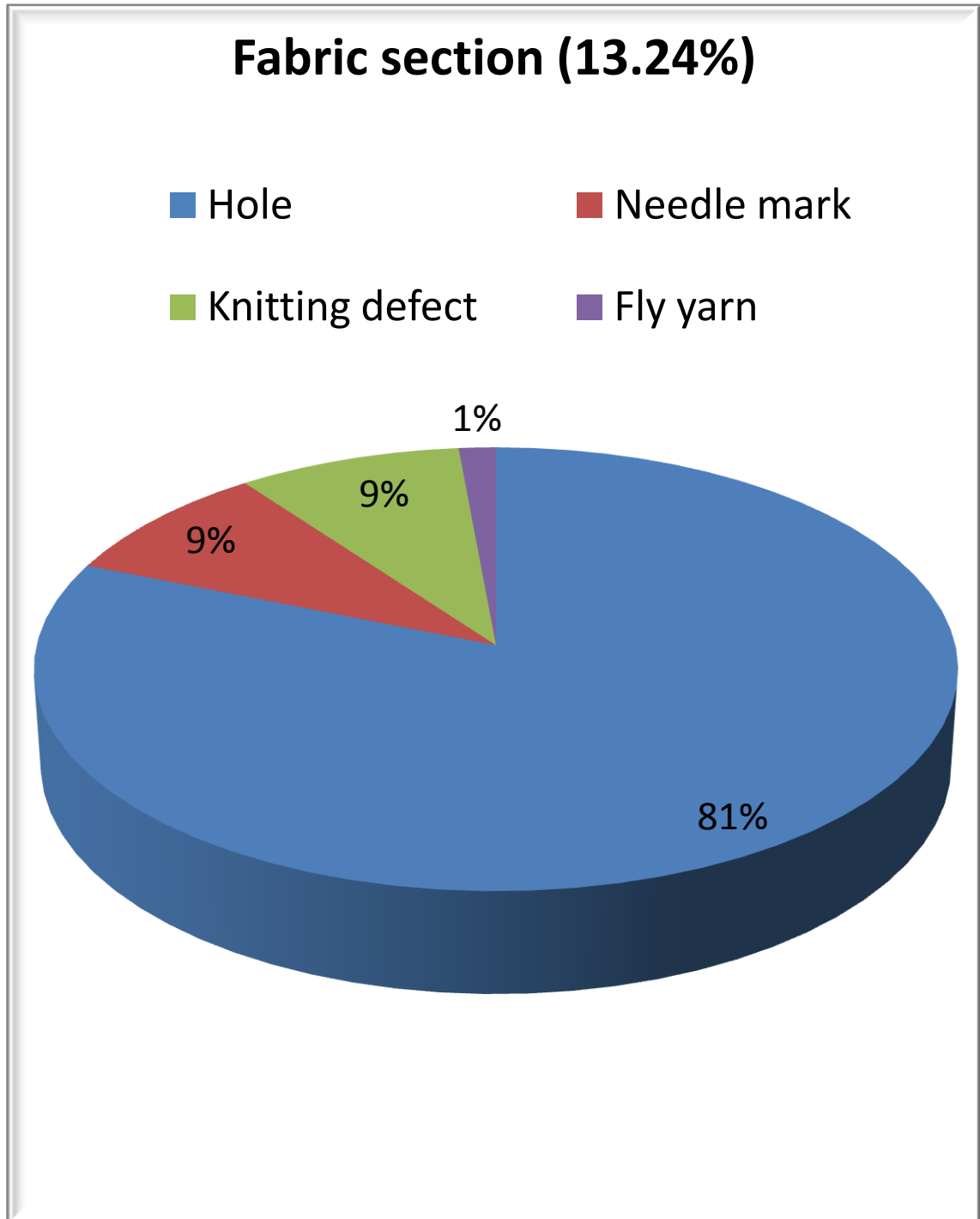
In Bangladeshi garment industry, the male or female who join as a worker, their first job is cutting the extra sewing thread. Then they operate the sewing m/c. Garments industries Administration do not give any training to the worker.

#### 4.1 Percentage of defects of different section:

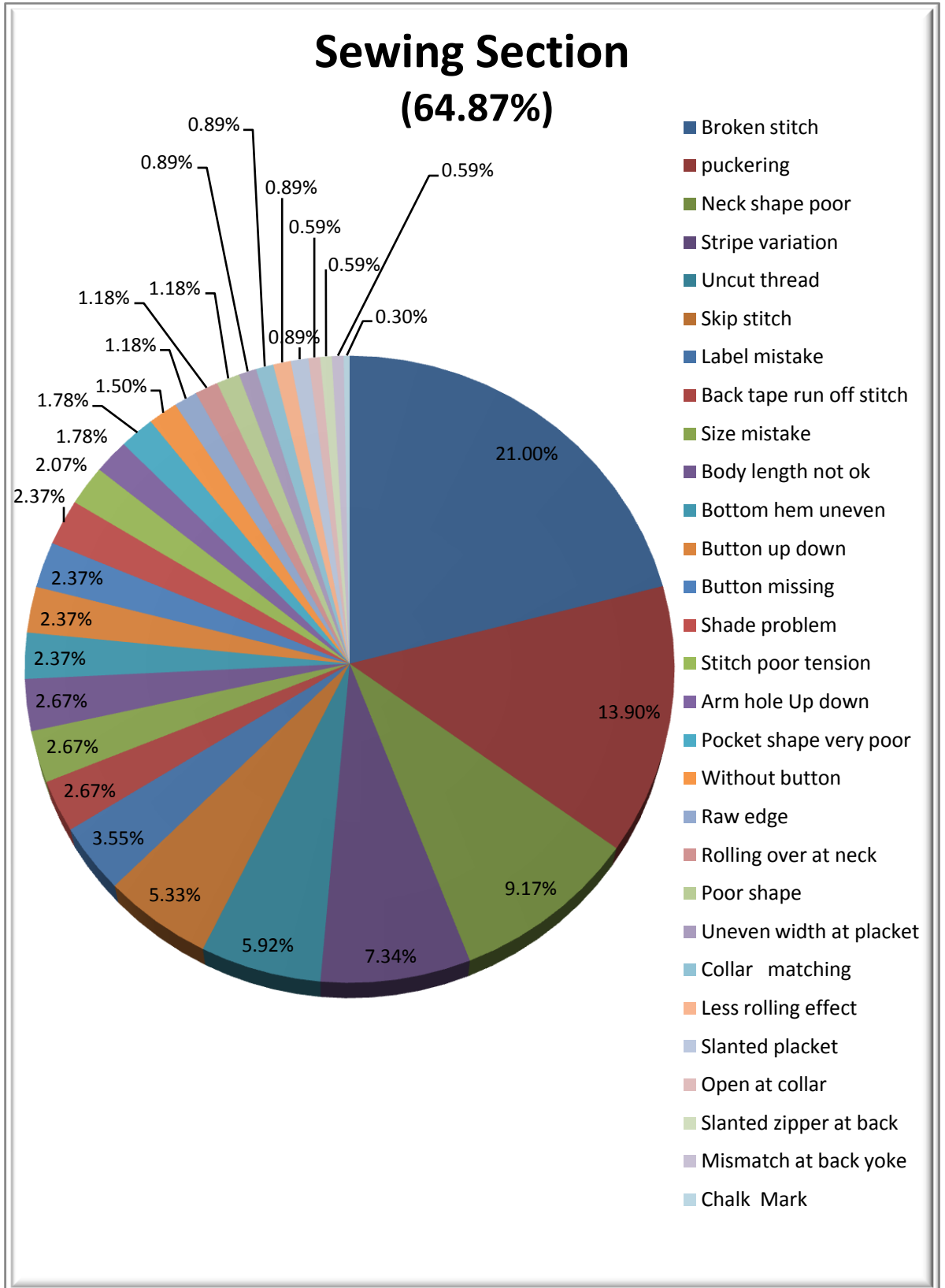




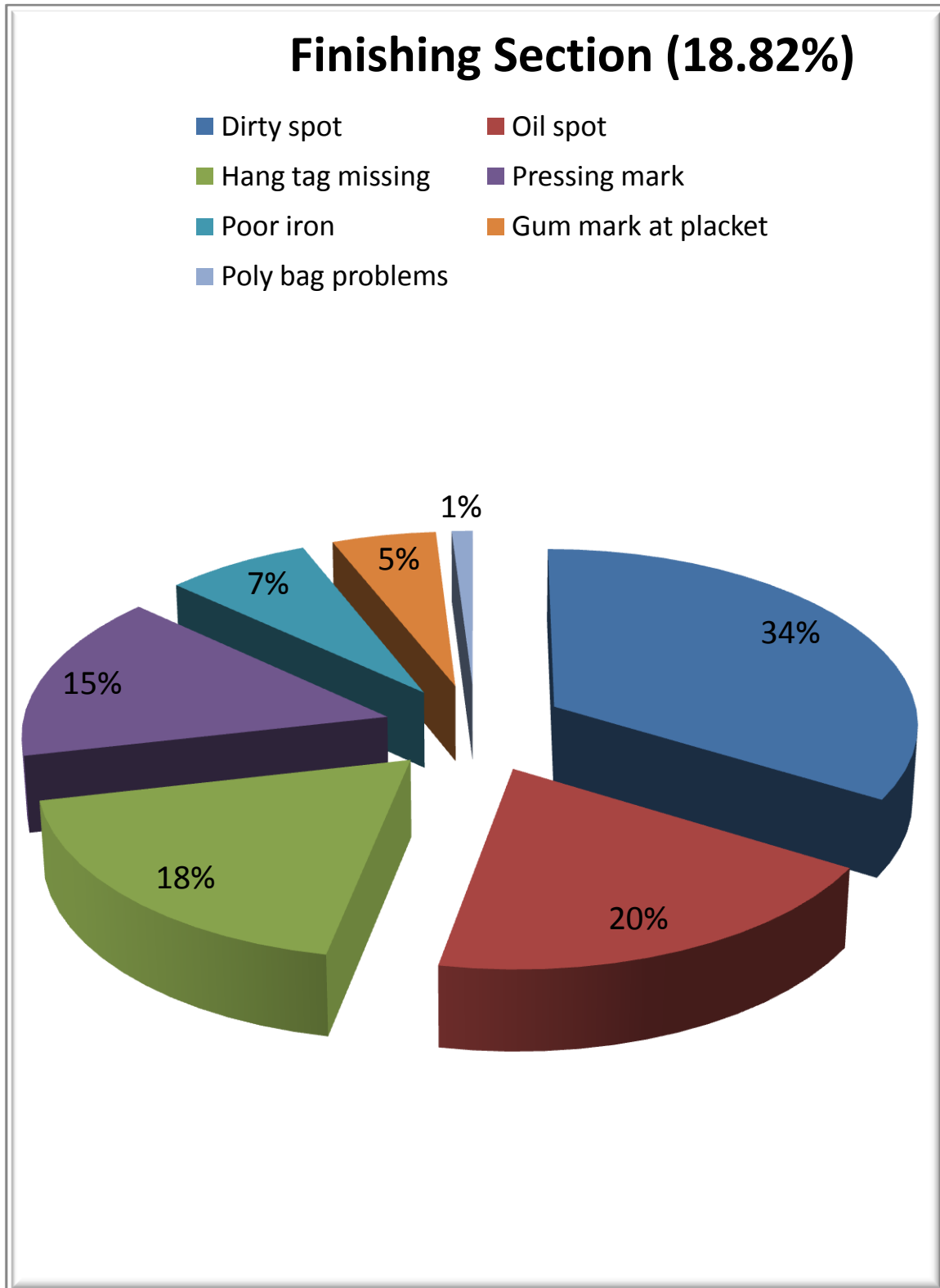
4.1.1 Percentage of defects of fabric section:



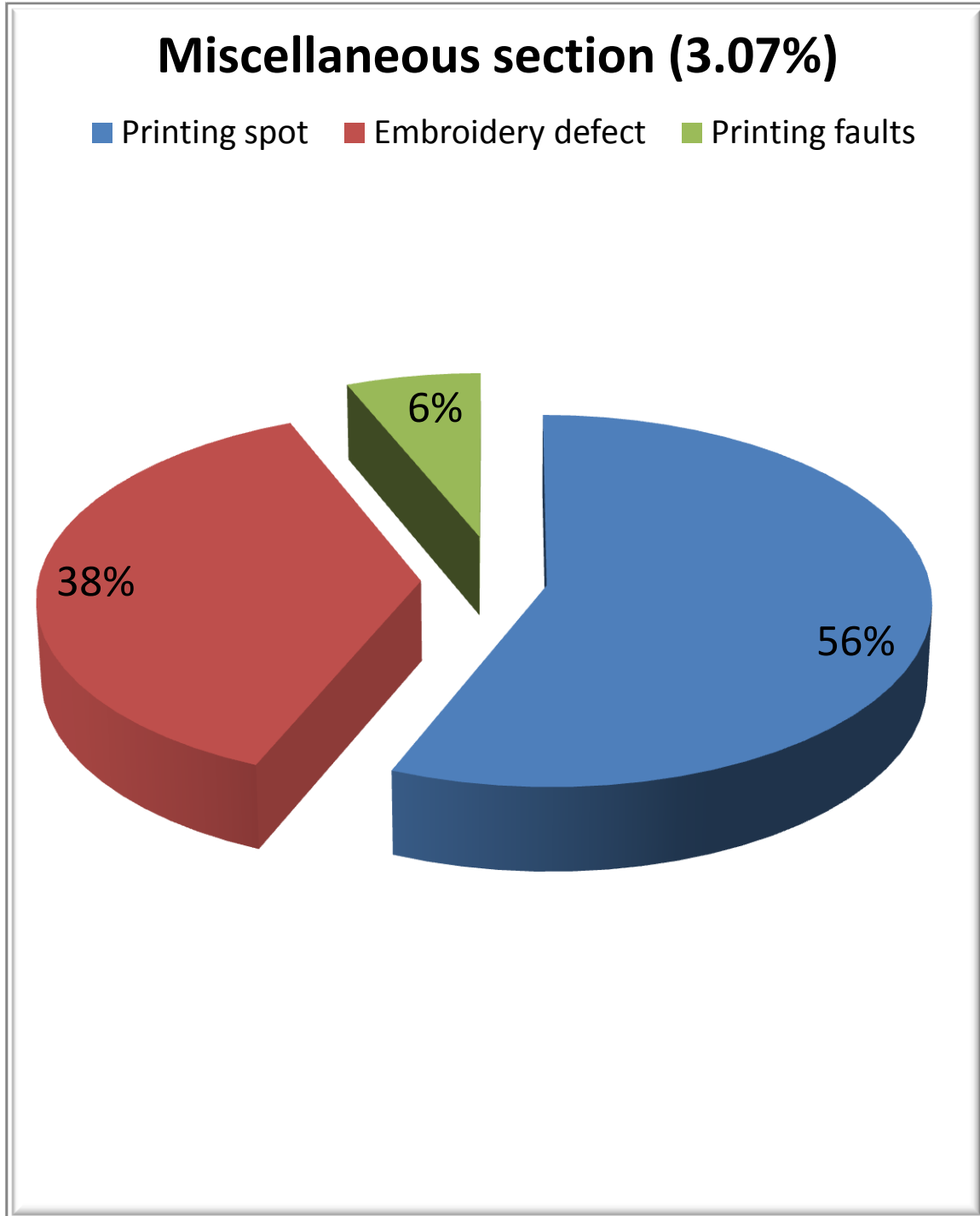
4.1.2 Percentage of defects of Sewing Section:



4.1.3 Percentage of defects of Finishing Section:



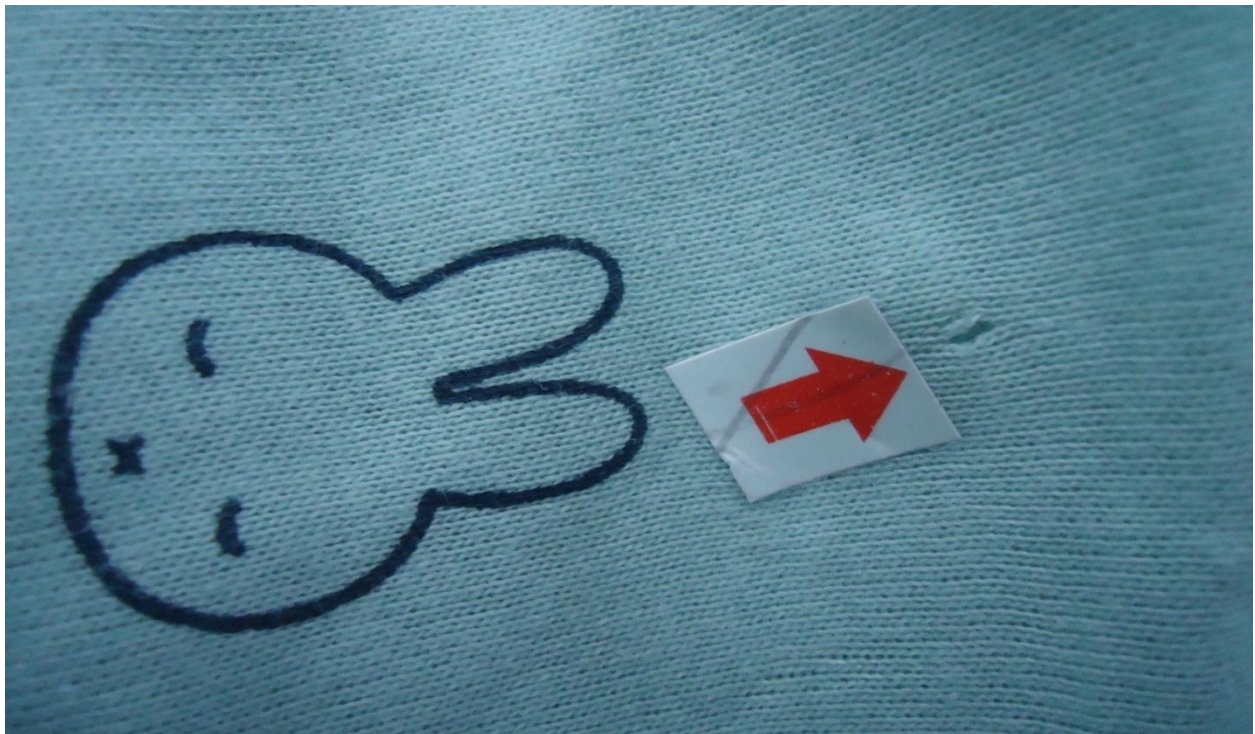
4.1.4 Percentage of defects of Miscellaneous Section:



## 4.2 Causes of Fabric defect (13.24%) which we found in report and their remedies:

### 4.2.1 Hole: (81.16%)

Drop Stitches are randomly appearing small or big holes of the same or different size which appear as defects in the Knitted fabrics.



#### Causes:

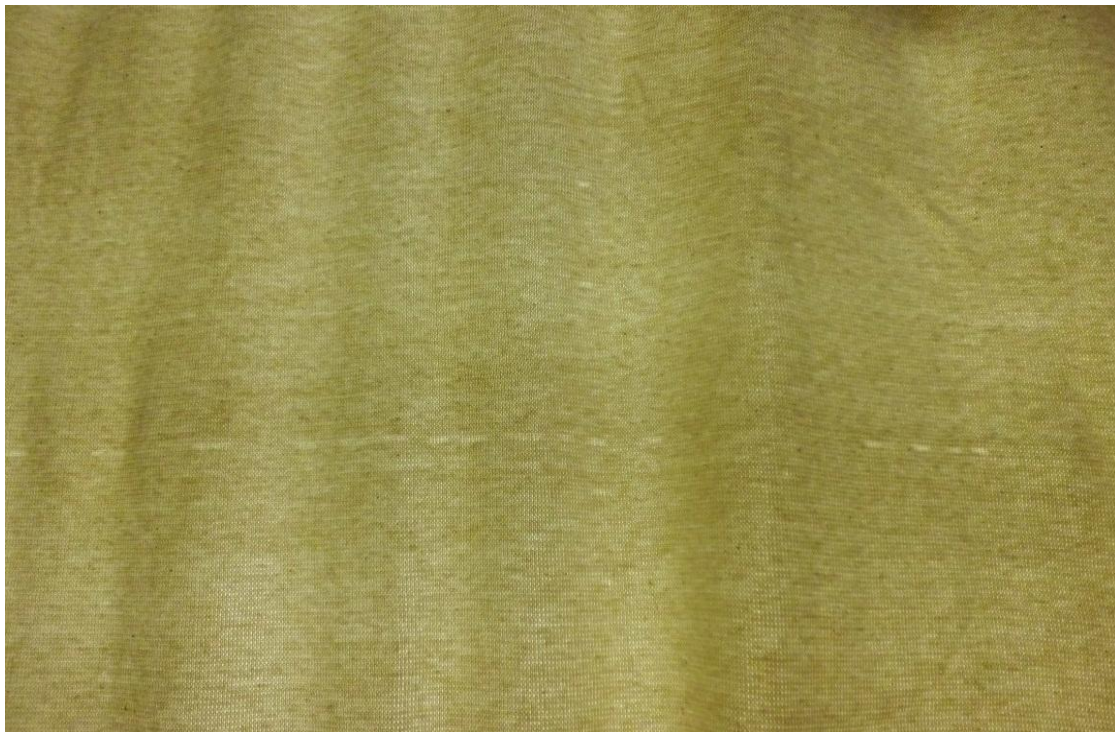
- ❑ High Yarn Tension
- ❑ Yarn Overfeed or Underfeed
- ❑ High Fabric Take Down Tension
- ❑ Defects like Slubs, Neps, and Knots etc.
- ❑ Incorrect gap between the Dial & Cylinder rings.

### Remedies:

- Ensure uniform yarn tension on all the feeders with a Tension Meter.
- Rate of yarn feed should be strictly regulated as per the required Stitch Length.
- The fabric tube should be just like a fully inflated balloon, not too tight or too slack.
- The yarn being used should have no imperfections like; Slubs, Neps & big knots etc
- The gap between the Cylinder & the Dial should be correctly adjusted as per the knitted loop size.

#### 4.2.2 Needle break/Broken Needles/Laddering: (8.7%)

Defects caused by the broken needles show prominently as vertical lines parallel the Wales. There are no loops formed in the Wale which has a broken needle.



**Causes:**

- High yarn tension
- Bad setting of the yarn feeders
- Old & worn out needle set
- Cylinder grooves are too tight restricting needle movement
- Breakage of hook or butt in needle

**Remedies:**

- Ensure uniform & the right yarn tension on all the feeder
- Keep the recommended gap between the yarn feeder & the needle
- Periodically change the complete set of needles
- Remove fly or blockage from groove
- Replace defective needle

### 4.3 Causes of sewing defect (64.87%) which we found in report and their remedies:

#### 4.3.1 Broken stitch: (21.0%)

Where the thread is being broken where one seam crosses another seam resulting in stitch failure then that stitch called the broken stitch.



#### Causes:

- ❑ Misaligned off winding from thread package.
- ❑ Trapping at package base.
- ❑ Thread trapped at thread guide.
- ❑ Snarling before tension disc.
- ❑ Excessive tension.
- ❑ Broken check spring.



- ❑ Sharp edges on throat plate, hook point, needle guard, bobbin case, needle groove or eye.
- ❑ Thread fraying at needle.
- ❑ Excessive needle heat; groove or eye blocked with melted fabric.
- ❑ Hook overheating.
- ❑ Poor quality thread.

### **Remedies:**

- ❑ Ensure that the overhead guide is directly above cop stand pin, at 2½ times the height of the thread package. Use a foam pad to prevent package tilting.
- ❑ Reduce the thread stand height to prevent vibration and spillage. Use a foam pad to prevent trapping after spillage.
- ❑ Can occur after thread breaks. Rethread correctly.
- ❑ Increase the wraps on pre-tension thread guides and reduce disc tension. Ensure discs are smooth.
- ❑ Use a stronger thread or adjust tension.
- ❑ Replace and adjust.
- ❑ Polish rough edges and replace if necessary. Replace the needle being used with a higher quality needle.
- ❑ Use finer thread or coarser needle, as appropriate.
- ❑ Improve the fabric finish. Change to a better needle, style and finish. Apply needle lubricant via thread. Use a needle cooler.
- ❑ Ensure adequate oil supply. Check the needle to hook clearance.
- ❑ Change to a correctly finished thread of better quality.

#### 4.3.2 Puckering: (13.90%)



#### Causes:

- ❖ Variable differential fabric feed.
- ❖ High thread tension.
- ❖ Incorrect thread balance.
- ❖ Improper thread type.

#### Remedies:

- ❖ Improve the fabric feed mechanism. Replace worn out feed dogs. Reduce the maximum sewing speed.
- ❖ Keep the bobbin tension as low as possible and set the needle thread tension accordingly.
- ❖ Ensure proper balance between the top and bottom thread.
- ❖ Use threads with controlled elongation. Properly maintain tension guides.

#### 4.3.3 Neck Shape poor: (9.17%)



#### **Causes:**

- Improper marking
- Incorrect folding before hem sewing
- Improper quality check

#### **Remedies:**

- Proper marking
- Correct folding before hem sewing
- Done this operation with skilled operator
- Proper quality check

#### 4.3.4 Stripe variation : (7.34%)

When back part and front part stripe are not matching then it's called the stripe variation. This Type of defect specially occurs the pocket matching and sleeve and yoke matching in the shirt and other items. Stripe variation means not matching stripe one portion to another.



#### Cause:

- ❑ Improper spreading the fabric in cutting table.
- ❑ Cutting machine problem.
- ❑ Marker not making according to the fabric stripe.
- ❑ Operator lack of concentration.
- ❑ Numbering mistake.

#### Remedies:

- ❑ Before make marker must be follow the fabric stripe.
- ❑ High efficient operator use.
- ❑ Properly distributed different size and parts.
- ❑ When numbering must be properly maintain direction.
- ❑ Before cutting must be check machine.

#### 4.3.5 Uncut thread: (5.92%)



#### Cause:

- ❑ Poor machine efficiency.
- ❑ Bobbin & needle problem.
- ❑ Operator lack of concentration.
- ❑ Thread tension.

#### Remedies:

- ❑ Machine must be check before machine start.
- ❑ All times lubricant oil used in the machine.
- ❑ Efficient operator used.
- ❑ Helper must be check output garments stitch.
- ❑ Good quality thread used.

#### 4.3.6 Skipped Stitches: (5.33%)



##### **Causes:**

- Hook, looped or needle failing to enter thread loops at the correct time.
- Thread loop failure caused by incorrect needle size / style for thread size / type
- Thread loop failure due to incorrect setting of thread control mechanism causing thread loop starvation.
- Flagging of fabric due to poor presser foot control or too large a throat plate hole.
- Needle deflections or bent needle.
- Incorrect sewing tension in the needle or under threads.
- Poor thread loop formation.

##### **Remedies:**

- Check machine clearances and timings. Check if the needle is inserted and aligned correctly. Use a needle with a deeper scarf.
- Change needle size / style.
- Reset to standard and check loop formation with a strobe.
- Re-adjust the presser foot pressure. Change the throat plate to match the needle.
- Use a reinforced needle, reset the needle guard and replace the needle.
- Re-adjust the tensions.
- Check with a strobe. Change to superior spun polyester or filament based core spun threads.

#### 4.3.7 Label Mistake: (3.55%)

This type of defect occurs when the size and care label are not attached in the correct position by the following direction. When operators do not properly adjust the label in the cloth, it is called the size and care label mistake or defect.



#### Cause:

- ❖ Operator lack of concentration.
- ❖ Improper label uses.
- ❖ Sewing machine problem.
- ❖ Labels are not properly tag.
- ❖ Thread breakage.

#### Remedies:

- ❖ Efficient operator uses.
- ❖ Good strength threads uses.
- ❖ Properly tagging labels.
- ❖ During production must be check the machine

#### 4.3.8 Size mistake: (2.67%)



#### Causes:

- ❑ Attach the garment part with different size like small size sleeve and large size body part.
- ❑ Irresponsibility of operator

#### Remedies:

- ❑ Correctly numbering and bundling according to actual size
- ❑ Supply correct size bundle for sewing



#### 4.3.9 Bottom hem uneven: (2.37%)



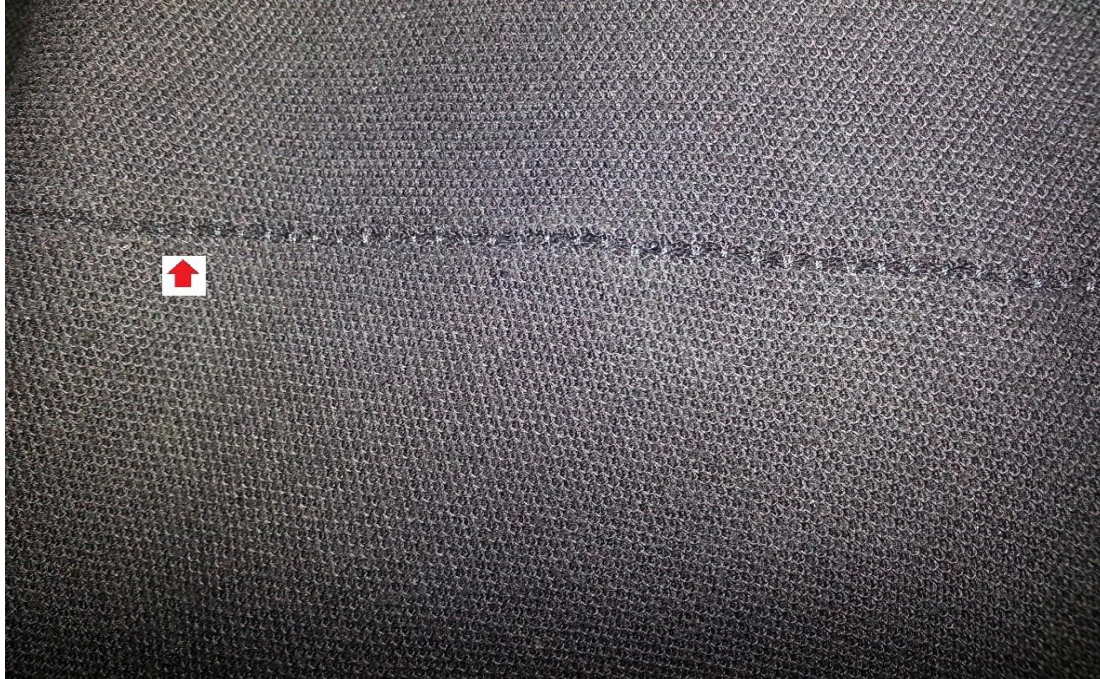
#### Causes:

- ❑ Improper marking
- ❑ Incorrect folding before hem sewing
- ❑ Improper quality check

#### Remedies

- ❑ Proper marking
- ❑ Correct folding before hem sewing
- ❑ Done this operation with skilled operator
- ❑ Proper quality check

#### 4.3.10 poor Stitch tension: (2.07%)



#### **Cusses:**

- ❖ Poor thread tension often comes from an incorrectly inserted needle.

#### **Remedies:**

- ❖ Machine needles have a flat side that should always face the back of the sewing machine.
- ❖ Check that the bobbin is wound correctly. It shouldn't have any loose threads or loops sticking out. Never wind thread onto a bobbin that already contains thread, always use an empty bobbin.
- ❖ Tension can be adjusted easily using the tension dial, but consult your sewing machine manual before doing so. The tension is too tight if the lower thread is pulled up to the top of the fabric. In which case, reduce the upper thread tension by adjusting to a lower number on the tension dial. For the opposite problem, when the upper thread is pulled too much to the underside of the fabric, the tension is too loose. Adjust the tension dial to a higher

## 4.4 Causes of finishing defect (18.82%) which we found in report and their remedies:

### 4.4.1 Dirty spot: (33.66%)



#### Cause:

- Unclean parts used.
- Operator hand dust.
- Natural dust.

#### Remedies:

- Operator must be clean and wear hand gloves.
- Working floor all times clean up.
- No allow unwanted dust & impurities came in the floor.

#### 4.4.2 Oil Spot: (19.39%)



#### Causes:

- ❑ Lubricant oil used in machine parts.
- ❑ Unclean parts used.
- ❑ Operator hand dust.
- ❑ Natural dust.

#### Remedies:

- ❑ Before work lubricant oil properly used in the machine.
- ❑ After used oil properly clean full machine.
- ❑ Operator must be clean and wear hand gloves.
- ❑ Working floor all times clean up.
- ❑ No allow unwanted dust & impurities came in the floor.

#### 4.4.3 Pressing Mark: (15.30%)



#### Causes:

- ❑ Causes of less skilled operator
- ❑ When ironing, worker iron the garment with crease

#### Remedies:

- ❑ Done this by skilled operator

#### **4.5 Causes of Miscellaneous defect (3.07%) which we found in report and their remedies:**

##### **4.5.1 Print spot: (56.25%)**



#### **Cause:**

- ❖ Problem on the printing paste.
- ❖ Temperature problem.
- ❖ Different types of fabric problem.
- ❖ Poor quality printing technique applies.

#### **Remedies:**

- ❖ Correct recipe apply or used for produced printing paste.
- ❖ Higher temperature does not apply in the cloth or fabric.
- ❖ Right fabric used right printing recipe.
- ❖ Improve operator efficiency.
- ❖ Modern or update technique used for printing process.

## 5. Conclusion:

Quality control is the most important stage in garments industries. This thesis paper contains overall quality control system in knit garments industry. Actually we are trying to give a result that helps our Bangladeshi export garments industries to improve the quality of export garments and remove the fault which buyer found in Final Random Inspection. Final inspection is the last stage of garments production. If final inspection report okay then we are delivered the goods. So, final inspection report is the most important matter in the goods delivery and buyer satisfaction. Sometimes shipment cancels when final inspection reports are failing.

We have collected 13 Final inspection report from **Montex Fabrics Ltd. (Mondol Group)**. We found fabric is responsible for 13.24% fault, sewing is responsible for 64.87% fault, finishing is responsible for 18.82% fault and miscellaneous is responsible for 3.07% fault. So we saw that the percentage of sewing fault is more than other section.

The major fabric faults are Hole, Needle mark and Knitting defect. The major sewing faults are Broken stitch, puckering, Neck shape poor, Skip stitch, Uncut thread etc. The major finishing faults are Hang tag missing, Pressing mark, Poly bag problems, Dirty spot, Oil spot etc. The major fabric faults is Printing spot.

we are try to discuse about the Causes of the faults and how can we Remedies this type of faults.

This thesis report important for any garments industry and any textile students to know quality fail and their remedies. This report also help us the next future.

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