Basic apparel production

Level-I

Learning Guide-60

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: IND BAP1 M17 LO 01-LG-60

TTLM Code: IND BAP1 M17 TLM 0919 V1

LO 1: Assess own work

Instruction Sheet	Learning Guide #44

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- ❖ Checking completed work.
- ❖ Demonstrating and finalizing product
- ❖ Identifying and isolating faulty pieces or final products
- ❖ Recording and reporting faults

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Checking completed work against workplace standards relevant to the operations.
- Demonstrating and completing the work activities relate to final appearance of the product
- Identifying and isolating faulty pieces or final products in accordance with company policies and procedures
- Recording and reporting faults and any identifying causes in accordance with workplace procedures

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Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
- Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” respectively.

Information Sheet-1	Checking completed work.

1.1. Checking completed work.

1.1.1. Quality check

A Quality Check involves a small team of Quality Checkers visiting a service at a pre-arranged time to ask questions to the people who use the service, in order to find out how they feel about the service provided.

Garment checking

- **Fabric Quality Check**

Fabric is checked 100 % or randomly for various defects like -weaving defect holes, printing/dyeing defects, water crease marks, colour variations etc. Factories generally follow 4-point system for fabric inspection for woven as well as knits fabrics.

- **Trim Quality check**

All trims are checked for durability & performance. All trims are attached correctly using proper attachment methods. Ribbons ends are heat sealed. Trim materials are checked to perform consistently with the base fabric performance with no differential shrinkage.

- **Cutting quality checks**

Shade variation in cut bundles is being controlled. Other important quality aspects that are taken care are like – using of pattern according to fabric shrinkage, controlling fabric skew or torque, all plaids, horizontal/vertical stripes are given extra care so as to match the stripes. Light weight fabrics are relaxed to avoid measurement error while stitching.

- **Stitching quality checks**

Quality is checked whether garment construction meets with the buyer requirement like garment measurement, stitching quality, seam quality, trims and label are attached correctly.

- **Finishing & Washing**

All the garments are given sufficient time to relax and dry thoroughly prior to packing to avoid foul smelled. Thread cutting, ironing, spotting and other finishing processes are done under strict quality control measures.

- ❖ 100% garments are checked for – **Correct labeling, hangtag positioning and carton marking, Correct ratio packing,** quantity check in each carton as per the packing instruction. All the packed garments are inspected 2.5AQL quality audit before forwarding goods to the buyer's Q.A. team
- ❖ Garment section area according to quality check points have been explained in the following.

Fabric Store	100% fabric inspection
Trim & accessories	Trims inspection
Cutting Room	Marker checking Cut parts checking or audit Bundle inspection
Printing and Embroidery	100 % inspection of printing panels 100% inspection of embroidery
Sewing Department	Inline check point (at critical operation) Roaming checking (Random checking) End of Line checking (100%) Audit of checked pieces
Finishing Department	Initial finishing inspection (after wash) Final finishing inspection (After Pressing) Internal shipment audit

- If you can positively influence any one or more the preceding factors then you will be able to increase the quality (and there for the value)of your product in the customer is mined and he/she will most likely come back to buy from you again

1.2. Quality parameter

- ✓ Finish
- ✓ Size
- ✓ Durability :-

  This is the effective service life of the product customer obviously want products that performed satisfactorily over a long period of time.
- ✓ Product variations
- ✓ Materials

  The raw material checking / inspection are done with the certain given standard of the material. o Accessories checking with approved sample.

  Material checking –fabric for the given standards.
- ✓ Alignment
- ✓ Color

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Fill the blank space

1. Factories follow_____ system for fabric inspection for woven as well as knits fabrics.(3points)
2. List quality parameter .(5points)

Chose

3. Which one is not 100% garments are checked for.(2points)

   A. Correct labeling
   B. hangtag positioning
   C. carton marking
   D. Correct ratio packing
   E. All
   F. None

4. Which one is cutting room quality check .(2points)
   A. Marker checking
   B. Cut parts checking or audit
   C. Bundle inspection
   D. All
   E. None

5. One of garment quality check except .(2points)
   A. Carton marking
   B. **Finishing & Washing**
   C. **Stitching quality checks**
   D. **Fabric Quality Check**
   E. None

Note: **Satisfactory rating - 7 points** **Unsatisfactory - below 7 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Demonstrating and finalizing product

INTRODUCTION

2.1. Demonstrating and finalizing product.

As users of these industrial products we all value their price, quality and delivery. We require products of a given quality of be delivered by or be available by a given time and to be of a price that reflects value for money. Finalizing the product during demonstrating of quality assessment method and proceeds to the next operation

1.2 Feature of Quality in demonstrating the final product

In a manufacturing or service environment, there are major categories of quality, **quality of design, quality of conformance** and **quality of use**.

- **Design quality**

In general, design quality refers to the ability of a design to exactly address the design inputs, such as, intended purpose, regulatory requirements and designer own idea. This includes:

- Identification of the customers
- Identification of the real needs of the customers and other requirements
- Converting the customer needs in to technical language
- Verifying that the technical language reflects the customer needs

- **Conformance quality**

Conformance quality may be defined as the degree of adherence of the product characteristics to the design and specification.
The objective of a quality program is to have a system that will measure and control the degree of product and process conformance in the most economical way.

- **Quality of use**

The producer uses the design to develop a product or provide a service with the available:

- Personnel
- Equipment and material
- Working procedure
- Working environment

If the design quality does not reflect the intended purpose and other requirements or the organization has no adequate arrangements to convert the design in to the product the final output will not be fit for the intended use/purpose.

Self-Check -1	Write Test, chose & True or False

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

True or False

1. Design quality reflect the intended purpose and other requirements or the organization.(2points)

Chose

2. Which One of design exactly address.(2points)

A. Equipment and material

B. Color selection

C. Identification of the customers

D. All

Short answer

3. List major category of quality .(6points)

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Identifying and isolating faulty pieces or final products

3.1. Identifying and isolating faulty pieces or final products

Certain quality related problems, often seen in garment manufacturing like sewing, colour, sizing, or garment defects should never be over looked.

Sewing defects

Open seams, wrong stitching techniques, non- matching threads, missing stitches, improper creasing of the garment, improper thread tension etc. are some of the sewing defects.

Colour defects

- ✓ Variation of colour between the sample and the final garment
- ✓ wrong colour combinations and mismatching dyes.

Sizing defects

Wrong gradation of sizes, difference in measurement of various parts of a garment like sleeves of XL size for body of L size garment can deteriorate the garments beyond repair.

Finished garment defects

Broken or defective buttons, snaps, stitches, different shades within the same garment, dropped stitches, exposed notches, fabric defects, holes, faulty zippers, loose or hanging sewing threads, misaligned buttons and holes, missing buttons, needle cuts, pulled or loose yarn, stains, unfinished buttonhole, short zippers, inappropriate trimmings etc. all can lead to the end of a brand name even before its establishment.

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Short answer

1. list out garment defects .(5points)
2. list at list four garment finish defect .(5points)

Chose

3. which one is not sewing defect .(2points)
   A. non- matching threads
   B. missing stitches
   C. Open seams
   D. wrong stitching techniques
   E. All
   F. None

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Recording and reporting faults

4.1. Recording and reporting faults

A *Record* on the other hand proves that some type of required quality system action took place. Sometimes documents become records. The form is a document and after it is filled in it, becomes a record.

Remember, records normally get filled in and provide evidence that conformance has occurred in the Quality System. Documents offer direction and guidance on particular tasks.

Documents:

Keeping track **how to do things:**

- Process documents; how to do things
- User manuals
- Templates
- Live schedules

Records:

Keeping track of **what was done**:

- Invoices and receipts
- Meeting minutes
- Tax filings
- emails sent and received

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. list Keeping track of **what was done** to record .(6points)
2. which one of the following is record keeping, what was done .(2points)
   A. User manuals
   B. Templates
   C. Emails sent and received
   D. All

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Basic apparel production

Level-I

Learning Guide-61

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: IND BAP1 M17 LO 02-LG-60

TTLM Code: IND BAP1 M17 TLM 0919 V1

LO 2: Assess quality of received articles

Instruction Sheet 1	Learning Guide #61

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Checking received materials, articles or final product
- Measuring materials, articles or final product
- Identifying and correcting faults

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Checking and receiving materials, articles or final product against workplace standards and specifications
- measuring materials, articles or products using the appropriate measuring instruments in accordance with workplace procedures
- taking causes of any identified faults are identified and corrective actions in accordance with workplace procedures.

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information “Sheet 1, Sheet 2 and Sheet 3
4. Accomplish the “Self-check 1, Self-check t 2 and Self-check 3” respectively.

Information Sheet-1	Checking received materials, articles or final product

1.1. Checking received materials, articles or final product

Receiving Materials:

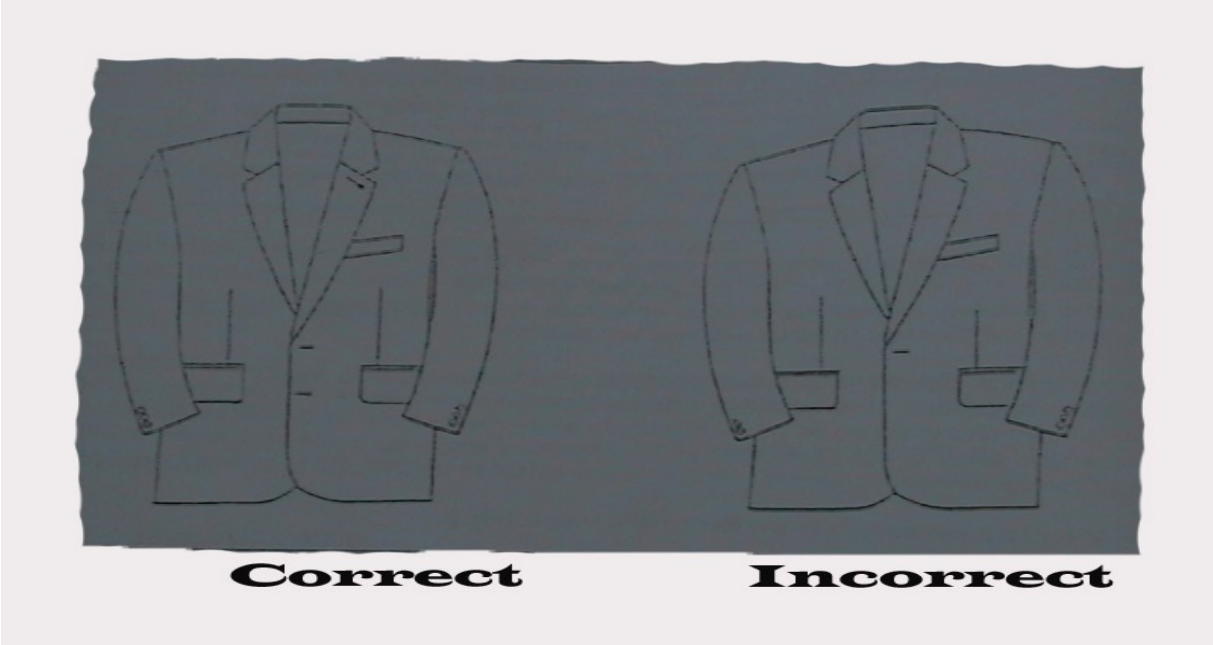
Match the packing slip to the items received and ensures that the materials are destined on tour department.

Methods checking are

1.1.1. Visual inspection

Visual inspection is a common method of quality control, data acquisition, and data analysis. Visual Inspection, used in maintenance of facilities, mean inspection of equipment and structures using either or all of raw human senses such as vision, hearing, touch and smell and/or any non-specialized inspection equipment.

An example of visual inspection of a finished garment is shown below. Analyze the difference.



In the final examination garments should be visually inspected for the following:

- Garment symmetry, especially of basic garment, - visually appearance
- Pressing or fusing defects
- Garment cleanliness
- Loose thread ends
- Color variation
- Correct placing of labels
- Broken stitch in seam or decorative stitching

1.1.2. Physical measurements

Measurement check: – Place the shirt flat on the table. Without pulling at the fabric measure the following in either inches or centimeters - (All measurements should in the same unit)

1.1.3. Check against design/specifications

A poorly designed product will not function properly regardless of how well it meets its specifications. Conversely a product that does not conform to excellent design specifications will not properly perform its intended function.

Design quality In general, design quality refers to the ability of a design to exactly address the design inputs, such as, intended purpose, regulatory requirements and designer own idea. This includes:

- Identification of the customers
- Identification of the real needs of the customers and other requirements
- Converting the customer needs in to technical language
- Verifying that the technical language reflects the customer needs

.

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. _____ is a common method of quality control, data acquisition, and data analysis.(3points)
2. _____refers to the ability of a design to exactly address the design inputs, .(3points)
3. Except one of is garment visual inspection .(2points)
   A. Loose thread ends
   B. Color variation
   C. Correct placing of labels
   D. None
4. One of is inspected by human sense .(2points)
   A. Measuring inspection
   B. Visual inspection
   C. Check design against
   D. All

Note: **Satisfactory rating – 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Measuring materials, articles or final product

2.1. Measuring materials, articles or final product

Measuring materials

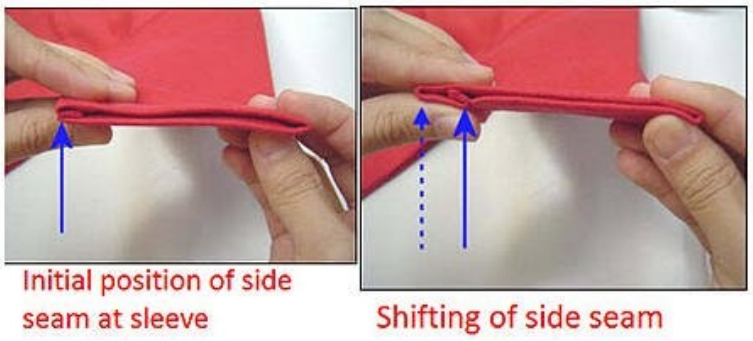
The most important function of any piece of clothing is that it fits the end consumer as intended. Every garment importer can attest that customers will often return a garment if it doesn't fit as expected

Measuring instruments are essential tools for giving people and organizations insight into various conditions. It appears that 'knowing' is invaluable.

Tips for how to measure garments

Here are some helpful tips for how to measure garments accurately:

- Lay the garment on a flat surface for easier and more accurate measuring
- Avoid stretching the garment in any way when measuring, as this will skew results
- Always take initial garment measurements before fitting the garment on a model or dummy
- Take any stretched measurements last (e.g. minimum neck stretch)
- Touch the measuring tape to the surface of the fabric when taking garment measurements
- Lay the garment openings (e.g. sleeve, neck, leg) so the seams are not positioned on the side. Ensure the seams are shifted slightly inwards (see below photo).



In a typical garment inspection,

Some measuring instruments used in garment

Measuring tapes **Ruler**

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. _____ are essential tools for giving people and organizations insight into various conditions. .(3points)
2. One of the following is garment accurately measure.(3points)
   E. Always take initial garment measurements
   F. Take any stretched measurements last
   G. A and B
   H. All

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	Identifying and correcting faults

3.1. Identifying and correcting faults

TYPES OF DEFECTS/faults

1. Critical – presents a hazard to human safety. With this type of defect, the performance of a significant item is likely to be impaired.

   For example, fabric which is highly flammable
2. Major defect – likely to result in failure of significantly reduced usability of product
3. Minor defect –does not materially reduce the same usability of the unit but it is a departure from the standard
4. Secondary defect – although this is a result from a departure from good practice, it will not be noticed by the average consumer

Any one of the defects listed auditors must use their best judgment to determine whether a particular defect is minor or major. All defects which can be repaired must be

A defect classification list might look something like the below example for footwear:

Defect description	Defect classification		
	Critical	Major	Minor
Uncut thread end			X
Wrinkle			X
Uneven stitches			X
Right/left foot position reversed inside shoe box			X
Open seam		X	
Loose yarn		X	
Broken yarn		X	
Wrong sizing within same pair		X	
Protruding nail or sharp point	X		
Missing suffocation warning	X		
Mildew or mold on shoe	X		

Classification of Defects	Common Defects
1. Fabric and Trims	a. Incorrect and unapproved body fabric
	b. Incorrect and unapproved buttons, snaps, zippers, etc., with regard to style, size or color
	c. Any missing trim which is required in a garment
	d. Any label of incorrect size, poor quality, or with wrong information
	e. Unapproved substitution of thread size or color
	f. Fabric defects seriously affecting appearance
2. Seams	a. Unapproved substitution of seam type
	b. Any unfinished seam or open seams
	c. Raw edge on the outside of the garment
	d. Raw edge on serging any garment body parts
	e. Severely and excessively puckered or twisted seams
	f. Any pleat on the outside of the garment which is not a design feature sewn into a seam
	g. Seam margin or stitch gauge uneven or irregular along the seam and beyond the limits set forth in the construction specification or dictated by common sense
	h. Seam edge is wavy to a degree that it detracts from the appearance of the garments or causes finished dimensions to vary beyond tolerances
	i. Part caught in unrelated operation
3. Stitches	a. Any kind of broken stitches on a chain stitch
	b. Two or more skipped stitches on a lockstitch
	c. Run-off stitches ¼" or more
	d. Knotted bobbin or looped thread, as dictated by common sense with regard to appearance or functional intention
	e. Extremely loose tension resulting to formation of loops on bottom or top thread or "grinning" adversely affects appearance
	f. Tight tension (stitch breaks when normal strain is applied to seam or stitching)
	g. Actual stitches per inch vary more than plus or minus two stitches from specifications
	h. Unapproved substitution type
4. Finishing and packing	a. Not pressed or seam busted when required
	b. Not cured when required/ cured when not required
	c. Washed when not required/ not washed when required
	d. Wrinkles, unintended pleats, or crease pressed cured in to the garment
	e. Noticeable scorching or color change due to pressing and/or curing
	f. Objectionable odor in finished garment
	g. Garments not folded or packed according to method specified
5. Other major defects	a. Any material part which is shaded due to shade variation in the fabric or panels or parts cut in a directional fabric
	b. Any spot or stain clearly noticeable on the outside of the garment
	c. Holes, needle chew and drill holes on outside of the garment
	d. Visible hanging strings untrimmed and seriously affecting appearance
	e. Any part which will not perform its designated function or impairs proper use of any other part
	f. Legs twisted more than 1" in relation to bottom hem
	g. Staples/pins remove from the garment
	h. Bartack or buttonhole omitted
	i. Mismatch plaids, stripes and patterns when matching is specified
	j. Buttonhole uncut or not fully cut
	k. Fullness in garment panels or linings adversely affecting appearance
	l. Unacceptable handfeel

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List out types of defect .(5points)
2. Which one is common seam defect .(2points)
   A. excessively puckered or twisted
   B. color change due to pressing
   C. Holes
   D. All
3. One of the following is not common stitch defect.(2points)
   A. broken stitches on a chain stitch
   B. Knotted bobbin or looped thread
   C. Tight tension
   D. All

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Basic apparel production

Level-I

Learning Guide-62

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: IND BAP1 M17 LO 03-LG-60

TTLM Code: IND BAP1 M17 TLM 0919 V1

LO 3: Record information

Instruction Sheet	Learning Guide #44

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- ❖ Recording basic information
- ❖ Maintaining records of work quality

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- ❖ Basic information on the quality performance is recorded in accordance with workplace procedures
- ❖ Records of work quality are maintained according to the requirements of the company.

Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information “Sheet 1 and Sheet 2
- Accomplish the “Self-check 1 and Self-check t 2” respectively.

Information Sheet-1	Recording basic information

1.1. Recording basic information

The most basic requirements of good information are:

- Objectivity: That the information is presented in a manner free from propaganda or disinformation.
- Completeness: That the information is a complete, not a partial picture of the subject
- Pluralism: That all aspects of the information are given and are not restricted to present a particular viewpoint, as in the case of censorship.
- Proper records help us to recall details accurately and provide a factual record That may be needed at a later date.

1.1.1. Why record?

- as a way of noting changes over time, in particular if patterns emerge;
- To monitor whether the situation is worsening or improving.
- To use as a tool in supporting and supervising staff/volunteers.
- As self protection (‘cover your back’).
- Providing teaching/training material;
- Providing research data.
- Service rendering

1.1.2. What should be recorded?

What is recorded must be linked with who it is that is making a record, the context and the Reasons. The following are essential:-

- Notes or entries to be signed and dated;
- The name of the signatory to be clearly identified;
- Information to be

- factual
- accurate
- Clear.

- Records/files to be stored in a safe place to ensure confidentiality;

 If information if not first-hand or there are doubts about its accuracy, the note should be endorsed to this effect with reasons for that conclusion.

1.1.3. How to record?

Given the right of individuals to have access to their records, it is important that records are Properly written.

We should:

- Only be recording information necessary for the purpose;
- Distinguish facts from opinions;
- Distinguish personal values;
- Be concrete and specific rather than abstract and generalized;
- Use simple language;
- emphasize strengths and positive steps that can be taken to improve a situation, Rather than labeling the person and their world;
- Make recording a part of normal practice.

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. One of the following is basic requirement good information.(2points)
   A. Objectivity:
   B. Completeness
   C. Pluralism
   D. All
   E. None
2. One of the following is essential record except .(2points)
   A. The name of the signatory to be clearly identified
   B. Information to be
   C. Entries to be signed and dated
   D. All
   E. None

Short answer

3. Information to be .(6points)

Note: **Satisfactory rating - 5 points** **Unsatisfactory - below 5 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Maintaining records of work quality

2.1. Maintaining records of work quality

Quality Record: All quality management system documentation as described in the list (spreadsheet) of quality records.

Record is maintained date wise, style wise, color wise and size wise for production. quantity reconciliation, and movement of garment pieces With the cutting receiving quantity, it is also needed to maintain records for garments sent to next processes after stitching like garment washing or garment finishing processes.

Document stating results achieved or providing evidence of activities performed. [ISO 9000:2000]

Feeding records can be maintained by stitching department in the following form

1. Recording data in log book
2. Recording data in logbook and later entering data in the computer
3. Recording data using software like ERP or Real time production tracking system

How to maintain feeding record?

The simple way of maintaining feeding record is to maintain everyday's feeding quantity in a long register.

Use the following format for your feeding log book to maintain cutting loading record. Use separate page for different style/article. If case quantity is high and have multiple color ways - you can even record color wise is different pages.

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Short answer

1. What is Record mean? .(5points)

Chose

2. Except one of the following is feeding records maintain by stitching department.(3points)
   A. Recording data in log book
   B. later entering data in the computer
   C. Recording data using software
   D. Maintaining feeding record

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Basic apparel production

Level-I

Learning Guide-63

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: IND BAP1 M17 LO 04-LG-60

TTLM Code: IND BAP1 M17 TLM 0919 V1

LO 4: Study causes of quality deviations

Instruction Sheet	Learning Guide #44

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Investigating and reporting Causes of deviations
- Recommending suitable preventive action
- Identifying quality standards
- Identifying causes of deviation

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Causes of deviations from final products are investigated and reported in accordance with workplace procedures
- Suitable preventive action is recommended based on workplace ***quality standards*** and identified causes of deviation from specified quality standards of materials or final product

Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below.
- Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
- Accomplish the “Self-check 1, Self-check t 2, Self-check 3 and Self-check 4” respectively.

Information Sheet-1	Investigating and reporting Causes of deviations

1.1. Investigating and reporting Causes of deviations

No.	Defect Type	Symptoms	Causes
1	Needle Damage	• Holes on the garment • Thread breakage • Damaged fabric	• Use of incorrect type & size of needle • Use of blunt needle • Difficulty in feed dog
2	Feed Damage	• Visible mainly on shear & thick fabric • Visible when we sew horizontally on fold fabric	• Use of wrong type of feed dog • Too high pressure on the presser foot • Wrong contact b/n feed dog & presser foot • Use of damaged throat plate • When the machine speed is high
3	Skipped stitch	• Appearance of float	• Incorrect adjustment of the timing b/n the needle & the hook/loopier
4	Thread Breaks	• Occurrence of broken stitches on the garment • High idle time	• Thickness of thread is greater than the needle hole • Thickness of thread is less than the needle hole • When the needle gets hot • Lack of concentration during operation • When the tension is too high
5	Broken stitch	• Appearance of discontinuity of stitch on the sewn garment	• Use of wrong stitch type • When the tension is too high • Use of sharp feed dog • Too high pressure on the presser foot
7	Seam Pucker	•	• Incorrect fabric handling • Too high thread tension • Misplacing of pointing
8	Pleated seam	•	• Incorrect feeding (handling) of fabric • When defect type #7 is high
9	Wrong stitch	•	• Too much stitch with in a fixed distance • Too less stitch with in a fixed distance

10	Uneven stitch	• Visibility of uneven number of stitch along the stitch line	• Operator fail to control the fabric • The machine pulls the fabric improperly
12	Improperly formed stitch	•	• Incorrect tension • Incorrect timing b/n needle & hook/ loopier • Attaching wrong machine parts
13	Oil stains	• Appearance of drops of oils/ dirt on the garment	• Adding more oil more than the required • Carelessness during oiling • Not cleaning the machine bed • Running the machine without belt cover • Carelessness or Let the garment to touch in contact with the belt
14	In correct or uneven width of in lay	• Visibility of seam beyond the stitch line • If there, points/ marks will appear	• Incorrect material handling • Incorrect attachment of / guide or folder/ • Using wrong attachments
15	Irregular or in correct shape of sewing line (run off in top stitching)	•	• Lack of confidence during operation • Not using necessary attachments • Using wrong guides • Not following the different marks • Incorrect material handling
16	Insecure back stitching	•	• When the second stitch do not overlap the first one

Self-Check -1	Write Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Short answer

1. Write cause of needle damage. .(5points)
2. _____ Is the cause of Incorrect adjustment of the timing b/n the needle & the hook/loopier. .(3points)

Note: **Satisfactory rating - 4 points** **Unsatisfactory - below 4 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

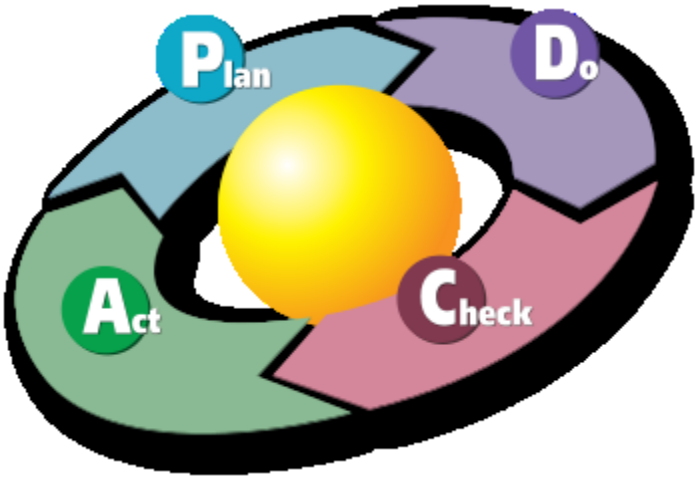
Short Answer Questions

Information Sheet-2	Recommending suitable preventive action

2.1. Recommending suitable preventive action

Introduction to preventive action or corrective action

It is usually a set of actions that laws or regulations require an organization to take in manufacturing, documentation, procedures, or systems to rectify and eliminate recurring nonperformance.



Corrective Action of Sewing Defects

Corrective action is to solve or correct the problem which considers as a defect. Action should be specific and work should be divided to related responsible person. This is a very effective way to solve defects. In this article, I gave corrective action against each and every defect those normally visible. Total fifteen defects are there and for these defects what are the root cause and how we can minimize these problems are also given below.

1. Broken stitches
2. High-low
3. Puckering
4. Oil / stain / dirt / rust/spot
5. Fullness
6. Stitches skipped
7. Incorrect operation
8. Untrimmed threads
9. Crooked
10. Shining mark
11. Poor repair

12. Hole
13. Washing effect poor
14. Off shade
15. Puckering

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. _____is to solve or correct the problem which considers as a defect. .(4points)

Note: **Satisfactory rating - 2 points** **Unsatisfactory - below 2 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-3	**Identifying quality standards**

3.1. Identifying quality standards

Quality standards

Quality standards may be any one or a combination of attributes and variables of the product being manufactured. The attributes will include performance, reliability, appearance, commitment to delivery time, etc., variables may be some measurement variables like, length, width, height, diameter, surface finish, etc..

✓ Materials

✓ Component parts

✓ Final product

✓ Production processes

Quality standards

- Quality –the word itself is concept and implies degree of excellence the nature which is dependent on the reasons. For the product being appreciated
- Quality is the main ingredient in a product that delights the customer either by meeting or exceeding his expectation
- Quality can be defined as a combination of the characteristics or properties of a product that make the product usable

FACTORS DETERMINING QUALITY STANDARDS

1. Customer requirements

2. Raw materials supplier
3. Designer
4. Senior management whose responsibility is to see that customers standards are met and decide who is responsible for quality
5. Factory management whose responsibility is to see that adequate training is given to operators and sufficient methods installed to make and check the products
6. Irregular or incorrect shape or bias of sewing line in top stitching or uneven width of double stitching-caused by badly set guide or poor technique on the part of the operator
7. Seam puckering- caused by incorrect handling of the operator, misaligned notches, tight thread tension
8. Improperly formed stitches i.e. uneven stitch density-caused by bad tension, faulty feed motion, ill-fitting machine components
9. Blind stitching showing on face side or not accurately caught on inside-arising from improperly adjusted needle and hooks.
10. Wrong scam type or stitch type used
11. Wrong shade of thread used
12. Wrong stitch density
13. Mismatch checks or stripes
14. Uncut buttonholes, half-finished buttons, thread of buttonholes not securely fastened
15. Uneven widths of piping arising from incorrect selection of adjustment of folders
16. End of stitching not secured properly, no reverse stitches
17. Missing or unsecured buttons

Standards of Quality

- clearly define, definite and understandable
- should be in writing in the form of product drawings, specifications of industry products where applicable and available
- documented and should be made available to and understood by both the manufacturing personnel and quality control personnel
- rejections are often caused by the absence of standards or misunderstanding the quality standards
- standards in the garment industry are mostly expressed in numerically with plus and minus tolerances which are easily measurable by available tools and equipment
- For those who produce garments of their own designs these standards emanate from the product design group in coordination with manufacturing people
- For subcontractors, specification standards are provided by the main contracting company
- Products for exports usually have standards supplied by buyers or customers

	Tolerances	
	(inches)	(cm)
Shirts/Blouses		
***sleeve**	± ½ - ¼	±1.3 – 0.6
***collar**	± ¼	±0.6
***chest**	± 1	± 2.5
Waist	± 1	± 2.5
Sweep	± 1	± 2.5
Shoulder	± 3/8	± 1.0
Armhole	± ½	± 1.3
Body length	± 3/8	± 1.0

Jeans/ Slacks		
***waist**	± ½	± 1.3
***seat**	± 1	± 2.5
***thigh (jeans) or**	± ½	± 1.3
***inseam (slacks)**	± ½	± 1.3
Knee	± ½	± 1.3
Bottom	± ½	± 1.3
Front rise	± 3/8	± 1.0
Back rise	± ½	± 1.3
Out seam	± ¾	± 2.0
• **Key measurements**		

Self-Check -1	**Write Test & chose**

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

Short Answer

1. What is Quality standard .(5points)
2. List quality standard included.(5points)

Chose

3. One of the following is factors to determine quality standard .(2points)
   A. Customer requirements
   B. Raw materials supplier
   C. Designer
   D. All
   E. Except" A"

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-4	Identifying causes of deviation

4.1. Identifying causes of deviation

Causes of Garments Defects

Manufacturers have to find out all causes behind defect to work on it. As a quality control person, you need to do practical work in defect occurring place to find out all the reasons behind every defect. The best method is to follow the 6M method for Cause and Effect Analysis. 6M is finding root causes against 6 criteria. 6M's are

- M – Machinery
- M – Manpower
- M – Mother-nature
- M – Method
- M – Materials
- M – Measurement

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. List 6M's.(6points)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Basic apparel production

Level-I

Learning Guide-64

Unit of Competence: Apply Quality Standards

Module Title: Applying Quality Standards

LG Code: IND BAP1 M17 LO 05-LG-60

TTLM Code: IND BAP1 M17 TLM 0919 V1

LO 5: Complete documentation

Instruction Sheet	Learning Guide #44

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Recording Information on quality
- Recording all production processes and outcomes

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to**:

- Information on quality and other indicators of production performance is recorded.
- All production processes and outcomes are recorded.

Learning Instructions:

- Read the specific objectives of this Learning Guide.
- Follow the instructions described below 3 to 6.
- Read the information written in the information “Sheet 1 and Sheet 2
- Accomplish the “Self-check 1 and Self-check t 2” respectively.

Information Sheet-1	Recording Information on quality

1.1. Recording Information on quality

1.1.1. Definition of quality

Quality may be defined as the level of acceptance of a goods or services. For the textile and apparel industry, product quality is calculated in terms of quality and standard of fibers, yarns, fabric construction, color fastness, designs and the final finished garments.

- It is a systematic approach to the search for excellence. According to International Standard Organization (ISO), “Quality is the fulfillment of the specified requirements for a product or service”.
- Quality of a garment refers to the product free from staining faults, sewing defects, fabric faults, size measurement faults, matching of color and stripe faults, cutting faults, etc.

- **However, quality also means much more, they include:**

- The degree of excellence that an item possesses.
- The best money can buy.
- Meeting a specification.
- Not more than 1% defective a lot.
- Anything Japanese.
- Quality is when the customers come back not the goods.

Five principal factor affect the quality of product

  - Raw materials
  - Product method
  - Machines
  - Man power
  - Means of working

Some of the factor that influences customer perception of quality

These factors are :-

- ✓ Price
- ✓ time orientation
- ✓ technology
- ✓ contractual
- ✓ psychology
- ✓ ethical

1.1.2. Quality Control

Quality control is a system or a process to make sure that quality is maintained. Quality control is just not to find faults but also rectify and prevent such faults from further occurrence.

1.1.3. Quality Assurance

Quality assurance is all the planned and systematic activities implemented within the quality system and demonstrated as needed, to provide adequate confidence that a product or service (in our context apparel) will fulfill requirements for quality.

Quality assurance is for both internal and external purposes:

- ➢ Internal quality assurance-with an organization, provides confidence to the management and used for decision making on the quality of the product based on the specification of the customer.
- ➢ External quality assurance- provides confidence to customers and mostly done at the final product that is ready for shipment and also it is done by the third party.

1.1.4. Acceptable Quality Level (AQL)

It is the maximum percent defective that, for the purpose of sampling inspection, can be considered satisfactory as a process average.

AQL is the specific value for a certain defect or group of defect that the customer provide to the supplier as his acceptance level of a particular lot/batch provided statistical sampling procedures are used.

AQL is usually expressed in percent (%). It means that accepted lot/batch will not contain more than X% defective (assuming X is the value of selected AQL).

The AQLs for garment pieces are usually 2.5, 4.0, 6.5 and 10 depending upon the quality characteristics and prices (refer table 1 & 2)

$$\text{Percent defective} = \frac{\text{Number of defective units}}{\text{Number of units inspected}} \times 100$$

Table-1: Sample size code letters

Lot or Batch Size	Sample Size Code Letters
2 to 8	A
9 to 15	B
16 to 25	C
26 to 50	D
51 to 90	E
91 to 150	F
151 to 280	G
281 to 500	H
501 to 1200	J
1201 to 3200	K
3201 to 10000	L
10001 to 35000	M

Source: ANSI/ASQC Z 1.4, the sample procedure and tables for inspection by attribute

Table-2: Sampling plan

Sample Size Code Letters	Sample Size	Acceptable Quality Level							
		2.5		4.0		6.5		10	
		Acpt.	Rejct.	Acpt	Rejct.	Acpt	Rejct.	Acpt	Rejct.
A	2	0	1	0	1	0	1	1	2
B	3	0	1	0	1	0	1	1	2
C	5	0	1	0	1	0	1	1	2
D	8	0	1	1	2	1	2	2	3
E	13	1	2	1	2	2	3	3	4
F	20	1	2	2	3	3	4	5	6
G	32	2	3	3	4	5	6	7	8
H	50	3	4	5	6	7	8	10	11
J	80	5	6	7	8	10	11	14	15
K	125	7	8	10	11	14	15	21	22
L	200	10	11	14	15	21	22	21	22
M	315	14	15	21	22	21	22	21	22

Source: ANSI/ASQC Z 1.4, the sample procedure and tables for inspection by attribute

Selection of sample plan

Sample size can be selected by considering the two factors i.e. lot size and AQL from table 1 & 2 above.

Example:

Find a sample plan for a lot/batch size of 2000 garments and an AQL of 2.5.

a) Refer table-1: lot size of 2000 corresponds to sample size code letter 'K'
b) Refer Table-2: code 'K' corresponds to sample size 125
c) Refer Table-2: code 'K' and sample size 125 corresponds to the acpt. (acceptance) of 7 and Rejct. (Rejection) of 8 at AQL of 2.5.

- This illustrate that if the number of defective garments is 7 or less out of sample of 125 garments, the lot of 2000 garments is accepted.
- This also illustrate that if the number of defective garments is 8 or more out of sample of 125 garments, the lot of 2000 garments is rejected.
- The table also shows that changing the AQL from 2.5 to 4.0, 6.5 or 10 for the same lot/batch i.e. 2000 garment will result in different sets of acceptance or rejection number.
- It is observed that the higher the AQL used, the lower the accepted quality level and vice versa.

1.1.5. Inspection

What is Inspection?

Inspection in reference to quality control in the apparel industry can be defined as the visual examination or review of raw materials (such as fabric, buttons, zippers, sewing-

Thread etc.), partially finished component of the garments & completely finished garments in relation to some standards, specifications or requirements.

The main objective of inspection is the detection of defects & non-conformances 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. For inspection to be effective, the entire inspection loop as shown below must be completed.

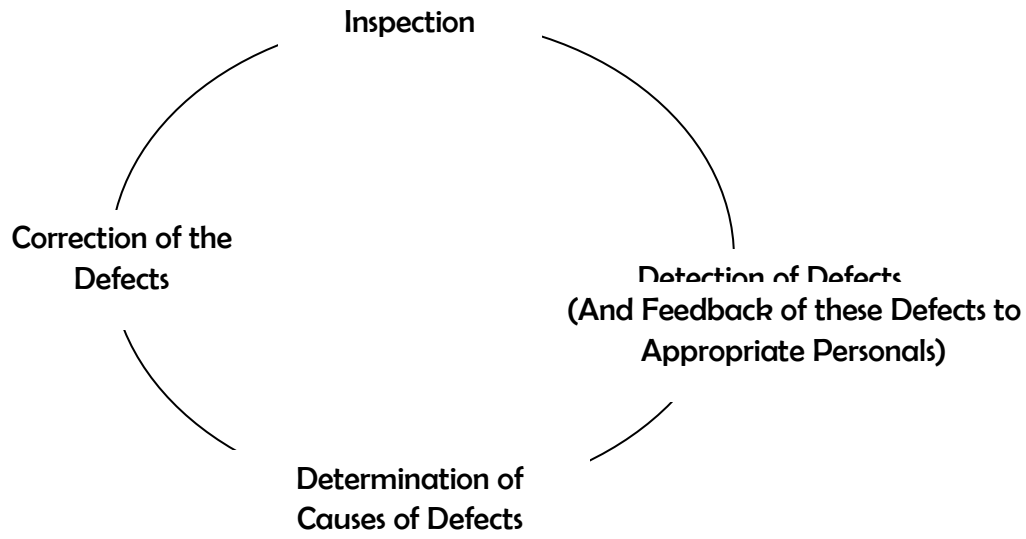


Fig. 1 Inspection Loop

Why is inspection necessary?

- To insure that all goods that are purchased conform to the quality of goods ordered and that the correct quantities are received and recorded before they are put into stock.
- To ensure that all materials issued are correct for the product
- To ensure that the correct patterns have been used for the cutting order
- To ensure that the cutting quality is acceptable and within the tolerance
- To ensure that finished goods are of consistent quality standard and that measurements are within the tolerances laid down in the customer specification.
- To ensure that all sewing and finishing operations are correct to the customer specification
- To ensure that the correct products and ratios have been picked/selected for a customer shipment

What is to be inspected?

Goods Received	Goods in process	Finished Goods
➢ Fabric ➢ Lining ➢ Fusible ➢ Buttons ➢ Thread ➢ Tape ➢ Labels ➢ Hangers ➢ Poly bags And any other raw materials connected with the product manufacturing	➢ Materials issued ➢ Cut work ➢ Patterns ➢ Sewing operations ➢ Finishing This includes stitch and seam types used, SPI, Seam widths and dimensions	➢ Goods in storage ➢ Goods in dispatch Packing materials and customer labeling is also checked

Various stages of inspection

I. Raw material inspection

II. In-process inspection

III. Final inspection

I. Raw material inspection

- Fabric inspection
- Sewing thread
- Zippers
- Buttons and buckle

Example:

A. Fabric Inspection

After fabric is received, it should be inspected to determine its acceptability from quality point of view; otherwise, extra cost in garment manufacturing may be incurred due to either the loss of the material or time, or customer dissatisfaction & returns. The following are points which have to be seen during inspection of woven and knitted fabrics.

What is to be seen in woven fabric inspection?

- Broken End: yarn broken in warp direction
- Broken pick: yarn broken in weft direction in woven fabric
- Burl mark: A slub or knot being removed with a burling tool in fabric
- Coarse end or pick: A yarn having large diameter than the normal fabric
- End out: A missing warp yarn
- Hole: any broken yarn to form a hole
- Knot: Two or more ends of yarn tied together.
- Loom Bar: A change in shade across the full width of the fabric
- Slubs: A short abnormal thick place in the yarn
- Thick place: where the place of weft yarn greater in diameter than normal to the fabric
- Thin place: Where the place of weft yarn smaller in diameter than the normal to the fabric.

What is to be seen in knitted fabric inspection?

- Barre: noticeable strips in the direction of the weft
- Coarse yarn: A yarn having large diameter than the normal fabric.
- Dropped stitches: When a stitch falling to form because of manufacturing needle.
- Fine yarn: A yarn having smaller diameter than the original fabric.
- Missing yarn: A yarn is missing or broken while the machine continuing to run.
- Needle line: Wales are distorted caused by bent needle.

- Press-off: A condition in which a knitted fabric fails to knit and as a result either the fabric falls of the needle or the design of the fabric is completely destroyed.
- Run: A vertical line of unformed stitches caused by damaged needle

There are various fabric inspection systems but following are used more often in the industry.

1. 4- Point system
2. 10-Point system

1. 4-Point System

The 4-Point System, also called the American Apparel Manufacturers Association (AAMA) Point Grading system for determining fabric quality is the most widely used system.

Fabric flaws or defects are assigned point values based on the following:

Length of defect in fabric, either length or width	**Points allotted**
Up to 3 inch	1
3-6 inch	2
6-9 inch	3
Over 9 inch	4
Holes & openings (Largest dimensions)	
1 inch or less	2
Over 1 inch	4

Total defect points per 100 yd^2 are calculated

Points per 100 square yards = $\frac{\text{Total points scored in the roll x 3600}}{\text{Fabric width in inches x total yards inspected}}$

Example

A fabric roll 120 yard long and 48” wide contains following defects:

5 defects up to 3 inch	5x1	5 points
2 defects between 3”to 6”	2x2	4 points
2 defects between 6”to 9”	2x3	6 points
1 defect over 9”	1x4	4 points

- Total number of defects = 10
- Total points scored in the roll=19

Therefore,

$$\text{Points/100 sq yards} = \frac{\text{Total points scored in the roll} \times 3600}{\text{Fabric width in inches} \times \text{total yards inspected}}$$

$$= \frac{19 \times 3600}{48 \times 120}$$

$$= 11.875 \text{ points/yard}^2$$

So if the acceptance criteria are 40 points per 100 sq. yard then this roll is acceptable. Those fabric rolls containing more than 40 points per 100 sq yard is considered as second quality.

2. 10-Point System

Under this system, fabric defects are assigned points values based on the following:

Length of defect	**Points allotted**
Warp defects	
Up to 1 inch	1
1-5 inch	3
5-10 inch	5
10-36 inch	10
Weft defects	
Up to 1 inch	1
1-5 inch	3
5 inch to half width	5
Longer than half width	10

Self-Check -1	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. What is quality mean? .(5points)
2. list out of stages of inspection.(5points)
3. which one of the following is Raw material inspection.(2points)
   A. Fabric inspection
   B. Sewing thread
   C. Zippers
   D. All

Note: **Satisfactory rating - 6 points** **Unsatisfactory - below 6 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Information Sheet-2	Recording all production processes and outcomes

2.1. Recording all production processes and outcomes Quality standards

Records are also maintained for relevant information not included in the quality system, e.g. pertinent subcontractor quality records, hazard warnings, manufacturers handbooks and records of management review meetings etc.

Records retained as the result of work related issues must be securely retained for a minimum agreed period that meet the legal need in the event of documentation having to be produced in court.

Process of Sewing Clothing Garments and Quality Control Points

Manufacturing relies on processes, which are steps in product making and delivery of final output Process.

Improvement is another area of achieving a competitive advantage over competing manufacturers as it can contribute to a manufacturer's ability to deliver a quality output at an affordable rate

The aim of any sewing process is to deliver a smoothly finished garment or clothing item in case of sewing clothes. The lack of process quality management in small clothing-wear manufacturing enterprises can create inconsistencies on the quality of the output delivered. Quality management requires to be managed using resources which include capable human resources, machine resources, a capable workflow and adequate manufacturing facilities

The process of sewing garments

(1) starts with the receiving of an order with detailed specifications,
(2) pattern design,
(3) sourcing of fabric,
(4) reading of fabric/cloth,
(5) cutting,
(6) fusing,
(7) sewing,
(8) buttoning (if needed),
(9) finishing and quality inspection at the end of the process.

Self-Check -2	Write Test & chose

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1. Write the process of sewing garment .(6points)

Note: **Satisfactory rating - 3 points** **Unsatisfactory - below 3 points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Operation Sheet 1	Upper part garment quality check

Techniques for Upper part garment quality check

II. Right and wrong side of the garment(All seams and stitch should be checked)

Stap1 Collar measurement check

Stap2 Right and Left front area

Stap3 Right and left, front and back sleeve part

Stap4 Top centre area: Button and Button holes placement

Stap5 Symmetric of front left and front right parts

Stap6 Back side of back part

Stap7 Cuff area

Stap8 Symmetric of right and left back part sleeve

Stap9 Bottom measurement checking

PRECAUTIONS:

- The inspection should be carried out following the procedures.
- Be sure that you inspect the whole garment area.
- Dusts, oil stains and forgotten protruding threads should be removed here.
- Lists of defects should be recorded and reported to the concerned personnel.
- Inspect in area where the illumination is good.

1) All steps were completed in the correct sequence,
2) All safety precautions were followed
3) All defects should be marked by sticker or removable marks.
4) Minor defects should be amended if possible

QUALITY CRITERIA: 5) Decision (Accept/ Reject) should be settled here.

Operation Sheet 2	Bottom Garments (Ex. Trouser, Shorts, Skirt etc) quality check

Techniques for Bottom Garments quality check

Steps to be followed when inspection is undertaken:

I. **Check or inspect the RIGHT and wrong SIDE of the garment** (All seams and stitch should be checked)

Stap1 Waist area including button closing structure, belt loops etc

Stap2 Fly area including zipper or buttons & button holes attachments

Stap3 Front and back crotch line

Stap4 Right and left, front and back area including side area

Stap6 Bottom checking

Stap7 Symmetric of right and left length

PRECAUTIONS:

- The inspection should be carried out following the procedures.
- Be sure that you inspect the whole garment area.
- Dusts, oil stains and forgotten protruding threads should be removed here.
- Lists of defects should be recorded and reported to the concerned personnel.
- Inspect in area where the illumination is good.

QUALITY CRITERIA:

6) All steps were completed in the correct sequence,
7) All safety precautions were followed
8) All defects should be marked by sticker or removable marks.
9) Minor defects should be amended if possible
10) Decision (Accept/ Reject) should be settled here.
11)

LAP Test	Practical Demonstration

Name: _____ Date: _____

Time started: _____ Time finished: _____

Instructions: Given necessary templates, tools and materials you are required to perform the following tasks within 3 hours.

Task1 check shirt quality

Task2 clarify and list defects by type