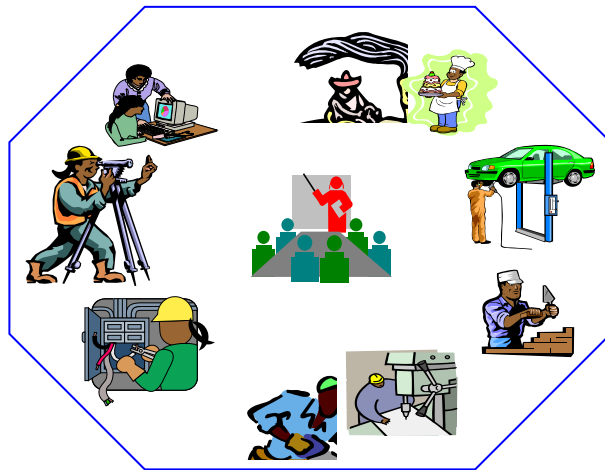




ADVANCED APPAREL PRODUCTION- LEVEL III

Based on Dec, 2020 Version 1 March 2011 Occupational Standard



Module Title: Assembling and Fitting Commercially Tailored Garments

LG Code: IND AAP3 M 10 LO(1-5) LG(40-43)

TTLM Code: IND AAP3 TTLM 1220v1

January,2021

Bishoftu,Ethiopia

Page 1 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
---------------	---	---	-----------------------------



Content

Table

LG #40.....	5
LO #1- Prepare garment pieces.....	5
Instruction sheet.....	5
Information Sheet-1.....	5
1.1.Gathering and checking materials and garment pieces.....	5
Self-Check -1.....	5
Written Test.....	5
Information Sheet-2.....	5
1.2.Pinning or sewing fabric pieces together and hung appropriately.....	5
Self-Check -1.....	5
Written Test.....	5
Information Sheet-3.....	5
1.3.Conducting first fitting.....	5
Self-Check -3.....	5
Written Test.....	5
Information Sheet-4.....	5
1.4.Handling appropriately material.....	5
Self-Check -3.....	5
Written Test.....	6
Operation title 1.....	6
Constructing the Standing Collar.....	6
LAP Test 1.....	6
Practical Demonstration.....	6
LG #40.....	7
LO #1- Prepare garment pieces.....	7
Instruction sheet.....	7
Information Sheet-1.....	8
1.1.Gathering and checking materials and garment pieces.....	8
Self-Check -1.....	18
Written Test.....	18
Information Sheet-2.....	19
1.2.Pinning or sewing fabric pieces together and hung appropriately.....	19
Self-Check -1.....	24
Written Test.....	24
Information Sheet-3.....	25
1.3.Conducting first fitting.....	25
Self-Check -3.....	31
Written Test.....	31



Information Sheet-4.....	32
1.4.Handling appropriately material.....	32
Self-Check -3.....	37
Written Test.....	37
Operation title 1.....	38
Constructing the Standing Collar.....	38
LAP Test 1.....	39
Practical Demonstration.....	39
manual handling techniques.....	123
standard operating procedures.....	124
personal protective equipment.....	125
safe storage of equipment.....	127
safe materials handling.....	129
taking of rest breaks.....	130
ergonomic arrangement of workplaces.....	131
1.4.7.following marked walkways.....	134
housekeeping.....	135
 Acknowledgement.....	 136
Reference.....	137



LG #40

LO #1- Prepare garment pieces

Instruction sheet

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

- Gathering and checking materials and garment pieces
- Pinning or sewing fabric pieces together and hung appropriately.
- Conducting first fitting
- Handling appropriately material

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:

- Gather and check materials and garment pieces
- Pin or sew fabric pieces together and hung appropriately.
- Conduct first fitting
- Handle appropriately material

Learning Instructions:

Read the specific objectives of this Learning Guide.

1. Follow the instructions described below.
2. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them
3. Accomplish the “Self-checks” which are placed following all information sheets.
4. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the



Self-checks).

5. If you earned a satisfactory evaluation proceed to “Operation sheets
6. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
7. If your performance is satisfactory proceed to the next learning guide,
8. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Page 5 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Garment Stitching

After cutting and printing process (optional process), cut components are sent to sewing department. Operators stitch and assemble garment components one by one and make the complete garment. At the time of sewing, garments are checked by quality checkers. Stitched garments are dispatched to finishing or washing department if washing is required.

The garment stitching process involved following sub-processes.

- Part preparation
- Marking
- Folding and pressing
- Stitching/assembling
- Quality checking

In the sewing section, operators are also provided various sewing supplies like stitching threads, sewing machine needle, trims, operation specific guides and attachments.

Parts Preparation: Before assembling the garment, individual garment parts are prepared in the preparatory section. For an example, in shirt manufacturing, shirt collars, sleeve cuffs and sleeves are prepared in the preparatory section and later loaded in the shirt assembling section. The preparatory section is introduced in the line to improve line balancing. Be noted preparatory section is not required for products like t-shirt, boxer, leggings.

Marking part: In a garment, some part requires marking to attach one garment component to another precisely. Marking is normally done by using chalk or magic



pencil by using a template or laser ray.

Like in a formal shirt for button holing and button attachment, front plackets are marked manually to define the correct location of the button positioning. The marking process helps operator deciding where the job needs to be done accurately.

Part folding and pressing: Depending on the requirement an operator may need to fold the component and press it by means of a template. Like, chest pocket is folded and pressed prior to attaching the pocket on the chest.

Assembly section: The garment components are assembled by the operators step by step in a sequence of product construction.

Quality inspection on the floor: On the sewing floor, stitching quality is checked by the checkers. Normally the semi-stitched garments are checked to detect the stitching faults. The checker suggests a solution to the operator who is responsible for making the defects. Inline quality inspection, roaming inspection, and end-of-line quality checking are done on the sewing floor.

Production line set-up: The stitching floor requires a maximum number of manpower in a garment production units including sewing machine operators, helpers, pressman, alteration tailor, feeder, data collection, work-study officer, quality checker and line supervisors.

In mass garment production, the production line layout and line setting are done prior to loading every new product (style). The industrial engineers prepare the operations bulletin and line layout. In the operation bulletin, they estimate manpower requirement and machine requirement to produce the target quantity.

Production Reporting: Production data capturing and reporting is an integral part of the garment manufacturing. Production and quality related data are collected to track the production and monitoring the production. Various kinds of production reports are made and analyzed by a factory.

Page 7 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Lining

Lining fabric refers to a group of materials inserted into various garments, from skirts and shorts to dresses, jackets and coats. Such fabrics can be made of natural or synthetic fibers and range from sheer to opaque.

Lining is attached to the inner part of the garment to help keep its shape, hide the interior construction and facilitate the whole putting on/taking off thing.

- Main fabric-facing-interfacing-interlining–undelining-lining



fig.lining

Purpose

- The purpose of lining fabric is to make your garment more wearable, long-lasting and comfortable.

They are usually light weight and have a soft or silky texture.

- To make the garment less see-through
- To add warmth and durability
- To make the inside part of the garment soft and pleasant to the touch
- To lend a luxury note to a garment
- To improve the structure of a garment
- To help the garment slide on easily
- To conceal seams, padding, interfacing

Page 8 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



What is Interlining?

A piece of fabric used for a particular part/component, used between two plies of actual garments to provide

- Attractiveness
- Strength
- Shape Retention

is called interlining. By and large, interlining is utilized in the garments like the neckline, belt, confronting, forward portion of a coat. Interlinings are delicate, thick, and adaptable. Its texture comes from the material that's used to make it, i.e., the filaments of cotton, nylon, polyester, fleece, or with their mixes. Interlining fabric possibly fabricated by weaving, sewing, or by felting(nonwoven). These fabrics are given treatment for accomplishing unique characteristics

Garments segments which are customarily fused are:

- Skirts and pants: belts, overlap, underlap;
- Blouses, shirts, and dresses: collars, facings, cuffs;
- Coats and jackets: fronts, facings, collars, pocket folds, pocket openings, and so forth.

Interlining is a layer of textile used between two outer layers of shell fabric to impart strength, support, stability and shape retention to the outer shell fabric against any distortion due to stress exerted at various stages of production, during wearing/use or after care treatments. The interlining is also called as interfacing.

Difference between interlining and lining

The lining is a layer of fabric used under the garment as cover to the raw edges and smooth surface to support outer shell for good drape. It can be woven or knits

Page 9 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



as needed for a particular application/use.

interlining is used between two outer fabric layers. For an example, fusible interlining used in collar and cuff in men's formal shirts for stiffening the said components.

Why use interlining?

Followings are the primary objective of using interlining in garments.

- Interlinings are primarily used for imparting strength/support, stability and shape retention.
- When fused to the outer shell fabric it acts as a composite and stabilizes the outer shell against any distortion under stress
- Helps improve aesthetic and hand feel of fused laminate
- Helps retain the shape of the fused part during use and after care treatment
- Improves longevity of fused part

Different types of interlining available/in use

Based on its application point, interlinings are categorized as

- non-fusible or Sewn interlining
- fusible

Sewn Interlining

Sewn interlining has been being utilized for making articles of clothing since old occasions. Sewn interlining is made by consolidating various layers of texture and sewing habitually. Finally, applying into it into the starch-like material, its quality is improved. Sewn interlining is gotten together with the primary texture of the articles of clothing by sewing.

Page 10 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Facing

Facing is a kind of fabric, and applied to the garments. The function of facing is like lining, to provide contrast, decoration or strength.

Facing hides the raw edge between the wrong side of the fabric and the wrong side of the facing to make garments and fabric more clean.

Facings are usually cut into several pieces and the shape as the same as fabric. They are often interfaced, to help keep the fabric's shape or provide a little stiffness.

After the facing is sewn on, you will need to clip into any curved areas for the facing to lie flat. Understitch the seams to the facing, close to the seam line.

Types of facing

• Shaped Facings

A shaped facing is a separate piece of fabric cut from a pattern to the same shape and on the same grain as the garment edge it will finish. Interfacing should be applied to the facing piece of fabric, prior to any stitching.



Fig. shaped facing

Page 11 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Extended Facings

- An extended facing is cut as an extension of the garment and then folded back along the edge it finishes
- Extended facings are often used on garments with front or back openings cut on a straight line. The neckline of an extended facing is a shaped facing and should be applied using the same techniques as other facings
- Fusible interfacings may be applied to the facing side of an extended facing.



Fig.extended facing

Bias facing

- Abias facing is an arrow strip of light weight fabric cut on the bias so that it can beshaped to conform to the curve it will finish.
- Bias facings are often used on sheer fabrics to eliminate a wide facing that may show through.



- Bias facings are also used on children's garments.
- Abias strip of lining fabric can eliminate heavy shaped facings on bulky fabrics.
- A bias facings hould be about1/2in.wide when finished.



Fig.bias facing

Tips For Applying Facings

- Both shaped and bias facings can be cut from a fabric lighter in weight than the garment to reduce bulk.
- If you have to alter the pattern,be sure to alter facings and interfacings to match.
- Interface a facing that will have button holes in it.
- Make facings smooth and flat by clipping inward curves and notching outward curves.
- Under stitch shaped and extended facings to keep them from rolling to the outside of the garment.



- Finish outer edges of facings. Generally, the same finish that is applied to seams can be used to finish facing edges. Use the least bulky seam finish that will prevent raveling.
- Tack facings only at seams, such as the under arm seam or side seam. Do not handstitch the outer facing edge to the garment all the way around; this gives garments a puckered and unprofessional look.
- Finish neckline facings over zippers. Then sew a hook and eye or flying snap to hold edges closed.

Shoulder Pads

Shoulder pads provide support and shape of the shoulder silhouette. Shoulder pads are important shaping device in tailored jackets and coats with raglan sleeves, set-in sleeves and kimono sleeves. They are also used in blouses and dresses.



fig. Samples of different shapes of shoulder pads



Self-Check -1

Written Test

Answer the following questions

1. list down some Purpose of lining for garment(3pts)

2. List down Types of facing applied on garment(2pts)

3. explain the difference between lining and interlining(3pts)

Note: Satisfactory rating – 8 points Unsatisfactory below 8points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____



Information Sheet-2	1.2.Pinning or sewing fabric pieces together and hung appropriately.
---------------------	--

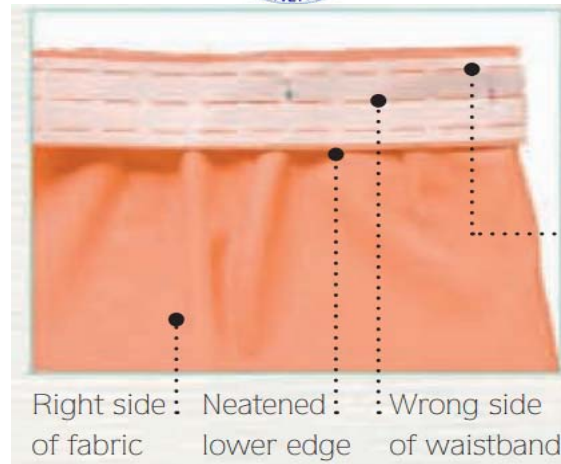
Assembly (Sewing) of Production Garments

Garments made domestically are generally assembled in an order referred to as "parts, panels, pieces, products." After cutting and marking, all parts (minor garment parts, such as portions of collars, cuffs, or pockets) and panels (major garment sections, such as fronts and backs) are tied together into bundles (stacks of like components) Panels not needed until later are sent to a holding area. Parts are sent to the parts line, sometimes called preliminary, where as many small parts as possible are prepared for assembly. For example, preliminary operations include hemming tops of patch pockets, adding decorative embroidery to front panels, partially assembling zippers, applying interfacing, and attaching labels. Once the parts line has completed a cut, the work is sent to the holding area and bundled in with the panels The bundles are then sent to the appropriate lines for assembly of the major panels and pieces (semicomplete sections of the garment, such as sleeves, collars, and cuffs). Once the body of the garment is put together, final touches such as buttons and trim are added. This completes the assembly of the product, the finished garment.

Attaching a straight waistband

A waistband is designed to fit snugly but not tight to the waist. Whether it is shaped or straight or slightly curved, it will be constructed and attached in a similar way. Every waistband will require a fusible interfacing to give it structure and support. Special waistband interfacings are available, usually featuring slot lines that will guide you where to fold the fabric. Make sure the slots on the outer edge correspond to a 5 /8in (1.5cm) seam allowance. If waistband fusible interfacing is not available, you can use a medium-weight fusible interfacing.

Page 16 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020

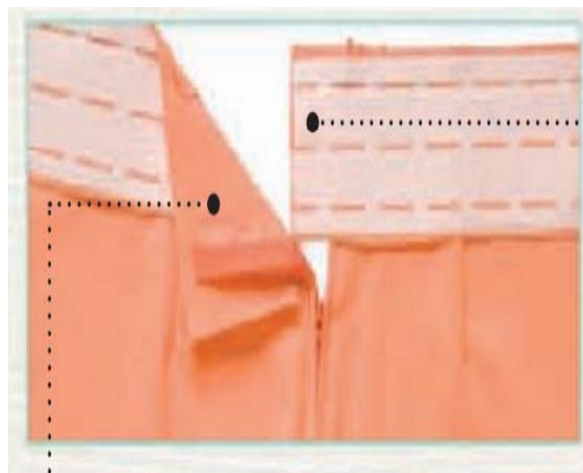


1 Cut the waistband and apply the interfacing. Neaten one long edge.

2 Pin the waistband to the skirt waist edge, right side to right side. Match the notches.

3 Stitch the waistband to the waist edge using a $\frac{5}{8}$ in (1.5cm) seam allowance. The waistband will extend beyond the zipper by $\frac{5}{8}$ in (1.5cm) on the left and 2in (5cm) on the right.

4. Waistband extension to be finished 4 Press the waistband away from the skirt.



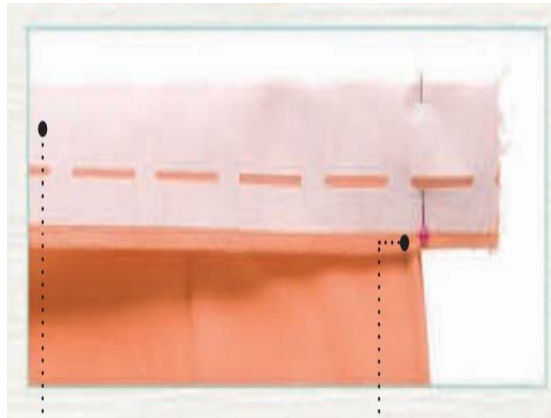
5 Fold the waistband along the crease in the interfacing, right side to right side.

Page 17 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
----------------	---	--	------------------------------



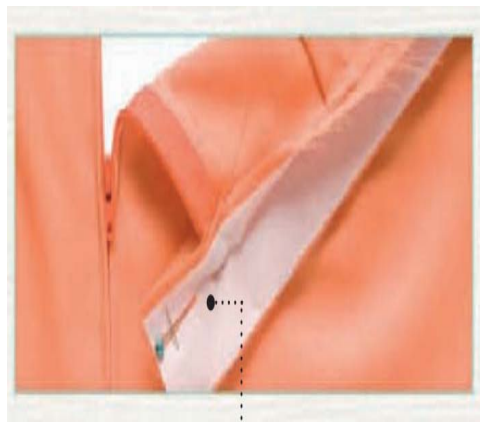
The neatened edge of the waistband should extend 5 /8in (1.5cm) below the stitching line.

6 Pin the end of the waistband in line with the centre back.



7 On the right-hand back at the waist, fold the waistband in half, right side to right side.

8 Extend the waist/skirt stitching line through the waistband and through the end.



9 Turn the ends of the waistband to the right side. The extension on the waistband should be on the right-hand back. Add your chosen fasteners.

Page 18 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



10 To complete the waistband, sew through the band to the skirt seam. This is known as stitching in the ditch.



11 The finished straight waistband.





Self-Check -1

Written Test

Answer the following questions

1. List down some preliminary operations during garment assembling (3pts)

Note: Satisfactory rating – 3 points Unsatisfactory below 3 points

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

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____



Information Sheet-3	1.3.Conducting first fitting
---------------------	------------------------------

How to fit your garment and the fit process

In this section we will be covering how to fit your garment.

The Fit Process

Receive Sample - Check in

Review Sample - Construction, Specs, and Pattern

Evaluate Sample on the Form - Preliminarily determine any issues

Fitting Defined

So what does it mean when we fit our garment? To fit your garment is to compare your requested design and specs to the sample you've received from the factory. When fitting the garment on the form/model you are confirming that your requested specs are appropriate for the design intent and fabric choice of the specific style. To create a consistent fit, your final specs should always relate back to your size chart.

Step 1: Receive Sample & check-in

After you've requested your sample from the factory, you will receive a garment prototype. When your prototype comes in, it is important properly check it in to keep your samples organized. In most cases, your factory will have attached a sample label with information about the prototype. Here is what should be included on your prototype label/tag:

Style Number

Page 21 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Factory Name

Factory Contact

Sample Number (P1, P2, P3, etc. "Prototype 1")

Mens/Ladies/Children (if it is not apparent from the style number)

Date Sent, Date Checked In

Reviewers Name (Technical Designer or Assistant)

Optional: Color Coded Sticker (Color represents the Sample Number)

Step 2: Review Your Sample

step-by-step how to review your first prototype sample. In Here's a quick recap on how to review your sample before the fit session:

- Measure Your Garment
- Compare and Highlight Specs out of Tolerance
- Check Construction
- Check the Pattern and Compare it to the Sample

Step 3: Check Your Sample on the Form

Before getting into the fit session with your team, your Tech Designer should check the garment on the form. This preliminary fit allows the Technical Designer to determine if there are any anticipated fit issues, specs or design lines that need to be adjusted, or construction that needs to be improved. By conducting a preliminary fit, the Technical Designer can lead an efficient fit session. This also

Page 22 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



allows the Technical Designer enough time to determine the cause of any puzzling fit issues. It is the Technical Designer's job to have a holistic understanding of the garment, flaws and all, before entering the fit room.

Here's what to look for when you have the garment on the form:

Because you have already checked your specs, take note of any specs that may need to change. Do you like where the design lines lay? Are there any obvious design or fit changes that are due to the requested specs? Perhaps a pocket opening needs to be a bit longer to comfortably fit the hand. Or maybe the length needs to be a bit longer to reflect the design intent.

Step 4: Fitting & Fit Session

The Fit Session

Taking our knowledge about the garment from Step 3, we can now relay that information to our design team. Together, you will make decisions about the fit and design of the garment. This is called the Fit Session. The members that attend the Fit Session are the Designer, Technical Designer, Assistant Technical Designer, Developer, and the Merchandiser. Together, this team evaluates the sample and makes decisions about how to move forward on the design.

It is the Technical Designer's responsibility to host the Fit Session and lead the team through the sample, point-by-point. Traditionally, the Fit Session happens in a separate room at the brand headquarters. This room is designated for fittings and includes a large seating area and table, with enough room to see and evaluate the garment. The room also should have a private dressing area and mirror. Keep a copy of the model and/or fit form measurements in the fit room for ease of reference.

Fit Model vs. Fit Form

Page 23 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Even the most perfect Fit Model will not reflect your size chart perfectly. Not a single person is 100% symmetrical and there will be slight variances in a person's posture and form. You can fit your garment solely on a form. I find this method best, not only because it negates any emotional connection, or lack thereof, with the Fit Model, but it also allows for:

- More honest feedback about the design
- Flexibility in fit time
- Saves you money on booking a Fit Model (because you've already paid for that Fit Form - so use it!)

However, a fit model is always necessary for final fittings, to ensure the wearability of the garment, especially if the integrity of the design is dependent on the functionality or mobility of the piece. On the other hand, Fit Models (if you can find and book an experienced one) can help with addressing issues of wearability. They can identify certain issues only a wearer would be able to know, such as if the garment is hard to get on or off, if it is itchy, or if something feels off about the garment. Regardless, it's important to always have a form in the fit room during the fitting. If fitting on a Fit Model, let's say on a P2, you can throw the P1 on the form and compare the two versions visually. This allows you to backup the choices for spec changes with hard evidence. Remember, as a Technical Designer it is your job to educate and guide the rest of the team on the appropriate changes to improve the sample.

The Fit Session Process

The Technical Designer will review the specs and any concerns about fit issues or patterning while the garment is on the Fit Model (or Form). There is flexibility in how and in what order the Technical Designer leads the team through the sample, but here is an example for you to follow:

Page 24 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



First, the Technical Designer will get the sample on the form/model.

Technical Designer reads off the Style Number and other important information so that all members are looking at correct notes.

Technical Designer reviews what changes we made last time (if applicable).

Technical Designer addresses any issues that are immediately known from his/her review.

Technical Designer asks the team about their thoughts on the garment, referencing design and fit intent. After doing so, the Technical Designer may make some updates to the specs before continuing.

Technical Designer reads the specs that are out of tolerance, sometimes referencing landmark points for reference (bust, waist, hip).

As each spec is read, the team decides on whether to go BTS (back to spec) or update the spec.

The Technical Designer addresses any pattern or construction issues that impact the fit of the garment.

The Technical Designer will take photos of the garment on body - front, side, back, and any detail shots - for use in the Tech Pack and Review Comments.

At this time, if using a Fit Model, the rest of the steps can be completed on the form.

Fit Session Tips

The Technical Designer records notes and spec changes on the spec sheet from the tech pack. However, other members of the fit session, like the Assistant Tech

Page 25 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Designer, may find it helpful to use a fit sheet.

When in doubt on spec changes, reference the model or form measurements and size chart to ensure consistent sizing.

Wear Test and Wash Test

before going into production, you or a member of your team wear tests a final sample. A wear test allows you to understand how the garment performs over wear time. This allows you to address anything that is awry, like itchy fabric or uncomfortable seams, before you're committed to your production run. Additionally, during the development phase you should perform a wash test to see how the fabric and construction performs over several washes.

Fitting Size Sets

Once your base size fit is approved, you will need to request a Size Set to confirm the grade. If you are confident in your grade and have used it on this type of silhouette before, you may only need to request a JSS (Jump Size Set). In any case, it is important to fit these final checks on a Fit Form (if you have extended sizes) and a Fit Model.

Step 5: Writing Fit Comments

Self-Check -3	Written Test
---------------	--------------

Page 26 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Instruction.explain the following questions as required

1.mention how to review your sample before the fit session(3pts)

2.List team members that attend in the fit session to evaluate and make desions about the fit and design of the garment(3pts)

3.Fit Model is important than Fit Form,mention why?(2pts)

Note: Satisfactory rating – 8 points Unsatisfactory below 8points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____



Information Sheet-4	1.4.Handling appropriately material
---------------------	-------------------------------------

Define material handling system

The means used for transporting work (like fabrics, cuttings, bundles, finished garments and general items) from one place to another, storing materials and protecting material from damage, are called material handling system. It may be an equipment, device or procedures. For better material handling, equipment are engineered according work place design.

As said above there are different type materials handling systems based on process requirement. Whether it is a new setup or an existing setup, factories have many options for choosing one out of available material handling. Common material handling systems found garment manufacturing units are listed here.

Material handling equipment for sewing department

Garment stitching department does stitching of garments from fabric (cuttings). Different types of line layout for stitching line are found in the garment industry. Based on the production line layout, material handling system is designed. In stitching department material handling system is needed for transporting bundles from one workstation to next workstation, and for storing WIP.

Conventional side table (with bin):A side bench or a side table is placed for loading cuttings and disposing stitched garments. This kind of layout is normally found in group production system and make-through production system.

Centre table:Centre table is the most common material handling system used in the production line (progressive bundle system and single piece production system). A bench (2-1.5 ft wide) is placed in between two rows of machines

Page 28 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



conventional stitching line centre table



Conventional centre table (two tier)

Trolleys: Cutting bundles are stacked on trolley and the trolley is moved in the line. Some factories found it difficult to assess WIP in the line by using trolley system. These trolleys are useful for trouser manufacturing.



Trolley for bundles

Plastic crates and Bins: Bins are used for disposing stitched garments. Plastic bins are used for transporting garments from one place to another.

Overhead production system (unit production system): Many production units use overhead rail and hanger for transporting material. Factories found it is easy to track WIP on the UPS system. Some factories experience issue in line balancing. Different types of overhead hanger system are available. Example of manual hanger system and computerized hanger systems are shown in following images.

Manual hanger system:



Manual hanger system



Semiautomatic hanger system:



Semiautomatic hanger system

Computerized hanger system:



Computerised Overhead material handling

Material handling equipment for finishing department:

In the finishing department, garments are pressed, checked, folded and packed. In finishing section garment pieces move number of workstations before pieces are packed into the polybag. Common material handling equipment found in the finishing section includes -

Trolleys: Transporting garments from one workstation to another workstation.

Page 31 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



Trolleys

Trolleys

Hangers and stand: Sometimes garments are not folded and shipped in full length in hangers. Pressed garments are hanged on hangers and stored in a stand.



Hanger stand used in garment pressing section



Self-Check -3	Written Test
---------------	--------------

1.List down different Material handling equipment for sewing department(3pts)

2.What is Hangers and stand material handling system(2pts)

Note: Satisfactory rating – 5 points Unsatisfactory below 5points

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

Answer Sheet

Name: _____

Date: _____

Score = _____
Rating: _____



Operation title 1	Constructing the Standing Collar
-------------------	----------------------------------

OPERATION TITLE: Constructing the Standing Collar

PURPOSE: enable to construct stand collar shirt components and fitting

EQUIPMENT, TOOLS AND MATERIALS: - sewing machine, cutting machine, finishing equipments

CONDITIONS OR SITUATIONS FOR THE OPERATION: - given necessary tools & equipment's. You are required to perform the following within 20 minutes

PROCEDURE:-

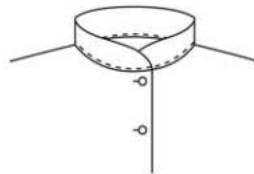
Step-1: Fuse interlining to wrong side of one of the collar band

Step-2: Turn in seam allowance and stitch the folded edge

Step-3: Put the two collar bands with right sides together, run stitch collar Step-4:

Trim and clip seam

Step-5: Turn and press.



Standing collar

LAP Test 1	Practical Demonstration
------------	-------------------------

Name: _____

Date: _____

Page 34 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Time started: _____

Time finished: _____

Instruction:

Constructing the Flat Collars



Flat collar

PROCEDURE:-

Task1.Fuse interlining to wrong side of one of the collar pieces

Task2.Run stitch and trim seam allowance

Task3.Turn collar to right side

task4.topstitch around edge of collar

LG #41	LO #2- Assemble garment
Instruction sheet	

Page 35 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



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

- OHS practicing
- Sewing pieces
- Pressing garment
- Assessing second fitting garment
- Determining modifications in consultation

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:

- OHS practice
- Sew pieces
- Press garment
- Assess second fitting garment
- Determine modifications in consultation

Learning Instructions:

Read the specific objectives of this Learning Guide.

1. Follow the instructions described below.
2. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them
3. Accomplish the “Self-checks” which are placed following all information sheets.
4. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
5. If you earned a satisfactory evaluation proceed to “Operation sheets



6. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
7. If your performance is satisfactory proceed to the next learning guide,
8. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet-1	2.1.OHS practicing
---------------------	--------------------

Page 37 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



following marked walkways

What is Floor Marking?

Floor marking is the process of using visual cues such as lines, shapes, and signs on floors to make a space easier for people to navigate. These cues divide spaces, highlight hazards, outline workstations and storage locations, direct traffic, and convey important safety or instructional information. Floor marking is often part of a larger visual communication system that includes wall signs and labels.

Why Use Industrial Floor Markings

The following are some key reasons why so many facilities use industrial floor markings.

- Organizational Improvement- Any increase in organization at a facility will reduce wasted time and energy. Identifying storage or staging areas, for example, can quickly let people know where things need to be.



housekeeping

The garments industry generates a lot of dust from fabrics being cut and sewn.

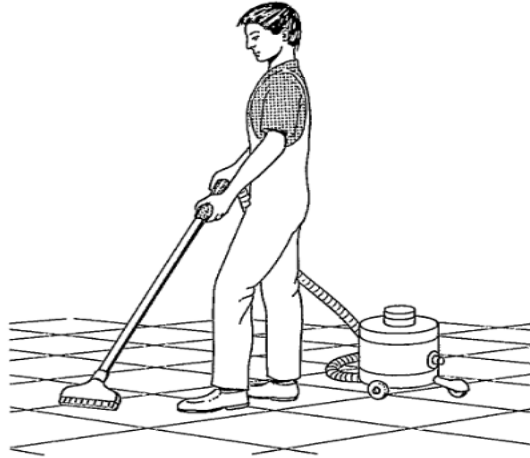
Page 38 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



Solvents used for cleaning fabrics and garments may cause fatigue, headache and dizziness. Dust and solvents, when breathed, can lead to lung diseases and are very dangerous. High levels of dust interfere with efficient production and require cleaning operations that may spoil materials and finished products. Improved conditions usually mean increased output, higher productivity and quality. There are simple and inexpensive ways to control most of the environmental problems. Improvements often result in cost savings, productivity benefits and increased safety of workers. The following rules provide a series of low-cost measures for sound environmental control.

Clean regularly and properly

- do not spread dust Dust originates from fabrics and threads, from cutting and sewing to packing operations. Thus, it is very common to see small clothing enterprises with ceilings and walls full of dusty cobwebs. Even machines which are not regularly cleaned could be full of dust which may cause them to break down. Dust increases wear and tear on machinery, necessitating more maintenance. It also negatively affects the quality of raw materials and finished products. Dust entering the respiratory system can damage the worker's lungs. Some dust can also cause allergies. Dust should be removed regularly and eliminated from the source. One low-cost cleaning method is sweeping the floor carefully with an appropriate broom and accompanying dust pan to prevent dust from spreading. Spraying water on the floor before sweeping will avoid dust remaining airborne. When dust is moistened it can be easily removed with a broom, More effective methods of controlling dust include using a vacuum cleaner or a wetmop (



standard operating procedures/SOP

SOP can be defined as a step-by-step written procedure about how to do a job that gives the desired result and maintains consistency in results. SOP can also be defined as a checklist for the user (operator) who is going to do a particular job. An SOP is a sure success method of doing a job.

More than just written instructions SOP can be also made using illustrations and flow charts. For some processes factory only needs to provide detailed instructions to perform a task, where some processes required instruction as well as decision making based on the result of intermediate steps.

A Standard Operating Procedure (SOP) is a standardized process that outlines a set of detailed instructions to help workers perform complex tasks properly and safely. The main objective of standard operating procedures is to develop an effective quality system and comply with industry-specific regulations and standards. Failure to follow SOPs can cause significant errors in production and operations, increasing unwanted work variations.

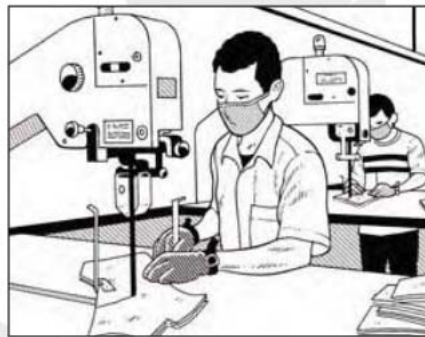
personal protective equipment

Page 40 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Personal protective equipment (PPE) refers to specialized garments or accessories such as clothing, gloves and so forth that fulfil a protective function against various hazards, mechanical or chemical, when worn by workers.

Personal protective equipment garments are divided into full-body protective gear and partial-body protective gear. A protective suit is an umbrella term for any item of clothing or suit which protects the wearer against a variety of different harmful agents. The full body garment may or may not include protection to the wearer's hands feet and head. Personal Protective Equipment, are the tools that ensure the basic health protection and safety of users. PPE is any device or appliance designed to be worn by an individual when exposed to one or more health and safety hazards. Employees must be aware that the equipment does not eliminate the hazard; if the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.



Protective Clothing

Protective Clothing is designed to protect a person's skin and clothing from damage or injury caused by splashes or spills of chemicals, excessive heat, or

Page 41 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



falling objects.

Over Coats, which extend below the knee, are recommended in all garment work areas and must be buttoned up to be effective.

Gloves are used for protection against skin contact or cuts when handling certain chemicals, hot or cold objects, or glass.



safe storage of equipment

The storage and handling of raw materials, components and products is an integral part of most production processes.

Better organized storage

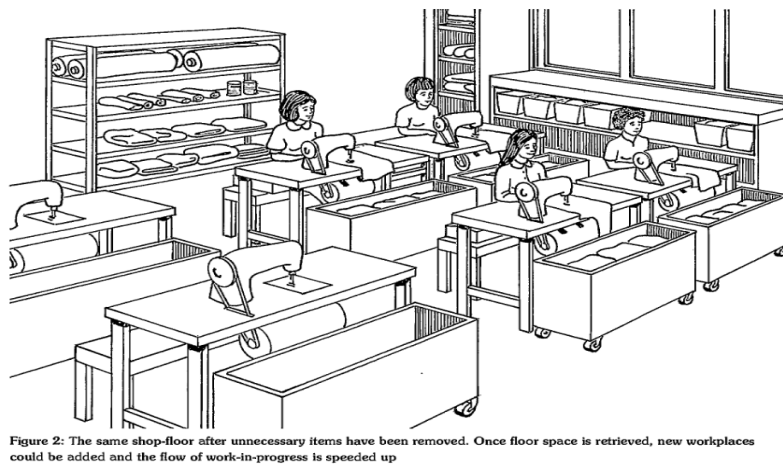
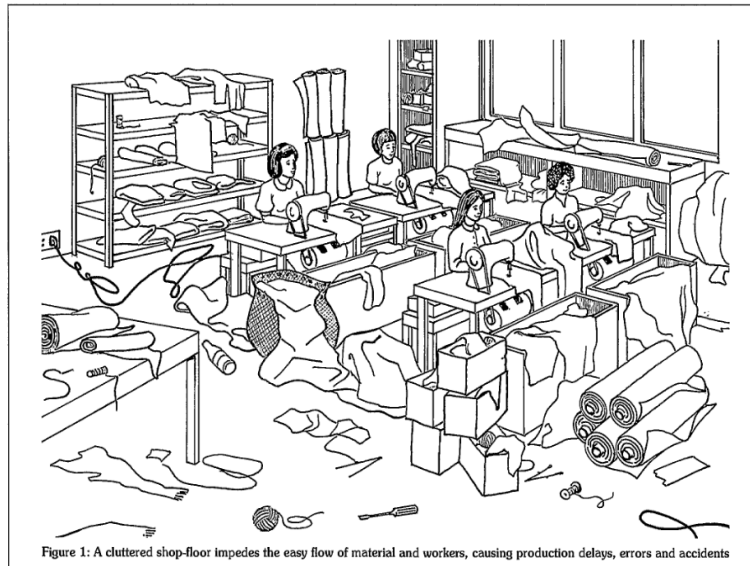
It requires storage, record keeping and handling. The more cluttered your shop-floor, the more likely materials and work-in-progress will be mixed up or lost. Workers spend valuable productive time looking for things. Consider each piece of raw material, each box, each container, each tool, each machine.

Figures 1 and 2 show the same work area before and after unnecessary items were removed. "just-in-time", The basic principle is that materials are brought to the production area only as and when they are needed. A good layout reduces

Page 42 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
----------------	---	--	------------------------------



accidents and promotes health and safety for the workers. A poor layout increases material-handling, and manufacturing costs, creates bottlenecks and delays, and contributes to damaged goods.



safe materials handling

Page 43 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



Good practices for materials handling in production lines

- Use line pick-up trays to feed garment bundles into the production line.
- Use movable wheel carts to transport materials to the workstation.
- Use hanging-rails on wheels to prevent crumpling of ready-to-deliver products and make transportation of finished items safer.

Benefits

Reduces the amount of time spent on materials handling.

Improves product quality.

Reduces the amount of storage space needed for finished goods and materials.

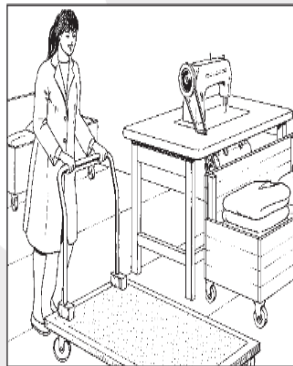
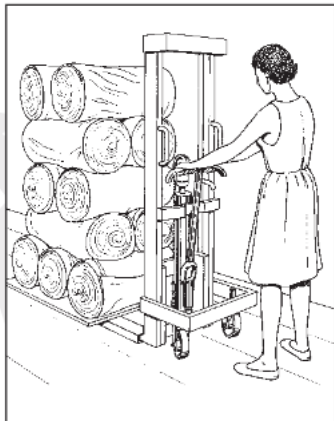
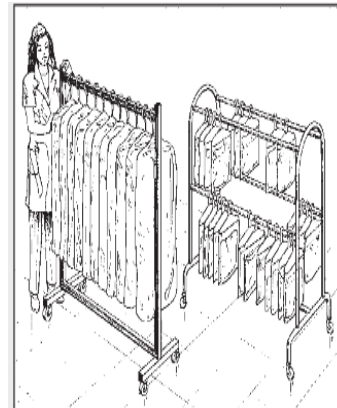


Figure 9



What should your employees know before moving, handling, and storing materials?

In addition to training and education, applying general safety principles—such as proper work practices, equipment, and controls—can help reduce workplace accidents involving the moving, handling, and storing of materials. Whether moving materials manually or mechanically, your employees should know and

Page 44 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



understand the potential hazards associated with the task at hand and how to control their workplaces to minimize the danger.

Because numerous injuries can result from improperly handling and storing materials, workers should also be aware of accidents that may result from the unsafe or improper handling of equipment as well as from improper work practices. In addition, workers should be able to recognize the methods for eliminating—or at least minimizing—the occurrence of such accidents. Employers and employees should examine their workplaces to detect any unsafe or unhealthful conditions, practices, or equipment and take corrective action.

Self-Check -1	Written Test
---------------	--------------

Answer the following

1.define Overcoat and glooves

2.list benefits of safe materials handling

Information Sheet-2	2.2.Sewing pieces
---------------------	-------------------

The Complete Guide to Sewing a Dress

Page 45 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Sewing a dress might seem like a big task, but even those just starting their sewing journey can accomplish it! Dresses are actually great beginner projects, as long as you choose a simple style and an easy-to-use fabric.



The key to sewing a dress is to treat it as a series of components. Each component might have several steps, which are set in a specific order and build upon each other. Once you have completed one component, you move on to the next — soon enough your dress will be done.

Facings

Sew a sleeveless dress likely includes facings for the neck and armholes, either in one piece or separate pieces for the front and back.

Facings typically have interfacing; the pattern instructions will indicate which pieces need to be interfaced. You can cut out the interfacing separately and then fuse or sew it onto the facing pieces, or you can block fuse the fabric. (Block

Page 46 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



fusing is a convenient method for applying interfacing prior to cutting out the pieces. Block fusing is a real time saver although it does use up more of the fusible interfacing.)

Always remember to line up the pieces along the grain line, watching for pieces cut on the fold as indicated on the pattern pieces.

On the Inside: How to Use Interlining, Lining, Facing and Interfacing

Details like interlining, lining, facing and interfacing can be overlooked in the garment construction process, but they make a huge difference in your finished product.

How to use interlining

Interlining is a layer of material between the outer fabric and the lining. It's usually included to give a garment additional warmth, but can also be used to change the garment's drape if you need to add more body. Interlining can be removable (a good example would be a winter jacket that has an outer shell made from thicker fabric and then an additional layer that can be zipped in and out), but can also be a permanent part of the garment. It's an easy way to make a pattern or fabric work for you if it's not quite warm enough, since interlining can be added even if the pattern does not call for it.

Sewing interlining

To sew interlining, cut your pattern pieces (usually just the main parts of the garment, like the body and sleeves, not the smaller details, like a collar) from the interlining fabric. Examples of synthetic interlining include Primaloft and Thinsulate. Flannel, fleece, cotton batting and chamois can also be used. Baste the interlining pieces to the main fabric before proceeding with construction. You'll probably need to trim out the interlining from your seams to reduce bulk as you

Page 47 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



sew.

How to use lining

Lining can serve many purposes: to hide interior seams and construction details (like interlining!) for a clean appearance, reduce garment wrinkling, help smooth out your figure, and make the garment more comfortable to wear.

Sewing lining

Lining is attached at the facing or hem, and can be machine or hand sewn in. The wrong side of the lining will face the wrong side of your main fabric. Linings are usually a silky, slippery material to help the garment slip on and off easily. They also feel great against your skin!

Silk charmeuse and silk crepe de chine are both good fabric choices for lining. If the price is a deterrent, you can also find polyester charmeuse, but it won't be nearly as wonderful as the silk version.

Lining can be a design element in its own right, so it might be worth the hunt for an amazing printed charmeuse to line your new wool jacket.

How to use facing

Facing is fabric applied to the garment's inside edge. Like lining, it can serve several purposes: to provide contrast, decoration or strength. Facing gives the garment a clean look, since it hides the raw edge between the wrong side of the fabric and the wrong side of the facing. They are usually used in place of a full lining.

Sewing facing

Facings are usually cut from the same fabric as the rest of the garment, typically

Page 48 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



from different pattern pieces. Facings are often interfaced, to help them keep their shape or to provide a little extra stiffness. Necklines and armholes are areas that are commonly faced.

It can be helpful to stay stitch the facing before sewing it to the garment, especially if the facing is not interfaced. After the facing is sewn on, you will need to clip into any curved areas for the facing to lie flat. Understitch the seams to the facing, close to the seam line. The bottom edge of your facing hangs free and will need to be finished — this can be done by pinking, turning up the edge and topstitching, or applying bias tape (although this option will add the most bulk).

Finishing the bottom edge can also be done before sewing on the facing. When pressing the garment, you will want the facing to roll a bit to the inside of the garment so that the seam does not show on the outside. Pressing the garment well is important to get a crisp edge. Topstitching the facing to the garment is also an option.

How to use interfacing

Interfacing is an incredibly helpful sewing notion. It's applied to parts of a garment to add extra body or rigidity, usually where a little extra strength or crispness is needed, like on a shirt collar or a button placket. It can also prevent seams and curved areas from stretching out. There's even knit interfacing for use with knit fabrics.

Sewing interfacing

Interfacing can be tricky to work with because there's a lot of potential for error (at least with fusible interfacing). For more information, see our tips for using interfacing. Just like with sewing interlining, it can be helpful to trim out the interfacing from your seams to reduce bulk.

Page 49 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Mark and sew darts



Fig.sewing dart

Your pattern will likely have a few darts. My pattern only has bust darts to provide some shaping. Transfer the pattern markings to your cut-out fabric. Darts are indicated by dots in a long triangular configuration, which you fold and stitch from fabric edge to the point. Sew your darts and press downward.

Sew the back zipper



Fig.sew back zipper

Page 50 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



If your dress includes a back zipper, as many do, it's more convenient to put in the zipper now, before the front and back of your dress are sewn together.

You can put in the zipper in a variety of ways:

- The simplest option is a standard centered zipper, sometimes called a railroad zipper.
- Another choice is to use an invisible zipper.
- In the example above, lapped zipper application is used, which you can do by hand or by machine.

Sew the shoulder seams



Now that your dress front and dress back are both ready, you can sew them together at the shoulder.

Prepare the neckline facing

Page 51 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Time to start on the facings. apply the interfacing to the front and back neckline facings.

Stitch the back neck facings to the front neck facing at the shoulder seams. Most likely, you'll have one continuous piece for the front facing and two pieces on the back to accommodate the zipper.

Press the shoulder seams open, as you did on the dress shoulder seams. You can finish the outside edge of the facing by turning under and stitching or use a serger to finish the edges.

Attach neck facings



Pin the neckline facing to the dress neckline, right sides together. Match the

Page 52 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



shoulder seams of the dress with the shoulder seams on the facing pieces.

Note that at the center back the facing will stick out past the dress edge. That's because the zipper already used up the 5/8" seam allowance, but the facing still has it. Don't trim it off or try to get the center back edges to match! The 5/8" seam allowance on the facing will be folded under later to create a clean finish at the top of the zipper.



Stitch the dress neckline facing in place.

Because this is a curved seam, you'll need to make small snips around the seam allowance so it can easily turn inside the garment. Make small cuts perpendicular to the stitching, ending close to the stitch line, but not through it.

Fold the facing toward the inside of the dress. If there are any areas that don't want to turn or don't sit well, add another clip to release the fabric in that area.

Page 53 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Then, trim the seam down to about $\frac{1}{4}$ ". This reduces bulk in the neckline.

If you prefer, you can first trim to $\frac{1}{4}$ " and then do the perpendicular clipping. However, it is difficult to clip that small seam allowance, so do the clipping first and trim second.

Press and under stitch neck facing



Press the neckline facing up and away from the body of the dress. Make sure that the seam allowance also stays up and doesn't get flipped down toward the body of the dress.

Page 54 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



Once the facing is pressed upward, understitch around the neck edge. Understitching is a row of stitching near the seam on the facing that helps the facing roll inside of the garment.



Now that the the neck facing is under-stitched, flip it to the inside of the dress and press around the neckline edge to create a smooth finish.

Sew side seams

Page 55 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Sew the side seams of the dress, matching notches along the seam. Remember to follow the seam allowance your pattern indicates.



Press the side seams open.

Prepare the armhole facings

The armhole facings are prepared in a similar fashion to the neck facings. My pattern happens to have a two-piece armhole facing, so the front and back pieces must be sewn together.

Note that the back armhole facing has a double notch and the front has a single notch. These pattern markings are common in most patterns, especially on

Page 56 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



sleeves and armhole facings. They help you distinguish between the front and back pieces.

Stitch the two facing pieces together, aligning it at the shoulder and underarm seams. Press the seams open and then edge finish the facing by sewing on the serger or turn under and stitch.

Attach the armhole facings



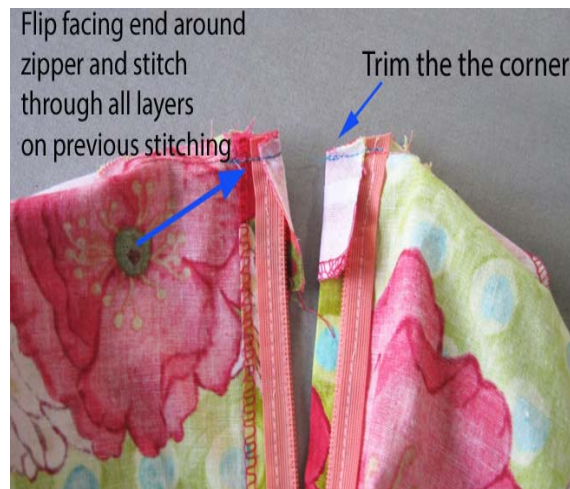
Pin the armhole facings to the armhole, matching front and back notches as well as the shoulder and underarm seams. Stitch the facing to the armhole. Repeat for the second armhole.



As you did with the neck facing, clip and trim both armhole seams to reduce bulk and allow the facings to turn to the inside of the garment.

Under stitch both armhole facings. Unlike the neck facing, which intersects with the zipper, for the armhole facing you can under stitch completely around the armhole. Press the facing toward the inside of the dress.

Finish back neckline



To create a clean finish at the top of the zipper, flip the facing end around the top of the zipper and stitch through all layers, following the line of previous stitching. Trim the corner diagonally on both sides.

Page 58 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



Flip the facings back to the inside and push the corner out to make a crisp edge. Press the facing down.

Finally, stitch a few hand stitches along the edge of the facing where it meets the zipper tape. Since a lapped zipper used, the facing edges tacked on either side of the tape.

Secure the facing edges



For those who don't like facings because they tend to flip outside the garment, I have a tip for you.

Tack those facings down by stitching in the existing seams. This is called “stitching in the ditch,” when you stitch through the outside of the garment on a seam line to secure layers that are underneath. This stitching is hidden in the seam and invisible on the outside.

Hem the dress



Time to hem the dress. There are many ways to hem:

- You can choose to sew the hem by hand, which creates a nice hidden hem
- Or, you can sew the hem with your machine

Information Sheet-3	2.3.Pressing garment
---------------------	----------------------

Pressing can be defined as a process which changes the geometric fibre structure of the area being pressed by the controlled application of heat, steam and pressure. In this sense, removing a crease from a garment involves the same change of fibre lay as that required to open a seam or to press a hem. With very few exceptions, every type of product manufactured by the clothing industry is pressed both during and at the end of its assembly, or at the end only. The

Page 60 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



exceptions are items of corsetry and underwear which, due to the materials and construction, do not require any form of pressing. At the other extreme from these “non-pressed” garments, the pressing operations required for a man’s constructed jacket can account for about 25% of the total production time for the jacket. Regardless of the extent of pressing which garments undergo, pressing is a crucial process which imparts the final finish to a garment. A garment always has greater hanger or package appeal if it is appropriately pressed and finished.

CLASSIFICATION OF PRESSING

The total process of pressing can be divided into two groups of operations:

- under pressing and
- final pressing.
 - Under Pressing

This term covers all of the pressing operations performed on garments during their assembly. Seam opening, dart pressing and the pressing of flaps and patches are typical operations within this group. Under pressing, when broken down into a sequence of operations, not only makes successive operations a little easier, but also enhances garment quality. For example, it is far easier for an operator to press a panelled back well if the component is on its own rather than closed to the shoulders and side seams of the fronts. This example demonstrates a good working principle for under pressing: when possible, the component should be positioned naturally during pressing and should not be constricted by other parts.

- Final Pressing

Sometimes referred to as top pressing or off-pressing, this group includes all the operations used to finish garments when they have been completely assembled. The operations involved can range from a simple smoothing out with a hand iron to about fifteen machine and hand operations which are required to top press a

Page 61 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



woman's lined coat. The extent of the operations is determined by the construction of the garment, the fabric and, in some cases, how well the garment has been under pressed during its production. There is no doubt that final pressing is the major process for finishing a garment and giving it its final appearance, but final pressing can only achieve the best results when performed on well made-up garments. Final pressing a badly constructed garment might help to ameliorate some of the faults, but it will never make a good garment out of what is basically a bad garment. T H E COM PON EN T S/ELEMENTS O F P R E S S I N G

Regardless of fabric, type of garment or the machinery and equipment employed, the majority of pressing operations have the same components.

Steam

The purpose of using pressurised steam is to relax the fibre structure of the fabric and make it pliable enough to be moulded by manipulation and pressure. Steam itself is an odourless, invisible gas consisting of vaporised water, and its white cloudy appearance is caused by minute water droplets interspersed in the vapour. In factories, steam is generated by boilers fired by electricity or fossil fuels such as coal, gas or oil. Depending on the number of pressing work stations in the factory, steam can be distributed from a central boiler room or by small boilers located close to the work station. There are also independent pressing units which have a built-in boiler for generating their own steam. Steam is a flexible, adaptable and efficient component of pressing. Some of its outstanding features are:

- It has a very high heat content.
- Its heat is generated at a constant temperature.
- It can be easily distributed and controlled.
- Water is relatively cheap and plentiful. Steam has been used throughout the centuries for pressing and it is still the best medium for this purpose.

Page 62 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020

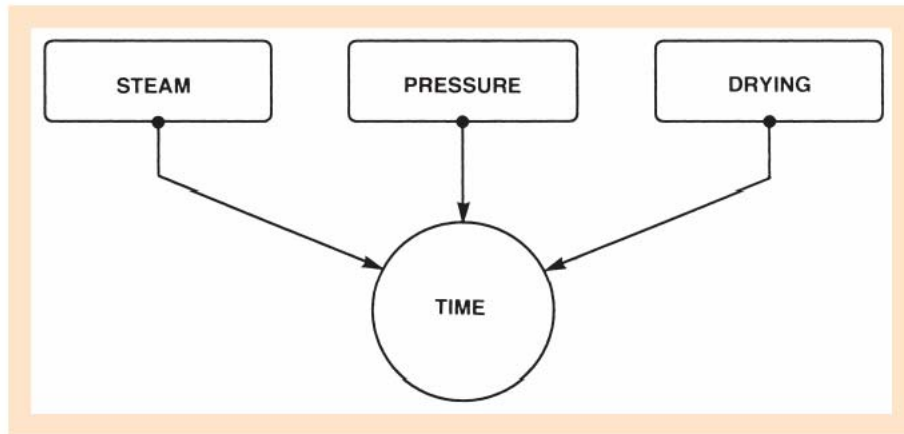


Figure 10.1.

After steaming, manual or mechanical pressure is used to change the geometric fibre lay of the area being pressed. After softening the fibre formation by steam and the application of pressure, each side of the seam has been folded to lay flat on the component. This structural change is typical of the majority of pressing operations.

Drying

Following the applications of steam and pressure, the area which has undergone these processes has to be dried and cooled in order that the fabric can revert to its natural moisture content and stable condition. The drying process is usually performed by a central vacuum pump which is connected to the pressing units, or by pumps built into the machine itself. The vacuum action removes the residual moisture from the material while it is lying on the pressing area.

Time

The length of time during which a component or garment is subjected to steaming, pressure and drying is a combined function of steam temperature, garment construction and the physical properties of the fabric being pressed. Whilst there are no fixed rules for the duration of these components, experimental trials utilising the appropriate fabric should be conducted prior to production. Accurate control of the four components of pressing is essential to the maintenance of uniform quality. This is one of the main reasons why pressing machines can be

Page 63 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



programmed for the duration, operating conditions and sequence of all of the elements within a specific pressing operation.

Pressing□

Involves no sliding of the iron. The iron is placed on the fabric and then lifted. Moisture is added from a pressing cloth or steam in the iron.

The Importance of Pressing and How to Press

Good pressing is important to good dressmaking and quilting. A professional finish can be achieved only by constant and correct pressing in the right way. Press as you sew! No matter how great a garment was made it can still look homemade if it has not been well pressed.

You will want to press with the tip of the iron to get into small places. Try not to stretch or pull your fabric when ironing. Sometimes if you pull or stretch and use steam you can permanently stretch the fabric out of place. Press on the wrong (or ugly) side of the fabric when ever possible, especially when pressing seams, darts, and pleats. NEVER press over pins. Most dress makers pins have a plastic head. If you press over the pins, they can melt and get onto both your iron and your project. Pins can also scratch your iron, which can leave a mark on your iron and snag your fabric.

Do not over press fine fabrics. Most of them have a soft looking appearance and flow on the body, so you do not want them to look hard or over pressed.

When pressing curved areas use a pressing cushion or tailor's ham. The best looking garments in the end have been pressed, pressed, and pressed after each sewing step!

Pressing is not just pushing a hot iron along fabric to smooth it, it must be held long enough to set the fabric in its new position. Pressing is a combination of

Page 64 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



pressure that you put on the iron by the strength of your arm when it needs it, heat temperature suitable for the fiber, not the fabric, and moisture provided by a steam iron for thin and lightweight fabrics. Always use a cloth when pressing on the pretty side of the fabric.

ALWAYS do a "test" pressing job to a scrap piece of fabric that you will be making your garment out of. During the sewing of the garment most pressing will be done on the wrong side or ugly side of the garment. In addition to pressing as the garment is made, a final pressing job should be done once the garment is complete, and then hung up and not touched for at least a day.

Types of Garment Pressing Equipment and Methods:

About the equipments or pressing machines that are used for pressing of garments, elaborate discussions are given below.

1. Iron:

In ancient times, heat were generated firing the coal or the wood in an iron made case and garments pressing or ironing were done under the smooth and hot surface of the case. With the passage of time, the use of the iron case has been replaced by the use of electricity, which (electric iron) is being used in houses till now. In electric iron, regulator is used to control temperature. Presently, steam iron, one step forward edition of electric iron, has come in the market. By supplying steam in the steam iron, the iron is made hot. By controlling a button in the steam iron by finger, the supply of steam through the iron is regulated. Steam is supplied in the iron through a pipe from the central large boiler or mini boiler and by operating the switch in the iron, steam is made out through a number of holes placed at the bottom of the iron. The shape of the iron is generally triangular and

Page 65 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



the weight may be from 1 kilogram to 15 kilogram.



Start Ironing

Fig: Iron

Ironing bed or table is required for calendaring of garments with the help of iron. For electric iron, generally flat bed or shaped bed can be used but for steam iron, ironing bed having facility of air-suction is required. Just after ironing bed, the heat and moisture of the calendared portions of the garment are removed instantaneously. As a result, the possibility of unwanted crease in the garments becomes less and the fabric dries quickly, moreover, the high quality pressing can be done comparatively in high speed. The dimension and shape of ironing bed may be of various types. If the ironing bed of special shapes are used, the ironing of the specific parts of a garment can be done very nicely and rapidly.

Very skilled operator is required for ironing of garments by steam iron with air-suction facility. Because, the measuring of the suction of steam and air and their proper use depend on the skill and honesty of the operator.

Page 66 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



2. Steam Press:

There is a static buck and a head in the steam press whose shapes are proportionate to each other. Keeping the garment on the buck, the head is placed on the buck and the garment is ironed by applying heat and pressure. The buck is set in a frame and the ironing bed is made by spreading a few layers of fabrics or foam on the buck. There is system of the flow of steam and air-suction through the buck. There are tables around the buck where the garments are kept. The head remains in a frame on which bedlike arrangement is made by a number of layers of fabrics or foam. There is arrangement for supply of steam also through the head. Generally, the head is brought down on the buck with the help of scissors action and pressure is applied.



Fig: Steam Press

In the old pressing system, the head is brought down on the buck by a foot operated switch and pressure is applied by the scissors action and by another switch operated by hand or by foot, steam is supplied through the head and buck. Finally, the head is brought upward by controlling another switch and air is sucked through the buck.

In modern and automatic steam press machine, all jobs are done automatically in cyclic order by switching only once. Specially how much amount of pressure the

Page 67 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



head will apply by coming down on the buck, how much time will supply the steam and then the head will go upward from the buck, how much time the air will be sucked through the buck etc. can be given pre-setting and if requires, they can be changed also. In the old system of garments pressing, skill operator is required, because, it is very difficult to maintain that when and what switches are to be controlled regularly and properly. On the otherhand, as the jobs are performed in cyclic order in the modern steam press, the job of operating of the machine is comparatively easy.

The head and the buck are generally covered by the silicon coated cover of polyester or nylon fabrics, which in need of time, can easily be removed and cleaned. The shape of the head and the buck may be of various types, these heads and bucks of special shapes are used for pressing of jacket and trousers. Because, it is convenient to press these garments very beautifully and rapidly.

In ultra-modern steam press, there are one head and a number of bucks. Both the head and the bucks are accelerated. In this situation, when the head continues to pressing, among the other two bucks, garments loading is done in one and the just pressed garments are removed to the other. This type of press helps in production by making vertical movement of the head.

3. Steam air finish:

This type of garments pressing machine is mainly known as “Puffer” or “Dolly” press. In Dolly press, there is a form in the frame in which arrangement is there for flowing of steam and compressed air with the help of a pipe. The pressing form is generally made by coarse canvass fabric. The size of the pressing form is used as per the size of the body of the garments, but there are no sleeves. Timer is used for flowing of steam and air for pre-setted time. An operator, covering from the upper side of the pressing form, pull downs a garment. Then steam is flowed from inside the pressing form with the help of a pipe, as a result, both the pressing form

Page 68 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
----------------	---	---	-----------------------------



and the garment swell up. This way, steam is flowed for first 8 seconds. Then hot air is flowed for the next 8 seconds.



Fig: Steam air finish/Dolly press/puffer press

As the outcome of garments pressing this way, if any unwanted creases are there in the garments, they are easily removed. Also minimum time is required for garments pressing. A padded clamp is used along the button hole lines so that during pressing the holes are not de-shaped. During pressing of the garments made with knitted fabrics in these machines, special care should be taken so that the volume of the garments is not stretched. In dolly pressing, there is no system of giving any creases in the garments but if any creases are required then it is done by hand iron or by steam press. For the purpose of pressing of garments of various sizes, the pressing forms of similar sizes are used.

Dolly press is generally used for pressing of t-shirts, blouses, night dresses, sports wears etc. but dolly press can also be used for pressing of jeans shirts, pants, jackets etc.



4. Steam Tunnel:

In this process, pressing is done without applying any pressure on the garments. Hanging the garments in hangers, the hangers are placed in the running rail. The running rail carries the hangers with garments through a tunnel. There are a number of chambers in the tunnel. In the first chamber, the required temperature is controlled by steam. During passing through the chamber, the garments hanging in the hangers are heated by steam and if there is any unwanted creases in the garments, they are removed due to the fabric relaxation causes by heat and for the pulling of the gravitation force. Then during the period of passing through the second chamber, the garments are dried by the flow of dry hot air.



Fig: Steam tunnel finishing machine

In this process, if there is any crease in the garments, they can be removed, but no creases can be created in the garments. Generally, steam tunnel is used for pressing of t-shirts or garments made with knitted fabrics.

Page 70 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Self-Check -1	Written Test
---------------	--------------

Instruction1:Answer the following questions

1.What is the difference between under pressing and final pressing.

2. List and explain elements of pressing brefiely

3.in which garment pressing machine A padded clamp is used along the button hole lines so that during pressing the holes are not de-shaped?



Information Sheet-4	2.4.Assessing second fitting garment
---------------------	--------------------------------------

What Makes a Perfect Fitting Session?

The perfect fitting of a garment lies at the heart of your customers' evaluation of an apparel product. With vast differences in body shape and size, fit problems form the basis of returns of online clothing purchases.

As part of the product development process, designers and their team, typically develop sample size garments for a specific size range based on their target market.

When a sample is finished, it is usually checked for fabric type, compliance with specified garment measurements, and construction details. However, it's imperative that the garment is evaluated on a model in order to judge comfort, appearance and last but not least, fit.

Garment sizing and fit

Page 72 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



garment sizing and fit has evolved over time. ready-to-wear garments categorised into sizes, fashion has changed from the era of tailor-fitted garments to mass-produced garments. Current garment sizing is based on the standard measurements of one single fit model of the ideal customer that is representative of the target market for a given style of garment. The garment patterns are adapted from basic block patterns that have been created to 'fit' a standard average-sized person or a person within the target market of the specific retailer.

A sample garment, produced from the adapted patterns, is then visually evaluated on a fitting model that also represents the average size of the different retailers' target markets for that garment style. Once the fit is approved, the patterns are produced in a range of different sizes according to a set of grade rules derived from a size chart. The range of garments within the different clothing sizes is then created by an apparel firm to fit a targeted range of customers. The size chart, comprised of key body measurements, is used to define a range of garment sizes within a fashion line, and this is crucial to ensure fit consistency across the size increments.

In an attempt to standardise garment sizing, and hence customer satisfaction with the fit of ready-to-wear garments, various garment-sizing systems have been developed worldwide. These systems define aspects such as the key body dimensions that should be used, how garment types are grouped together, how figure types are defined and how garment sizes are described.

Colour measurement and fastness assessment

The use and usefulness of colourfastness testing

It is unrealistic to expect that an item will be serviceable without some form of assurance: no manufacturer or retailer will let an item be sold and trust that consumers will find it acceptable, for in doing so they risk loss of money,

Page 73 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



reputation and future business.

The most realistic means of determining acceptability is to produce sample garments and conduct a wear trial with selected consumers to see when and how failure occurs. Such real-life wear trials are occasionally performed. However, finding volunteers who are typical, organizing the distribution of items, writing good instructions to the volunteers, recovering the garments, analysing the results and drawing conclusions are highly expensive of time and money. Laboratory testing provides an economical and useful alternative. Standard test methods are developed that are designed to approximate to a single real-life property, and to predict how an item will respond when faced with that individual challenge. Such tests are typically economical to perform and provide results rapidly.

A good product is not characterized by a single property, but a list of minimum requirements in several tests can come close to predicting overall satisfactory performance, and such a list forms a 'product specification' against which a product's test results can be compared to determine general acceptability.

Testing may be conducted for one or more of many reasons. At the various stages of the supply chain quality control testing is conducted on incoming raw materials, to monitor a given process, and on the finished product in a well-coordinated quality assurance programme. Ultimately, all the various components are assembled and the finished product should be tested to predict its performance in use. At the product development stage, testing will avoid impossible fastness demands, and can assess a company's product against those of its competitors. The use of hang-tags on garments that inform the consumer of a particular advantage in a garment must be backed by testing.

Some unsatisfactory items do get made and appear on store shelves. When, inevitably, they are returned by the customer, testing is a valuable tool in analysing the cause of the failure.

Page 74 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Garment Fitting

Apparel fit is the relationship between the size and contour of garment and those of the human body. A well fitted garment is a garment that hangs smoothly and evenly on the body, with no pulls or distortion of the fabric, straight seams, pleasing proportions, no gaping, no constriction of the body, and adequate ease for movement. Hems are parallel to the floor unless otherwise intended, and the garment armholes and crotch do not constrict the body. It can be defined as a simple matter of length and width in each part of the pattern being correct for the human figure.

Fit refers to how well a garment conforms to the three-dimensional human body. Good fit is crucial to customer satisfaction. However, it is often easier to find clothes in right colours, prices and style that one likes than a well-fitted garment. The effect of a stunning design, gorgeous fabric and exquisite workmanship are destroyed if the finished garment doesn't fit well to the intended wearer. Fit problems may be caused due to careless design, construction or may be the result of individual characteristics of an individual's body. No two

bodies are alike, and sometimes even the left and right halves of the same body are not mirror images of each other.

New technology promises to overcome these problems; a new computer system can optically measure an individual's body in three dimensions. This data is then converted to a computerized, individual pattern, a man's suit designed by this method is ready to be cut out and ready to sew within 7 minutes of receipt of the measurement data. The resultant garments fit accurately as the computerized scanner detects subtle nuances in the shape of the body that normal

Page 75 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



measurement systems are unable to read. These systems are on the stage of trial; but they would be costly and would take a long time to be readily available.

There are varying opinions on what comprises a good fit. Personal preferences regarding fit are governed by current fashion trends, cultural influences, age, sex, figure type, and lifestyle. The intended end use of the garment also affects the desired fit. For example, a person needs more ease for active sportswear than for spectator sportswear like in a tracksuit.

The relation between the size charts and body dimensions is not constant because of the changes that occur in the human population. Recent body surveys in UK, US, China, Germany and other countries proved that a garment sizing system for a certain body type does not cover more than the 25 per cent of the population for which it is addressed. Correct sizing is a prerequisite to good fit and customer satisfaction. Fit is a function of sizing and it affects comfort, durability of a garment. Sizing is often overlooked as an important issue

Page 76 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Self-Check -1	Written Test
---------------	--------------

Explain the following questions

1.What is Apparel fit?

2.what are Fit problems,list some reasons

Note: Satisfactory rating – 10 points

Unsatisfactory below 10points

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

Answer Sheet

Score = _____

Rating: _____

Name: _____

Date: _____

Page 77 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Information Sheet-5	2.5.Determining modifications in consultation
---------------------	---

REVIEWING THE SAMPLE: 5 STEPS

STEP 1: MEASURE YOUR GARMENT

Before fitting your garment, you will need to measure it against your specs. It's important to measure your garment first before fitting it because fitting your garment can stretch the fabric. It's best to evaluate the garment exactly as the factory delivered it to you.

Lay your garment flat on a large table and smooth out any wrinkles without stretching the garment. Use your hard edge ruler and tape measure to compare your POM's to the actual sample measurements, following your Measurement Guide. Repeat these same steps for the back of the garment.

After you've measured your prototype, highlight the specs that are above or below tolerance. Make a note of what fit issues you expect to see based on the measurements out of tolerance.

Page 78 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



As a general rule of thumb, it's a good idea to request that the factory check the specs before sending the prototype. In most instances, it can be helpful to have them send along a pattern as well. Having these additional resources allows you to compare your measurements to the factory's so you can see areas where they may be following a different method. If they measure it before sending and notice specs that are out of tolerance they can fix the garment before sending it to you, saving you time and money. You and your factory should both be following the same measurement process to ensure both parties are comparing the same POM's. This is usually achieved by having a master measurement guide that is shared with your factory. Having the pattern can help you determine if fit or measurement issues are due to the pattern or construction.

STEP 2: CHECK CONSTRUCTION

Flip to your Technical Sketch and Construction page in your Tech Pack. Start comparing your construction callouts from your Tech Pack to the sample.

Some helpful questions to answer are:

- What's different from the Tech Pack?
- Do you like how the factory constructed the garment (even if it is different than what you intended)?
- Are there any things that you would change or improve?

Make note of any revisions you'd like to see and update your Technical Sketches to reflect those changes. Double check common problem areas like the pockets for holes, buttons and snaps for security, and look at the stitching closely.

STEP 3: FIT

Page 79 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Next, put the garment on a form which reflects your base size. Begin evaluating the fit by looking for drag lines and stress points. Ensure that the garment is laying correctly on the form before you begin making fit changes. If you need to check the movement or function of the garment you can fit it on a model who closely compares to your base size.

Some helpful questions to answer are:

- How could the fit be improved?
- Does the fit of the garment reflect your design intent?

After you've completed evaluating the fit, take photos to include with the comments that you will send back to the factory. It can be helpful to draw on the photos with arrows and text when referencing specific problem areas.

STEP 4: WRITE COMMENTS

It's important to be organized and consistent when writing comments. In most cases, language and cultural barriers will play a factor in communication, so the clearer you can be, the better. If your Points of Measure are numbered, reference those numbers in the comments. If your factory has sent comments with the prototype, address them. Create a consistent format for your comments so that your factory knows where to look for information.

It's a delicate balance being clear and being kind. Sometimes it may feel like your comments are too blunt but adding too much "fluff" in your writing will be confusing. Be clear, concise, and use words like "please" and "thank you" where appropriate.

Take the notes you made while reviewing your sample and add them to your Tech Pack on your Prototype Review page. You may not need every section below, but always address the three main elements we talked about earlier, Design,

Page 80 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Fit/Function, and Construction.

Here's an easy format to follow for your comments:

HEADER

Prototype #, Date, Style #, Name of the Factory (especially if you are dual sourcing)

Ex: "P1, 5/9/18, #OG208, Harvest"

INSTRUCTIONS

A small instructional blurb to let the factory know what any abbreviations or highlighted measures mean.

Ex: "Measurements in red represent measurements out of tolerance and revised measures."

Cells highlighted in blue represent over ¼" difference between factory and [Company/Brand Name] measures.

BTS = Back to Spec"

DESIGN

Add any comments about design changes here.

Ex: "Please add zipper garages at the top of the hand pockets. The sketch has been updated to reflect it."

MEASUREMENT

Comment on any measurements that need to change or be brought back in to

Page 81 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



tolerance referencing the POM code.

Ex: “#002 CB Length is adopted as sampled.

#145 Back Neck Drop is out of tolerance. Bring back to spec.”

CONSTRUCTION

Add any comments about construction, such as stitch or seam changes or callouts.

Ex: “Please correct the bottom CF zipper to be bartacked.

Clean the back yoke seam with binding.”

PATTERN

Add any comments about pattern updates here. If you are sending a pattern to the factory, include the tracking number in your comments.

Ex: “Please correct the shape of the armhole. See P1 photos tab. A pattern has been sent with the correction, tracking #125849”

NEXT STEPS

Finally, finish up with a call to action statement. Is the prototype approved? Are you asking for another sample? Let the factory know.

STEP 5: SEND

Once you’ve completed your comments you’re ready to send your Tech Pack back to the factory for next steps. Don’t forget to double check you’ve included photos, updated sketches, comments, and tracking numbers if you sent anything to the factory.

Page 82 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Creating a consistent sample review process with your factory can be daunting at first, but over time both you and your factory will get used to a standard format. Consistency will keep you sane and help you to develop a positive, lasting relationship with your factory.

Self-Check -5	Written Test
---------------	--------------

Explain the following questions

1.Mention down reviewing the sample steps(3pts)

Note: Satisfactory rating – 3points Unsatisfactory below 3points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____

Page 83 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Operation title 1	Assemble garment
-------------------	------------------

OPERATION TITLE: Assemble garment

PURPOSE: enable to assemble garment components and fitting EQUIPMENT,

TOOLS AND MATERIALS: - sewing machine, cutting machine, finishing equipments

CONDITIONS OR SITUATIONS FOR THE OPERATION: - given necessary tools & equipment's. You are required to perform the following within 2hrs minutes

PROCEDURE:-

Step1. edging front and back pieces

Step2. Hem sleeves, taping

Step3. Set sleeves & close sides

Step4. Bind neck

Step5. Blind hem bottom

Step6. Tack fronts & sleeves

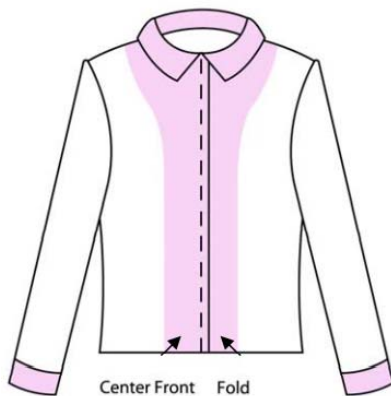
Step7. Attach fasteners

Step8. Trim & inspect

Page 84 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



LAP Test 1	Practical Demonstration
Name: _____	Date: _____
Time started: _____	Time finished: _____
Instruction:	
Constructing the Flat Collars	



PROCEDURE:-

Task1.prepare components(pressing and interlining)

Page 85 of 156	Federal TVET A gency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Task2. assemble component and panels

Task3. apply apparel finishing

LG #42	LO #3- Finish garment
Instruction sheet	
<p>This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:</p> <ul style="list-style-type: none"> ● Taking alterations ● Assessing and trimming hand sewing. ● Finishing garment meet specifications ● Attaching appropriate labels. <p>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:</p> <ul style="list-style-type: none"> ● Take alterations ● Assess and trim hand sewing. ● Finish garment meet specifications 	

Page 86 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



- Attach appropriate labels.

Learning Instructions:

Read the specific objectives of this Learning Guide.

1. Follow the instructions described below.
2. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them
3. Accomplish the “Self-checks” which are placed following all information sheets.
4. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
5. If you earned a satisfactory evaluation proceed to “Operation sheets
6. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
7. If your performance is satisfactory proceed to the next learning guide,
8. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.



Information Sheet-1	3.1.Taking alterations
---------------------	------------------------

Introduction

Alterations sometimes become a necessity, like the scenario where your favorite dress is too tight that you absolutely cannot get into it OR sometimes it is just for the aesthetics like the boot leg jeans which you want to transform into a tapering one.

What do you need to do clothing alterations

For simple alterations, you can do with your seam ripper and sewing machine. Sometimes you may have to retake body measurements and need to stitch with a hand sewing needle and thread. Then replacements have to be bought – like new zipper, buttons etc.

Clothing Alterations – and simple solutions

The dress is too tight

This is a sad situation to be in. Either you have put on weight, which is sad or you

Page 88 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



bought a size smaller hoping you will lose weight, which is sadder. Or you may have shrunk the clothing in the wash (Check out the tips in the post “How not to shrink clothes” to prevent this from happening again)

You may have to let out seams or darts. Loosening the side seam and restitching is the most often solution – you will need extra seam allowance in this case

You may have to add an extra fabric piece if there is no seam allowance to let out – for this you will need to find matching fabric to the fabric of the dress, with the same care instructions. This extra piece is to be inserted into the seam to add some more width.

Dress/pants too short

You will need to lengthen hemlines. You can do this in many ways like adding ruffles to the hems, or even making a slip extender to wear under the clothing, to give it length.

The dress is too loose

This involves Tapering of Dresses & Shirts or skirts. You will have to retake body measurements and add enough ease and then make a new stitching line to the inside. You can also take out excess fabric by adding a dart

If you got this dress which is much too big, you can add a waistband like the one in this post on sewing a beach cover up to gather the fullness

The Bodice is loose

Here the problem is that the bodice of the dress seems to be too long and bulges/folds

Page 89 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



This is a similar problem as the above, but here the bodice alone is loose, not the skirt. It happens if the person stands straight while taking the body measurements but afterward return to her true posture of slumping.

See if the problem can be solved by a tuck straight across the chest area or in the area below the bust if it seems to bulge with extra length there.

Dress is too long

This involves Shortening the length of dress, skirt, top, Pants or Jeans. This involves cutting out the extra portion and sewing the hemline again.

Add/replace lining in jackets and dresses

You will have to let out the seams and restitch or add it as an underlining and hand stitch it to the garment

Altering a neckline that is too big

A neckline which is too wide will gape and expose too much of what you do not want to be shown. There are many solutions to this problem.

Wrinkles at the back of the waist

There is extra at the back between the base of the neck and waist. You can see this if the hip area is too tight.

You can try to shape this by taking in some (1 cm) at the side seam or the center seam at the waistline and by loosening at the hip

The collar needs replacement or repair

If the collar is looking odd, ask yourself – Did you cut the collar correctly. The outer

Page 90 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



piece should be cut lengthwise on the fabric and the inner collar piece should be cut crosswise for better stretch. Most of the time problem happens when the collar is too small

You will have to replace the whole collar.

Sleeves not fitting

Tightness in the sleeve

This is evident especially when you lift up the arm.

You should always measure a long sleeve with the arm slightly bent.

One reason for this is because the crown height is lesser. You will have to mark the crown height a little higher next time. If the dress has shoulder pads, you can take it off to increase the crown height a little bit.

Sometimes it becomes tight because you have developed more muscles in the forearm

Replace pockets and trims

Pockets can get worn or tear at the pressure points. If simple tear repair would not do it you can replace the pocket.

Trims also may need replacement

Replace fasteners

Zippers break, buttonholes get wide, buttons pop out, thread bars get threadbare. A garment is virtually useless without its fastener.

Pant side pockets get open

Page 91 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



This is because the pants are not fitting around the hips – it is too tight for you. You will have to find a solution to this problem first.

Armscye Gapes

Droopiness in the armscye under the arm.

Make a dart in the back pattern. This may solve this problem

If the armscye gapes near the bust you will have to make a diagonal dart to the point of the bust. Do not over pinch or it will be too tight.

First Let out the seam at the armscye. You may have to add a small diagonal dart from the armscye line near the bust to the bust point on the main bodice.

If the armscye gapes near the shoulder make a corrective dart at the shoulder. A basic shoulder dart will take out the too much ease.

Altering Sewing Patterns for Proper Fitting

The most challenging part of sewing a garment is that you can't try it on until after it is sewn. And, if it doesn't fit right, you can't just go back to the store for another size. Finding the right fit before you start sewing can solve this problem. Since everyone's different, there are also adjustments you can make to a sewing pattern that will customize the fit perfectly to your body and ensure your handmade clothes look great.

The various sizes for sewing patterns are designed for the "average" person. While one size might fit your waist perfectly, you might have a fuller bust or wider shoulders than it allows for, so you will have to make some adjustments. It can be confusing at first, so you'll want to ensure that can help you understand how to make custom alterations properly.

Page 92 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Select the Perfect Pattern Size

Every pattern should offer various sizes. The trick is to find the right one for you. Even if you've always purchased the same size of clothes from the store, your figure can change in just a few months. When sewing your own clothes, you'll want to regularly take your measurements.

Choose the Correct Pattern Size

Starting with the correct size pattern saves you alterations that you can avoid and ends with a well-fitted garment. That's why you might also want to consult this *Threads Magazine* to ensure you choose the correct size pattern for the garment you are going to sew.

Measuring Your Clothes for a Perfect Fit

Another approach you can take is measuring the clothes you already own and know fit just the way you want them. By taking measurements of your store-bought clothes, you can ensure your sewing project will fit just the way you want it to. This is also a great trick when sewing garments for someone else as a surprise. You can simply borrow a favorite piece of clothing for a minute and get the measurements you need.

Making Sense of Pattern Grading

When you talk to someone who has sewn for a long time or read an advanced sewing book, you are bound to hear or read "pattern grading." It simply means using a specific system of measurements to increase or decrease the pattern size. It's how clothing manufacturers can make the same garment in different sizes and is something you can do as well at home.

Page 93 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Try the Seam Method of Alteration

There are many approaches to altering a sewing pattern. One of the easiest to understand is making adjustments to the seam lines.

Utilizing a Sloper

Do you want to alter every pattern you touch or do you want to have a basic pattern to work from? You might find it best to learn how to create and use a basic sloper. This is a basic fitting pattern that is designed just for one person's specific body measurements. It can take a lot of the guesswork from your custom alterations and save a significant amount of time when sewing.

Take Accurate Measurements for Pants

When sewing your pants, getting the measurements right from the start can save a lot of hassle. It can be confusing, however, to know exactly where to measure your waist or your hips. If you're even one inch off, your pants may not sit right, especially when you sit down! Taking some extra time to double-check the waist, hip, crotch, and length of your pants and applying the correct ease can ensure a perfectly flattering fit.

Making Shoulder Adjustments

Shoulders can be one of the hardest parts of a shirt, blouse, or dress to get right. It's also a place where the proper fit is essential to your comfort; shoulders that are too wide may drape in unflattering ways, too narrow and you won't be able to move.

Getting the Armhole Right

If the bodice of a garment doesn't fit, don't expect the armhole or shoulder to fit the

Page 94 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



way they should, either. These pieces of a top are interconnected, so learning how bodice alterations affect the armhole is an essential part of a perfect fit.

Adjusting for a Narrow Back

With the correctly sized shoulders, you might still have problems with the fit of a shirt if the back is too roomy, which usually results in wrinkles near the armholes.

Using Darts Properly

Properly sewn darts are essential to a well-finished garment, offering a little more give in places where it's needed most. Typically, darts are sewn into the bodice, the back, or the waistline and they help ensure a proper fit. Sewing them correctly is the first step to a dart laying properly when you wear your new sewing project.

Self-Check -1	Written Test
---------------	--------------

1.Alteration of garment may be done by retake body measurements

A. True B.false

Page 95 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Information Sheet-2	3.2.Assessing and trimming hand sewing
---------------------	--

Trims and Fasteners

Trimming

- All the garments materials except fabric required to make readymade garments are known as trimming.
- It is attached in garment with sewing.
- All types of trimmings are mainly used to furnishing garments.
- Garments trimmings are attached to the garments before and after finishing the garments in garments manufacturing technology.

Types of Trimmings:

There are two types of trimming .

They are

- Visible trimming and
- Invisible trimming.

Uses of Trimming in Apparel Industry:

Trimming are used mainly two purposes such as-

- Decoration purpose: Example-Lace, Braid, Motif etc.

Page 96 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



- Functional purpose: Example-Zipper,Button, Label etc.

Different Types of Garments Trimming:

1.Sewingthread

2. Button

3. Interlining

- Non-Fusible

- Fusible

4. Lining

5. Label Main label

- Care label

- Size label

- Price label

- Flag label

- Compositions label

- 6. Motif

7. Lace, Braid, Elastic

8. Rivet (Rivet is not used to open or close the opening the garments. It used for decorative and reinforcement purpose of garments)

9. Zipper

10. Hook & Loop fastening (VELCRD)

11. Shoulder pad

12. Metal Badge,

13. Twill Tape,

14. Velcro Tape (This item consists of two woven polyamide tapes one covered with very fine hooks and the other very fine loops)

Quality of Garments Trimming

Textile materials or non-textile materials are mainly used to make garments

Page 97 of 156	Federal TVET A gency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



trimming. But they should be selected carefully to get desire performance from them. The important qualities of trimming are given below:

- Life time

If the trimmings become fade or break then garment will not be wearable. So life time of trims should be equal to garments.

- Shrinkage

If trims become shrinkage by washing or ironing as a result appearance of the garment may be hampered. And ultimately garment will not be wearable. So the shrink ability of the fabric and the trimming should be checked earlier.

- Color fastness

Colorfastness is very important for trimming. If fastness become poor then garment will be also poor appearance. The color of trimming should not be faded due to washing or exposure to sunlight.

- Rust

The trimmings which are made from metal, then material should become rust free. If rusting occurs they will create spot on garment. So before using in garments then obviously check that is electroplated.

- Comfort ability

Trimming should become hygienic and obviously comfortable.

Fasteners

A fastener is the essential part of a fastening system used to hold together at least two pieces of material.

It is typically a single item (button) that often works in concert with another device (buttonhole).

Apparel fasteners may be permanent or temporary. Permanent fastenings, such as stitching and fusing, create form and shape in tailored garments.

Temporary fasteners take many forms, including basting used to hold fabrics in place before permanent machine stitching is applied.

Page 98 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Temporary fasteners, such as hook and eye closures for bras, can adjust garment size.

Point to consider

- While selecting these fasteners they must be free from rust and with laundering they must not break.
- Select to suit the color, design and texture of the fabric, the style and use of the garment and the position of the placket.
- Also consider the age and sex of the wearer. Fasteners are decorative and functional.
- Always fasteners should be fixed on to double material for strength.
- They should be fixed in such a way that the right side of the garment laps over the left side for women and the left laps over the right for men.
 - Buttons and buttonholes are generally used for men's shirt, trousers etc., just as press buttons, hooks and eyes are used for ladies cholies and children's dresses.

Fastener types:

This include press button, hook and eye, button and button hole, zippers, tapes and elastic.

1. Press button:



- These are used to hold edges that will not have much strain when the garment is worn.

Page 99 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
----------------	---	--	------------------------------



•There are two sections in this a stud and a socket.This fastener is ideal for sports wear and kids wear.

2.Hook and eyes:



These are used on the placket where there is cross wise strain.

- a. Eyes:The eyes are curved or straight and are made of metal.
- b. Loops: There are two types of loop. They are Thread loop and Fabric loop.



Buttons and Buttonholes:

- These are functional as well as decorative. Contrasting color or self colored buttons can be used. Buttonholes are slits cut in garments to hold the buttons in place. The raw edges of the slits are finished with buttonhole stitches.
- Buttons should be selected to suit the color, design and texture of the fabric and also the style of the garment. Two types-shank buttons and buttons with holes are most commonly used. Button maybe made of self fabrics, bone, glass, metal, plastics etc.

Page 100 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
-----------------	---	---	-----------------------------



- Button hole may be placed vertically or horizontally on the garment. Whether the buttonhole is vertical or horizontal, buttons are placed exactly on the centrefront line.

zippers:

- These fasteners are available in a wide variety of colors,lengths and types.Several type of speciality zippers are available.

- Three basic types of zipper are conventional,separating and invisible zippers.

- All zippers consist of either a chain of metal or plastic teeth or a synthetic coil joined to fabric tapes.Chains and coils are made in many weights and sizes,spirals of polyester or nylon.Coil zippers are lighter in weight, and usually more flexible, than chain zippers.Unlike metal,they will not rust,and they are available in more colors.Metal zippers are less affected byheat.

- Zipper tapes are woven, generally of cotton or a blend of cotton and polyester.

- Some tapes for coil zippers are stabilized nylon or polyester knit.Zippers are opened and closed by means of a slider or runner with a handle like tab that moves it up and down the coil or chain.Top and bottom stops keep the slider from running off the zipper with metal teeth.

a. Conventional zipper(Close-ended zippers)

- These zippers, whether made with exposed teeth (chain) or coil, open at the top and are held together at the bottom. They come in more different styles than any other zipper type. Depending upon the garment design, application may be by the centered, lapped, exposed, or fly method.



fig.Conventional zipper

•b. Separating zipper(Open-ended zippers)

- Separating zippers are made to open at both top and bottom, permitting the

Page 101 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
-----------------	---	---	-----------------------------



zipper opening to separate completely. Although used mainly on jackets, they can really be applied to any garment with a completely opened front. Also, dual reversible and two-way zippers that zip from the top and from the bottom are available for jumpsuits and similar garments. A centered application is the method generally used.



Fig. separating zipper

•c. Invisible zipper:

•These zippers are the newest type of zipper. As the name implies, they are structured differently from other zippers and are in a special way so that they disappear into a seam. When properly applied, neither the stitching nor the zipper teeth or coil is visible on the outside of the garment. Invisible zippers are used principally in skirts and dresses but they can go, in general, wherever a conventional zipper might be used, except in a trousers.

•Other types of zipper include two way zipper, trouser zipper and decorative zipper with large teeth and a pull ring.



Fig. invisible zipper



Velcro:

- These have two tape strips, one with a looped nap surface and the other with a hooked nap. When pressed together, surfaces grip and remain locked until pulled apart. These are used on cuffs, plackets, mosquito nets and other such items. This is a good substitute for other closure in home decorating, as with upholstery. These tapes come in sew-on, iron-on and stick-on forms. These are usually made of Nylon and are available in yards or metres.



fig.Hook and loop tape/velcrow

Buckles:

- These features are available in a wide variety of shapes, sizes, and materials (Plastic, Iron, Brass, Steel, etc.). However, there are only two types of buckles-buckles with prongs and buckles without prongs. For a buckle with a prong, eyelets must be used. Ready-made metal eyelets can be applied with special plier or attaching tool, or eyelets can be hand sewn using a buttonhole stitch. Buckles can be purchased separately or in kits.

Page 103 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Tapes and cords:

Tapes and cords can be functional or decorative. They can be used to reinforce a seam, cover a fabric edge, or create a special design on the outside of a garment. Tapes and cords are available in variety of types, widths and colors. The Tapes may be made out of silk, cotton and other synthetic fibers. These may be thin or thick. Some are slightly stretchable others are not. They may be woven, knitted, braided or made of lace. The choice of which type of tape or trim to use depends upon how it will be used in a garment. For areas where you want to prevent stretching, select a firm, non-stretchable tape or cord. Some of the common tapes and cords are:

a. Seam Tape:

- Woven tape or lace used to finish hem and facing edges.

b. Bias Tape:

- This is single or double-fold tape used for binding curved or straight edges and for casings.

c. Twill Tape:

- This is firmly woven tape used for reinforcing seams.

d. Piping:

- A narrow, corded bias strip of fabric that is inserted into a seam for a decorative trim.

e. Hem facing:

- Wide bias tape or lace used for facing hems and binding edges.

f. Ribbing Tape:

Page 104 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------



- A stretchable knitted band used to finish a neckline, armhole, sleeve, leg or waistline



•Elastics:

- Elastic is available in several different types and widths. The type of elastic to choose will depend on whether it will be used in a casing or stitched directly to a garment.

a. Braided elastic:

- This is recommended only for casing because it narrows when stretched.

b. Woven elastic:

- It stays the same width when stretched. Thus it can be stitched directly to a garment or used in a casing.

c. Elastic thread:

- This is very thin covered elastic core used for shirring. Since it is wound in bobbin for shirring it is called bobbin elastic.

d. Special purpose elastic:

- These are available for pyamas, lungies and swim-wear.



Self-Check -1	Written Test
---------------	--------------

Explain the following questions

1. Mention the two purpose of Trimmings used in apparel industry with example.
2. Mention some important qualities of trimmings
3. _____ are slits cut in garments to hold the buttons in place

Note: Satisfactory rating – 10 points Unsatisfactory below 10points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____



Finishing garment

All the clothing articles are finished prior to sending to customers. Finishing activities involved thread trimming, spot cleaning, and ironing, removing dust and loose threads and fibers. For these activities, various finishing tools and equipment are required. Followings are the finishing machines, tools, and equipment used by garment factories.

Activities in the finishing garment

1. Thread Trimming

In the stitching department, thread trails and thread chains are not trimmed neatly. Uncut threads and thread tails in garments are trimmed. Uncut and loose threads on garments are considered defects.

In case garments contain uncut threads – left by stitching operator during stitching, threads are cut at this stage. Uncut threads can be trimmed by manual trimmer or a thread trimming machine.

In the sewing process, the operator does not cut thread ends neatly. All untrimmed threads are cut at the finishing stage. Workers use manual thread trimmers to cut thread tails

Thread trimmer:In the sewing process, the operator does not cut thread ends neatly. All untrimmed threads are cut at the finishing stage. Workers use manual thread trimmers to cut thread tails

Automatic thread trimming machines are also available. See the thread trimming machine pictures.



Fig.thread trimmng machine

Removing the sticker and loose threads: all the garment components are labeled by paper stickers. Those stickers are removed manually by a team of workers.



For these activities, various finishing tools and equipment are required. Followings are the finishing machines, tools, and equipment used by garment factories.

Thread sucking machine: The loose threads on the garment must be removed from the garment. For this thread sucking machines are used.

Manual thread removing equipment: In knits garments, loose threads are removed manually by using gum tapes.

Vacuum pressing table and steam iron: A vacuum pressing table and a steam iron

Page 108 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------



are used to remove creases on garments and to iron garments. Inside the vacuum table, there is air suction, which helps to grip the garment when it is ironed. Hot steam is supplied for steam irons to heat the iron.

Spotting gun: This equipment is used to remove stains from garments. Using a spotting gun, the solvent is sprayed at high speed to the stained area. The solvent dissolves stains found on garments. Sometimes liquid soap, solvent, and tooth brush are used for cleaning stains.

2. Checking garments

All garments are checked at the finishing stage for visuals and measurement. Finishing checkers check the complete garment inside and out. Checking is done for garment detailing, such as care labelling, and trims.

3. Button attach and Butting holing

Products those have trimming like button, snap button, eyelets are attached in finishing section.

4. Removing stains

Stains and spots are found on garments. Spots are removed using a hand spot gun or by using a stain removing machine prior to pressing. Dust and stains can be removed by machine washing. So, many times finishing department wash garments inside department.

5. Repair work and mending

Defective garments may need to repair for stitching and fabric defects. All repair activities are done in finishing department itself instead of sending defective garments to stitching department.

Page 109 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



6. Ironing garments

Garments are ironed using a steam iron. This is done to remove creases in the garment. For knitted garments measurements are set by steam press. Vacuum pressing tables are used for garment pressing.

7. Folding and tagging:

Pressed garments are folded in a specified dimension. Tags, such as price tags and hang tags are attached to the garment by means of a kimble gun or threads.

8. Packing garments:

Finally, properly folded garments are packed into poly bags as per customer requirements. Individual poly bags are then packed into bigger cartons.

Verify proper packaging and labeling of garments

Verifying proper packaging and labeling of garments is an essential part of most final inspections.

Proper packaging ensures your garments arrive at their final destination in the same condition they left your supplier's facility. Aside from inspecting packaging, your QC team should also check the labeling of garments to ensure compliance to legal requirements.

9. Preparation of packing list:

The packing in-charge prepares a packing list for the shipment. After packing is completed for an order, the finishing department informs the concerned merchant.

10. Internal shipment audits

Page 110 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Quality department perform internal shipment audit in the finishing department. This audit is done prior to final inspection.

11. Documentation and reporting

Like other departments, finishing department maintain production records for pressing, and packing.

Packaging inspection for garments

Most garments are sealed in polybags by factory staff before being packaged in retailer and shipping cartons for transit. Incorrectly packaging and sealing your garments can lead to dust and moisture permeating and soiling your products. And failing to comply with legal requirements for suffocation warnings on polybags could lead to fines.

Inspecting packaging for potential quality issues in transit and distribution includes verifying:

- Polybag sealing method
- Polybag size
- Appropriate labeling, barcodes and price tags
- Retail artwork and printing
- Carton assortment

When ordering a number of different sizes of garments be sure to consider how to sort these garments among shipping cartons. For example, how many women's dresses of each size—small, medium, large and extra-large—should each carton contain? Imagine the frustration of receiving 20 extra-small dresses and only three extra-large dresses when you intended to receive the same proportion of every size. You can prevent this problem by including assortment in the specifications

Page 111 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



you provide your supplier and inspection team.

Garment Washing

Washing is done to remove dirt and dust from the garments. Washing process involves additional cost, so this process is done only if the buyer asks for washing of their orders. More than just cleaning of garments, washing is also done to give washed look to the finished garment with different types of finishes.

Self-Check -3		Written Test	
Page 112 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Answer the following questions

1. List down Activities in the finishing garment (8pts)

2. What is the use of vacuum table during ironing? (2pts)

Note: Satisfactory rating – 10 points Unsatisfactory below 10 points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____

Information Sheet-4		3.4. Attaching appropriate labels	
Page 113 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Labels are not a functional component of a garment but essential for many reasons. The common labels those are found in garments are Brand label, Size label, Care label, and special label. Each label has a specific purpose and carries some kind of information.

Brand or Main Label

Main labels indicate a Brand name or Brand Logo of the company that sources and sells clothes. Brand labels play a big role to customers as because customers only know the brand and they buy the brand. A brand level is associated with the product quality, durability and feel good factor. Like, we go buy Levis jeans and Tommy Hilfiger for shirts and Polo shirts, Zara for dresses etc.



Size Label:

Size label defines a specific set of measurements of the human body. Sizes labels may be printed only a later to denote a specific size. Such as S for Small, M for Medium and L for Large size garments. The customer knows which size fits them

Page 114 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



well. When a customer goes for shopping, s/he picks garment according to his/her size that fit him/her well.

The size label is giving an important information to the customer about the measurement of the piece. This labels could be designed with individual sizes or combined with the brand label.



Size Labels



Care Label:

This label includes wash care and ironing instruction. For details of wash care instructions refer Garment wash care symbols. Care labels are attached at side seam. the purpose of care labels is to warn wearers what not to do to during washing, drying and ironing to maintain color, specifically printed designs, after wash shrinkage and color bleeding issues. A care label may include few other information such as

- Fiber contents are also included in care labels. i.e. 40% Poly and 60% Cotton
- Country of Origin: Name of the country that manufactured the particular product is also written on care label. Like, Made in India, Made in Italy.

Page 115 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



	TEMPERATURE				CYCLES		OTHER	
MACHINE WASH	Cold	Warm	Hot	Normal	Perm. Press	Delicate	Do Not Wash	Hand Wash
	HEAT SETTING				CYCLES		OTHER	
TUMBLE DRY	No Heat	Low	Medium	High	Normal	Perm. Press	Delicate	Do Not Tumble Dry
	DRY							
DRYING	Hang Dry	Drip Dry	Dry Flat	Dry In Shade	Do Not Dry	Do Not Wring		
	TEMPERATURE							
IRONING	Low	Medium	High	No Steam	Do Not Iron			
	BLEACH							
BLEACHING	Any Bleach	Non-Chlorine	Do Not Bleach	Chlorine Allowed	Non-Chlorine			
	DRY CLEAN							
DRY CLEAN	Dry Clean	Do Not Dry Clean	Any Solvent	Any Solvent Except	Petroleum Solvent			

XS

S

M

L

XL

XXL

30°

40°

50°

60°

70°

95°

Special Label:

100% Cotton, Organic Cotton is an example of such special labels. Special labels normally attached to draw customer attention at the time of purchasing.

Flammable Garments

If you are producing specific types of garments such as children's clothing, baby clothing, and nightwear,

"KEEP AWAY FROM FIRE." This wording does carry some specific font and character requirements to ensure it can be read clearly.



Self-Check -3

Written Test

Give answer for the following

1.list down some information included under care label(3pts)

_____, _____, _____,

2.Labels are a functional component of a garment(2pts)

A.true

B.false

Note: Satisfactory rating – 5 points Unsatisfactory below 5points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____



LG #43	LO #4- Conduct final fitting and documentation
--------	--

Instruction sheet

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

- Observing OHS practices.
- Conducting final fitting
- Preparing all relevant paperwork and documentation.
- Storing or forwarding documents.

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:

- Observe OHS practices.
- Conduct final fitting
- Prepare all relevant paperwork and documentation.
- Store or forward documents.

Learning Instructions:

Read the specific objectives of this Learning Guide.

1. Follow the instructions described below.
2. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them
3. Accomplish the “Self-checks” which are placed following all information sheets.
4. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
5. If you earned a satisfactory evaluation proceed to “Operation sheets
6. Perform “the Learning activity performance test” which is placed following “Operation

Page 118 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



sheets” ,

7.If your performance is satisfactory proceed to the next learning guide,

8.If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Page 119 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Information Sheet-1	1.1.Observing OHS practices.
---------------------	------------------------------

manual handling techniques

“manual handling operations” means any transporting or supporting of a load (including the lifting, putting down, pushing, pulling, carrying or moving there of) by hand or by bodily force.

The Importance Of Safe Manual Handling Techniques

Manual handling might not seem high risk, but it is actually one of the most common causes of workplace injuries. The importance of safe manual handling techniques can therefore mean the difference between a productive day at work or being off work with a bad back

How to stay safe when manual handling

The first rule of manual handling is to eliminate manual handling. That's right. Because there is no safer way to handle something, than not to handle it at all! It's not always possible, but if you can eliminate manual handling, you should. This might be possible by having materials delivered to their place of use, or installing equipment like conveyor belts.

learn the correct lifting and carrying techniques, and understand the risks and precautions needed when handling loads.

- Use mechanical aids where possible
- Consider team lifts
- Know the weight and any hazards associated with the load
- Make sure it is safe to manual handle the load

Page 120 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



- Make sure any route is clear
- Use the correct manual handling lifting technique

If your work involves regular manual handling, you should be trained in safe manual handling techniques as part of your employment.

standard operating procedures

The process of making a garment is an orderly profession. It starts from the choice of design, pattern, and fabric up to the construction of the garment. Professional dressmakers divide the process into logical step-cutting-basting, constructing and finishing so they know exactly how long it will take to make a given garment.

SOP can be defined as a step-by-step written procedure about how to do a job that gives the desired result and maintains consistency in results. SOP can also be defined as a checklist for the user (operator) who is going to do a particular job. An SOP is a sure success method of doing a job.

SOP can be also made using illustrations and flow charts. For some processes factory only needs to provide detailed instructions to perform a task, where some processes required instruction as well as decision making based on the result of intermediate steps.

The main objective of standard operating procedures is to develop an effective quality system and comply with industry-specific regulations and standards. Failure to follow SOPs can cause significant errors in production and operations, increasing unwanted work variations.

Page 121 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



personal protective equipment

Personal protective equipment (PPE) refers to specialized garments or accessories such as clothing, masks, gloves and so forth that fulfil a protective function against various hazards, mechanical or chemical, when worn by workers.

Personal Protective Equipment, are the tools that ensure the basic health protection and safety of users. PPE is any device or appliance designed to be worn by an individual when exposed to one or more health and safety hazards. PPE includes all clothing and other work accessories designed to create a barrier against workplace hazards, and using PPE requires hazard awareness and training on the part of the user. Employees must be aware that the equipment does not eliminate the hazard; if the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

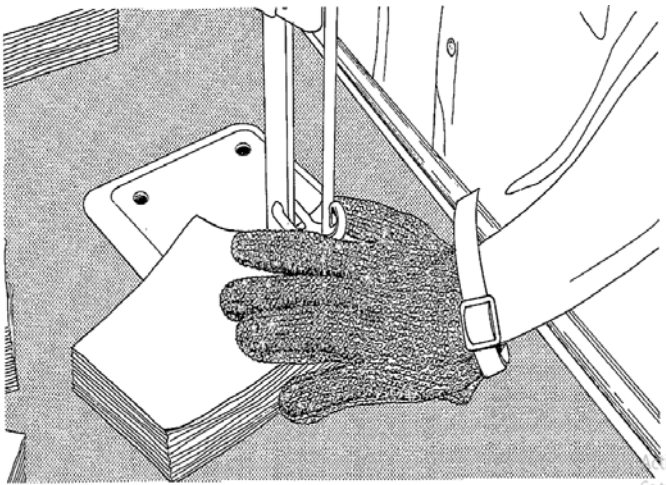
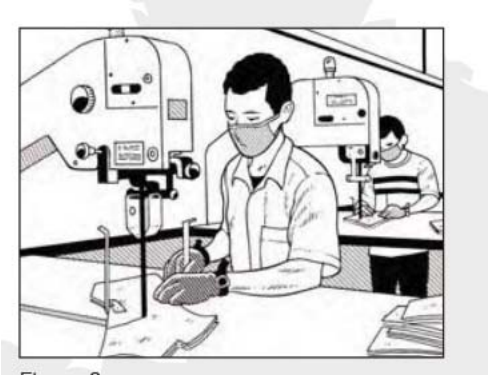


fig. Most electric or pressurized air operated cutting machines have appropriate guards.

Page 122 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------



Protective Clothing mask and glooves

over Coats, which extend below the knee, are recommended in all laboratory work areas and must be buttoned up to be effective. Aprons are used when acid splashes are possible.

Gloves are used for protection against skin contact or cuts when handling certain chemicals, hot or cold objects, or glass.



safe storage of equipment

The storage and handling of raw materials, components and products is an

Page 123 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
-----------------	---	---	-----------------------------



integral part of most production processes.

Better organized storage If in doubt, take it out Extra stock is a waste. It requires storage, record keeping and handling. The more cluttered your shop-floor, the more likely materials and work-in-progress will be mixed up or lost. Workers spend valuable productive time looking for things. Consider each piece of raw material, each box, each container, each tool, each machine.

Figures 1 and 2 show the same work area before and after unnecessary items were removed. Some of the most organized enterprises manufacturing garments practise a specialized inventory method known as "Kanban" or "just-in-time" 1 The basic principle is that materials are brought to the production area only as and when they are needed. Avoid placing materials on the floor Many small enterprises often complain about the lack of space in their workshops. On examination they find that a high percentage of floor space is taken up by redundant stock, raw materials scrap and old machines. Sometimes, some of these goods have been sitting there for years, getting dusty and dirty. A good layout reduces accidents and promotes health and safety for the workers. A poor layout increases material-handling, and manufacturing costs, creates bottlenecks and delays, and contributes to damaged goods.

Page 124 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------

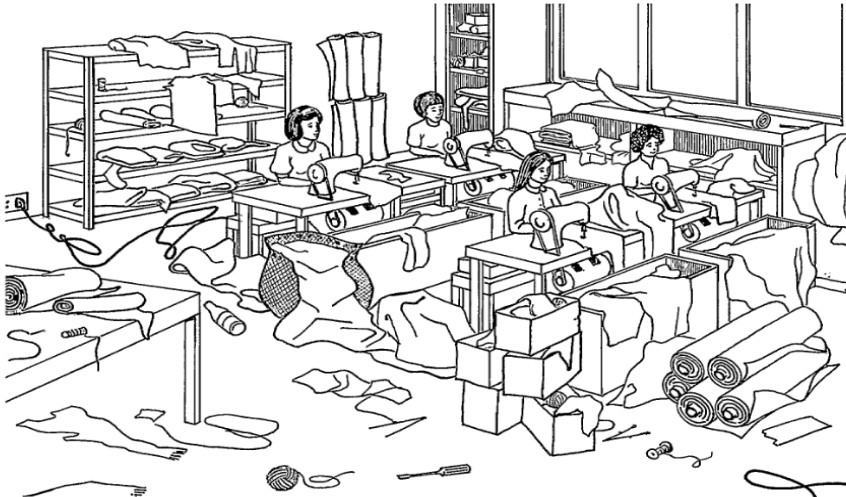


Figure 1: A cluttered shop-floor impedes the easy flow of material and workers, causing production delays, errors and accidents

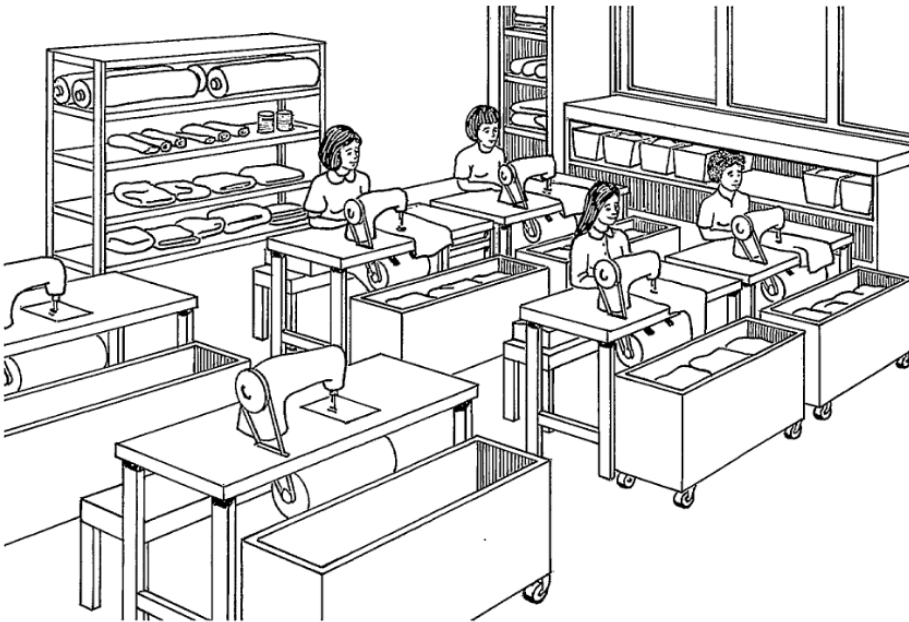


Figure 2: The same shop-floor after unnecessary items have been removed. Once floor space is retrieved, new workplaces could be added and the flow of work-in-progress is speeded up



safe materials handling

Good practices for materials handling in production lines

- Use line pick-up trays to feed garment bundles into the production line.
- Use movable wheel carts to transport materials to the workstation.
- Use hanging-rails on wheels to prevent crumpling of ready-to-deliver products and make transportation of finished items safer.

Benefits

Reduces the amount of time spent on materials handling.

Improves product quality.

Reduces the amount of storage space needed for finished goods and materials.

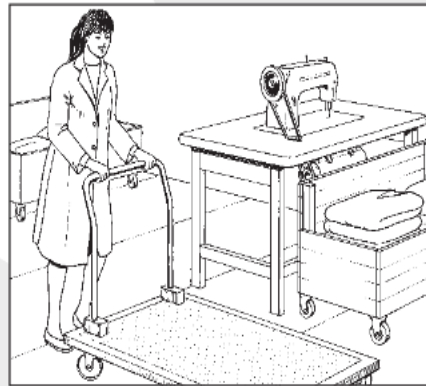
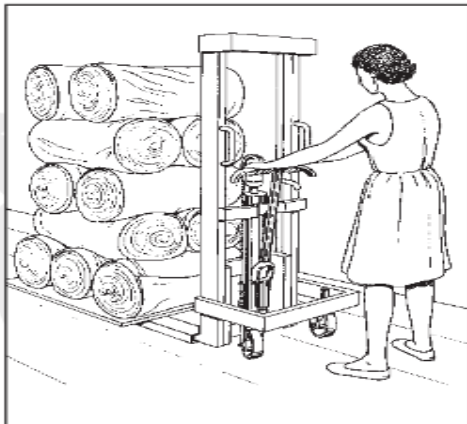
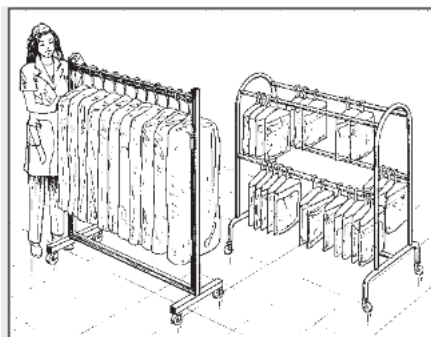


Figure 2





What are the safety requirements for material handling?

Materials handling

- Avoid lifting materials from the floor or while seated.
- Make use of available handling aids.
- Refrain from using sudden or jerky movements.
- Never lift a load over an obstacle.
- Perform lifts in areas with adequate footing, space and lighting.
- Modify objects and redesign jobs to make moving easier.

taking of rest breaks

Types of rest break

Breaks during the working day

An employee has the right to an uninterrupted break of at least 20 minutes if they work more than 6 hours in a day.

The employee has the right to take this break:

- away from their workstation (for example, away from their desk)
- at a time that's not the very start or end of the working day

Employee breaks are important for various reasons.

- Increases Productivity
- There is a general belief that employees who take regular breaks are more productive.
- Reduces Stress

Page 127 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



The mind can only take so much before it becomes overloaded by too much data or activity, which can ultimately lead to stress.

ergonomic arrangement of workplaces

Ergonomics is the science of designing the job to fit the worker, rather than physically forcing the worker's body to fit the job.

It helps to reduce physical stress on a worker's body and eliminate many potentially serious,

FUNDAMENTAL ERGONOMIC PRINCIPALS

1. Use proper tools

Tools should be appropriate for the specific tasks being performed. Your tools should allow you to keep your hands and wrists straight – the position they would be in if they were hanging relaxed at your side. Bend the tool – not the wrist! The tool should fit comfortably into your hand.

2. Keep repetitive motions to a minimum

Our workstations or tasks can often be redesigned to reduce the number of repetitive motions that must be performed.

3. Avoid awkward postures

Your job should not require you to work with your hands above shoulder height on a regular basis. Arms should be kept low and close to your body. Bending and twisting of your wrists, back and neck should also be avoided.

Page 128 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



4. Use safe lifting procedures

Avoid lifting objects that are too heavy. Use more than one person or a mechanical device to reduce the load. Your workstation should not require you to lift objects above your head or twist your back while lifting. Keep the load close to your body and ensure that you have a good grip.

BENEFITS OF A WORKPLACE ERGONOMICS PROCESS

1. Ergonomics reduces costs. By systematically reducing ergonomic risk factors.
2. Ergonomics improves productivity.
3. Ergonomics improves quality. Poor ergonomics leads to frustrated and fatigued workers that don't do their best work.
4. Ergonomics improves employee engagement.
5. Ergonomics creates a better safety culture.



Extreme
postures
required when
cutting with
an electric saw.



Proper Storage of Tools, Parts and Equipment

To ensure that tools and equipment remain in good condition and last for a long time, store them properly. Properly stored tools and equipment will be easy to find when needed and are less likely to be lost.

Benefits

Tools and parts are kept in good condition and are easy to find.

Costs are reduced.

Productivity is increased because time is not lost looking for tools, parts and equipment.

Workshop staff develop a sense of responsibility and pride in their work.

How

- Workshop staff identify tools, parts and equipment.
- Workshop staff develop a system for labeling and storing tools, parts and equipment.
- Maintain order in the mechanical room by establishing a criteria for performance

Page 130 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



review.



1.4.7.following marked walkways

What is Floor Marking?

Floor marking is the process of using visual cues such as lines, shapes, and signs on floors to make a space easier for people to navigate. These cues divide spaces, highlight hazards, outline workstations and storage locations, direct traffic, and convey important safety or instructional information. Floor marking is often part of a larger visual communication system that includes wall signs and labels.

Why Use Industrial Floor Markings

The following are some key reasons why so many facilities use industrial floor markings.

Organizational Improvement- Any increase in organization at a facility will reduce wasted time and energy. Identifying storage or staging areas, for example, can quickly let people know where things need to be.

Page 131 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



housekeeping

The garments industry generates a lot of dust from fabrics being cut and sewn. Some fabrics release chemicals which saturate the air causing difficulties in breathing and eye irritation. Solvents used for cleaning fabrics and garments may cause fatigue, headache and dizziness. Dust and solvents, when breathed, can lead to lung diseases and are very dangerous.

The following rules provide a series of low-cost measures for sound environmental control.

Clean regularly and properly - do not spread dust

Dust originates from fabrics and threads, from cutting and sewing to packing operations. Even machines which are not regularly cleaned could be full of dust which may cause them to break down. Dust increases wear and tear on machinery, necessitating more maintenance. It also negatively affects the quality of raw materials and finished products. This cleaning should also include walls, ceilings, storage racks and other areas where dust accumulates. Dust on windows, walls and lamps will significantly reduce the lighting in the workplace. One low-cost cleaning method is sweeping the floor carefully with an appropriate broom and accompanying dust pan to prevent dust from spreading. Spraying water on the floor before sweeping will avoid dust remaining airborne. When dust is moistened it can be easily removed with a broom.

Page 132 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------



Self-Check -1	Written Test
---------------	--------------

Page 133 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Answer the following questions

1.Dust increases wear and tear on machineries

A.True B.false

2.House keeping is any device or appliance designed to be worn by an individual when exposed to one or more health and safety hazards.

A.true B.false

3.list down benefits of Proper Storage of Tools, Parts and Equipment

4._____helps to reduce physical stress on a worker's body and eliminate many potentially serious,

Note: Satisfactory rating – 10 points Unsatisfactory below 10points

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

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

Page 134 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Information Sheet-2	4.2.Conducting final fitting
---------------------	------------------------------

4.2.1 Confirming correct size.

Measurement and fitting tests for garment inspections

Garment manufacturing is one of the complex form of production. Many factors affect the final aspect of garments: the fabric, the sewing, the design, etc. During a garment inspection, various tests are performed to check that the goods are well produced and the customer will be able to wear them normally. The measurement test and the fitting tests for garment inspections are the two testing methods utilized the most for this purpose.

Measurement tests for garment inspections

The principal is simple, the objective is to control that the size chart, provided by the buyers, matches the goods manufactured. To do so, the quality inspector puts 3 sets of garments, per size, on a table and measures each one of them. The measures taken are the ones that are indicated on the size chart, to compare both results.

Note: The sample size for this test can vary depending on the buyer's requirements.

Fitting tests for garment inspections

The fitting test shows how the product will look when worn. To execute this test, the quality inspector performs a test on mannequins as per above, or on real models if available. He puts each garment on the mannequin and performs a general check. The garment should properly hold and look nice, as per the

Page 135 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



reference sample provided.

Why both test methods are important?

The measurement test ensures that the product has been manufactured at the right dimension; however, it does not always show discrepancies that are only visible when performing a fitting test.

Both test methods are complementary and should not be omitted from a garment inspection protocol.

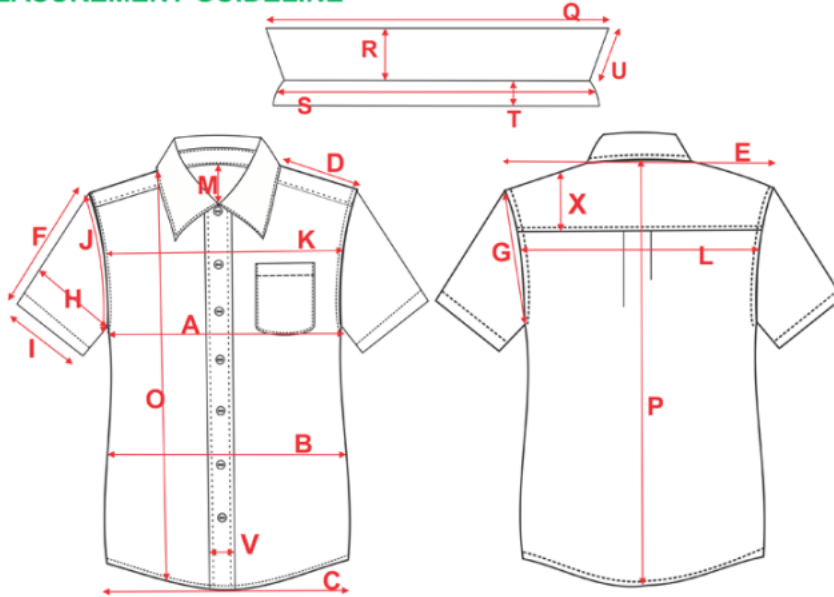
Measurement Specification Guideline – How to Measure A Garment

Measurement specification sheet is an elaborate detailing of the measurements of different components in a particular style. For a clothing manufacturer, only base measurement sometimes is not enough for preparing the apparel pattern. For that, you need to provide the measurement of each and every part of the garment. Common garments that we use are button down shirts. So let's first discuss what are the key points of measurement required in order to get a perfect pattern and get a perfect sample. To get a perfect pattern for a button down Shirt the following measurements are essential. Those who are new to the fashion line my suggestion is to know little bit more about tech pack design.

Page 136 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



MEASUREMENT GUIDELINE



Industry Standards for Garment Measurement Specification

people follow different measurement standards in different parts of the world. They do it with little deviation from the regular measurement standards.

How to Measure – Shirts & Blouses Garment Measurement Specification Guideline

A.Chest – 1" below armhole measure straight across, edge to edge.

B.Waist – At point specified below HPS (High Point Shoulder) or SNP (Side Neck Point). Measurement is taken straight across, edge to edge.

C.Bottom Hem – Measured straight or curved along the bottom edge, side seam to side seam (as specified on measurement chart).

D.Shoulder Seam – From HPS/SNP measure along the seam or along the natural

Page 137 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
-----------------	---	---	-----------------------------



fold line to the outer shoulder edge.

E. Across Shoulder – Outer shoulder edge to outer shoulder edge

F. Sleeve Overarm – From outer shoulder edge measure along the fold to the edge of cuff.

G. Armhole Straight – Measure straight from outer shoulder edge to bottom of armhole. Armhole Curved – Measure from outer shoulder edge along the curve to bottom of armhole.

H. Bicep – 1" below armhole, measure straight across edge to edge parallel to the sleeve opening.

I. Cuff/Sleeve Opening – Measure along cuff/sleeve opening, edge to edge.

J. Cuff Depth / Cuff Height – Measure from the seam to edge of cuff.

K. Across Front – From specified point below HPS/SNP, measure straight across, edge to edge of armhole.

L. Across Back – From specified point below HPS/SNP, measure straight across, edge to edge of armhole.

M. Front Neck Drop – From back neck seam to top edge of the front neck.

T. Back Neck Drop – From imaginary line to the top edge of back neck seam.

O. Front Length – Measurement taken from HPS / SNP straight down to hem, staying parallel to the center front.

P. Centre Back Length – From the center back neck, measure straight down to the hem.

Page 138 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------

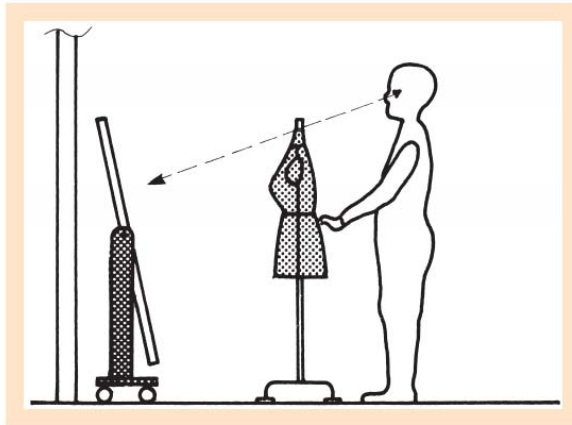


Figure 11.2.

In addition to inspecting the external appearance of a sample, it is no less important to inspect the internal appearance. This inspection is necessary for all types of garments because sewing faults or other errors are easily seen on unlined garments, and stains or damages are very noticeable on linings. Today consumers have increasing demands for garment quality, and inspecting the internal and external appearance of a garment is an integral part of the quality chain which fundamentally starts in the sample room.

Garment Fitting Problems and Reasons

- Mistake in Measurement:

Measurement may become faulty owing to lack of alertness from either side-taker or giver of the measurement.

- Body Observation:

Even at the stage of the measurement itself, a bird's view must be thrown on the structure of the body, so slightly so that the customer does not notice. It must be observed whether fullness is to be kept much or less, shape is to be given full or

Page 139 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------



light. That is a thorough body observation must be done and noted down in the note book.

- While Drafting:

Drafting may be made according to the body as observed. The remarks' given at different columns in the note book must be properly seen before drafting is done. For example, in case of a, bent shoulder, give somewhat bigger shape otherwise shoulder shall remain strained. Body observation should be used at the stage of drafting itself.

- Mistake in Layout:

While making layout the print position was not kept in mind and cutting of cloth was done without properly making the layout. If after marking the patters, cutting of cloth has started without marking for inlays and turnings it will be a big mistake and garment shall be short to size.

- Carelessness in Cutting and Stitching:

Even after correct marking of the pattern, cutting is done carelessly i.e., lines of inlays and turnings are overlooked, it shall cause the garment coming short to size. While stitching at shoulder neck points inside and outside has not been adjusted or armholes' points have not been properly adjusted and stitched. In such case ladies shirt or blouse shall be turned around, the body to feel uncomfortable to wear. ,

- Mistake in giving Darts, Pleats and Tucks:Darts' shape has not been given properly.

As in case of front of a blouse, slant seam of dart has been given in place of round seam of dart and in the back. round shape dart has been given in place of slant shape. In case of skirts etc. pleats may have been given" more than the size and designs of tucks may have been as if the cloth looks sagging then also the

Page 140 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1 December,2020
-----------------	---	---	-----------------------------



garment will become tight. Therefore use of darts, pleats and tucks must be proper and margin must be kept for it.

4.1.2 Ensuring client satisfaction

Essential Garment Inspection Steps to Protect Your Quality

Let's look at the five steps to garment inspection you should always ensure your QC staff follow.

1. Measure garment dimensions

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.

Specifying tolerances for garment dimensions

QC inspectors will use these tolerances in reporting on-site to determine whether an item passes or fails inspection.

The tolerance for any given dimension can also be adjusted for each point of measure based on how crucial they are to the overall fit to the garment.

2. Check function of closures, buttons, zippers and other accessories

Most garments aren't simply a few pieces of fabric stitched together. Rather, they also include functional and stylistic accessories like buttons, snaps, zippers, ribbons and elastic bands. A broken closure on a garment usually renders the clothing item unwearable and, therefore, unsellable. Most consumers find poor

Page 141 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



quality closures to be a nuisance and frustration to repair. Poor quality or attachment of these accessories can lead to negative customer reviews and can even cause bodily harm to consumers.

Garment inspection should include on-site function checks of closures to test durability and ensure they're securely attached to the garment. Common tests include:

Manufacturing enterprises are increasingly focusing on satisfying individual customer needs in a highly competitive global market. A constant challenge for manufacturers is how to deal with customer satisfaction, which in turn largely determines the customer's willingness to buy the products. Understanding and fulfilling customer needs has been well recognized as one of the principle factors for product design and development to succeed in the marketplace

Measurements

An integral part of the inspection of samples is the checking of finished measurements. Whilst measurements do not fully indicate fitting quality, checking is necessary especially if the garment has to conform to a customer's measurement specification. The checking of garment measurements has to take into account the question of reasonable tolerances which do not have a noticeable influence on the fitting, design and functionality of the garment. Tolerances can be defined as the allowable deviations from standards, and in practical terms this requires a sense of proportion.

Viewing the Garment

The most effective method of viewing a sample garment to inspect its detailed and general appearance is to look at it in the same way as the consumer does in a shop, but with a professional eye. This means that the shop situation should be duplicated in the sample room and requires a very simple arrangement.

The recommended routine is to view the garment in four consecutive stages,

Page 142 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



revolving the stand through 90° after completing each stage. Start with the front view, follow with the first side view, then the back, and finish with the second side.

3. Verify proper packaging and labeling of garments

Verifying proper packaging and labeling of garments is an essential part of most final inspections.

Proper packaging ensures your garments arrive at their final destination in the same condition they left your supplier's facility. Aside from inspecting packaging, your QC team should also check the labeling of garments to ensure compliance to legal requirements.

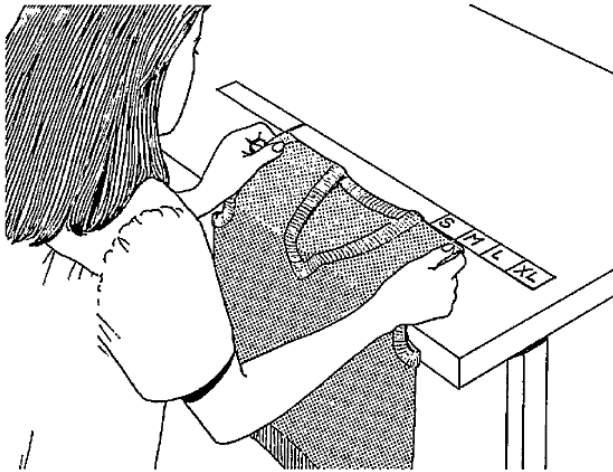
4. Test fabric for conformance to quality standards

For some products, such as promotional goods, the quality of input materials might not drastically impact salability. But fabric quality is a major determinant of the quality and salability of the finished product when manufacturing garments. Product testing of your garments, both on-site and in a qualified laboratory.

5. Use guides to check measurements of pieces and garments

Checking the size of ply pieces being produced would be easier with the use of measuring guides attached to a worktable. A measuring tape with marks according to the measurement of the piece to be checked can serve as a guide. With this low-cost aid, the worker would just have to lay the piece flat on the table and compare its size against the guide's length. Size control can be done more efficiently if patterns, dummies, boards or frames are used. Patterns made of scrap cardboard should be avoided. Soft cardboard wears very quickly with use and the pattern profile changes, thereby producing incorrect shapes and measures and increasing the amount of sewing time necessary to fit panels.

Page 143 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



A measuring tape with regular marks according to standard sizes and fixed to the work table helps for checking garment sizes

Garment checking workstation:

At the finishing stage all garments are thoroughly checked. Later garment lots are inspected. For this quality checking workstation is required with adequate light, display board, bins for storing segregated garments.

Follow the Fitting standards in clothing

There are some standards of clothing that you should ensure that your finished sewn product should adhere to. Ensure that they are followed so that you make something that you are proud of. You should ensure that the garment you have sewn meets the following criteria

- Buttons fasten easily, neatly and securely.
- There are no loose seam stitching or hanging threads

Page 144 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



- Buttons and buttonholes are all placed at an equal distance from the edge
- Stitches are all even and smooth
- Collars are neatly finished, equal on both sides, undercollar doesnot roll to the front collar. The corners are neatly turned out.
- Darts are lying smooth without any projections. Dart on either side of the bodice are placed equally and look the same.
- Facing at the neckline is neatly turned inside the garment without any bulges. The fabric edges are finished
- Prints and patterns of the cloth you have chosen look neatly joined.
- Hem stitching is looking smooth without any projections or bulges and at an even distance from the hem edge

Self-Check -2	Written Test
---------------	--------------

instruction!:Answer the following qustions as required

Page 145 of 156	Federal TVET A gency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



1.List down some criterias for Ensuring client satisfaction In the Fitting standards in clothing(3pts)

2.What are the two tests for garment inspections for purpose of confirming correct size(2pts)

3.What are Garment Fitting Problems and Reasons(4pts)

4.What is Tolerances measurements?(1pts)

Note: Satisfactory rating – 10 points Unsatisfactory below 10points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____



Information Sheet-3	1.3.Preparing all relevant paperwork and documentation.
---------------------	---

Good documentation constitutes an essential part of the quality assurance system and is key to operating in compliance with requirements. The various types of documents and media used should be fully defined in the manufacturer's Quality Management System. Documentation may exist in a variety of forms, including paper-based, electronic or photographic media. The main objective of the system of documentation utilized must be to establish, control, monitor and record all activities which directly or indirectly impact on all aspects of the quality of apparel products. The Quality Management System should include sufficient instructional detail to facilitate a common understanding of the requirements, in addition to providing for sufficient recording of the various processes and evaluation of any observations, so that ongoing application of the requirements may be demonstrated.

Required garment production documentation (by type):

- Site Master File:

A document describing the garment production related activities of the manufacturer.

- Instructions (directions, or requirements) type:

Specifications Describe in detail the requirements with which the products or materials used or obtained during manufacture have to conform. They serve as a basis for quality evaluation.

- Manufacturing Formulae, Processing, Packaging and Testing Instructions:

Provide detail all the starting materials, equipment and computerised systems (if

Page 147 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



any) to be used and specify all processing, packaging, sampling and testing instructions. In-process controls and process analytical technologies to be employed should be specified where relevant, together with acceptance criteria.

- Procedures:

(Otherwise known as Standard Operating Procedures, or SOPs), give directions for performing certain operations.

Documents should be designed, prepared, reviewed, and distributed with care. They should comply with the relevant parts of Product Specification Files, Manufacturing and Marketing Authorisation dossiers, as appropriate. The reproduction of working documents from master documents should not allow any error to be introduced through the reproduction process.

Documents containing instructions should be approved, signed and dated by appropriate and authorised persons. Documents should have unambiguous contents and be uniquely identifiable. The effective date should be defined.

Documents containing instructions should be laid out in an orderly fashion and be easy to check. The style and language of documents should fit with their intended use. Standard Operating Procedures, Work Instructions and Methods should be written in an imperative mandatory style.

Self-Check -2	Written Test
---------------	--------------

Page 148 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



Answer the following questions

1. List down some Required garment production documentation (3pts)

2. Documentation may exist in a variety of forms, mention what are they? (2pts)

Note: Satisfactory rating – 10 points Unsatisfactory below 10 points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____

Information Sheet-4	4.4. Storing or forwarding documents
---------------------	--------------------------------------

Page 149 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1
			December, 2020



Documentation

All sections of the form must be completed.

- In the event of the garments failing to meet the required specification, the reverse side of the form will be completed by the factory manager.
- The subsequent audit will be recorded

The completed forms will be filed in the proper manner in a secure location with access by the Quality Assurance Manager or the factory manager.

Procedures and records Receipt

There should be written procedures and records for the receipt of each delivery of each starting material, (including bulk, intermediate or finished goods), primary, secondary and printed packaging materials. The records of the receipts should include:

- a) The name of the material on the delivery note and the containers;
- b) The "in-house" name and/or code of material (if different from a);
- c) Date of receipt;
- d) Supplier's name and, manufacturer's name;
- e) Manufacturer's batch or reference number;
- f) Total quantity and number of received;
- g) The batch number assigned after receipt;
- h) Any relevant comment.

There should be written procedures for the internal labeling, quarantine and storage of starting materials, packaging materials and other materials, as appropriate.

Sampling

There should be written procedures for sampling, which include the methods and equipment to be used, the amounts to be taken and any precautions to be observed to avoid contamination of the material or any deterioration in its quality.

Testing

There should be written procedures for testing materials and products at different

Page 150 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production, level III	Version -1 December, 2020
-----------------	---	--	------------------------------



stages of manufacture, describing the methods and equipment to be used. The tests performed should be recorded. Other

Written release and rejection procedures should be available for materials and products, and in particular for the certification for sale of the finished product by the Qualified Person(s). All records should be available to the Qualified Person. A system should be in place to indicate special observations and any changes to critical data.

Records should be maintained for the distribution of each batch of a product in order to facilitate recall of any batch, if necessary.

There should be written policies, procedures, protocols, reports and the associated records of actions taken or conclusions reached, where appropriate, for the following examples:

- Validation and qualification of processes, equipment and systems;
- Equipment assembly and calibration;
- Technology transfer;
- Maintenance, cleaning and sanitation;

Self-Check -3	Written Test
---------------	--------------

Answer the following questions

1.list down some information should be included on the records of the receipts

Page 151 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



2.

Note: Satisfactory rating – 10 points Unsatisfactory below 10points

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

Answer Sheet

Name: _____

Date: _____

Score = _____

Rating: _____

Acknowledgement

We wish to extend thanks and appreciation to the many representatives of TVET instructors and oromiaTVET berue experts who donated their time and expertise to the development of this learning guide. We would like also to express our appreciation to the TVET instructors and respective industry experts of Regional

Page 152 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020



TVET Bureaus, TVET College/ Institutes, and Federal Technical and Vocational Education and Training Agency (FTVET) who made the development of this learning with required standards and quality possible. This learning guides was developed on January, 2021 at Bishoftu BIN international hotel.

The trainers who developed the Curriculum

No.	Name	Qual.	Educational background	Region	E-mail
1	Dejene Bifa			Oromia	
2	Endiriyas mifta			Oromia	
3	Teshome bikila			Oromia	
Page 153 of 156		Federal TVET Agency author/copyright		Version -1	
		TVET program-advanced apparel production, level III		December, 2020	



4	Fufa diriba			Oromia	
5	Dereje hundessa			Oromia	

Reference

Cooklin's Garment Technology for Fashion Designers 2nd Edition Steve Hayes,
John McLoughlin and Dorothy Fairclough Quality Inspection



Page 155 of 156	Federal TVET Agency author/copyright	TVET program-advanced apparel production,level III	Version -1
			December,2020