Ethiopian TVET-System

Basic Leather Garments and Goods Production

Operations LEVEL I

Based on May 2012 Occupational Standards

May, 2020

Module Title: Performing Basic Construction

TTLM Code: IND BLG1TTLM 0919v1

This module includes the following Learning Guides

LG35: Prepare for work
LG Code: IND BLG1 M09 LO1-LG-35
LG36: Carry out table work activities
LG Code: IND BLG1 M09 LO-1-LG-36
LG37: Finish work
LG Code: IND BLG1 M09 LO3-LG-37
LG38: Finish work
LG Code: IND BLG1 M07 LO4-LG-38

Instruction Sheet	LG35: Prepare for work

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

- Receiving and checking up work bundle and specification determine any follow up action in accordance with workplace procedures
- Quality of received work bundle assessment in accordance with work place procedures
- clearance and check up for tools functionality in accordance with work place procedures and OHS practices
- Appropriate construction technique selected according to the given work

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 –

- Prepare for work
- Carryout table work activities
- Finish work
- Dispatch completed Work

Learning Activities

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheet 1”.
3. Accomplish the “Self-check 1” in page 5.
4. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #2.
5. Submit your accomplished Self-check. This will form part of your training portfolio.
6. Read the information written in the “Information Sheets 2”.
7. Accomplish the “Self-check 2” in page 13.
8. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
9. Read the information written in the “Information Sheet 3”.
10. Accomplish the “Self-check 3” in page 17.
11. If you earned a satisfactory evaluation proceed to “Information Sheet 4”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.

12. Read the information written in the “Information Sheet 4”.
13. Accomplish the “Self-check 4” in page 21.
14. If you earned a satisfactory evaluation proceed to “Information Sheet 5”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
15. Read the information written in the “Information Sheet 5”.
16. Accomplish the “Self-check 5” in page 24.
17. If you earned a satisfactory evaluation proceed to “Information Sheet 6”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
18. Read the information written in the “Information Sheet 6”.
19. Accomplish the “Self-check 6” in page 28.
20. If you earned a satisfactory evaluation proceed to “Information Sheet 7”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
21. Read the information written in the “Information Sheet 7”.
22. Accomplish the “Self-check 7” in page 31.
23. If you earned a satisfactory evaluation proceed to “Information Sheet 8”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
24. Read the information written in the “Information Sheet 8”.
25. Accomplish the “Self-check 8” in page 34.
26. If you earned a satisfactory evaluation proceed to “Information Sheet 9”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
27. Read the information written in the “Information Sheet 9”.
28. Accomplish the “Self-check 9” in page 37.
29. If you earned a satisfactory evaluation proceed to “Information Sheet 10”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Learning Activity #6.
30. Read the information written in the “Information Sheet 10”.
31. Accomplish the “Self-check 10” in page 42. If satisfactory proceed to “Learning Guide # 25”. If not satisfactory, repeat “instruction 30”.

Information Sheet-1	Receiving, Determining and checking work bundle and specification workplace procedure

1.1 Receiving, Determining and checking work bundle and specification workplace procedure

Work bundle is a bundled component which is received from the cutting department, to be processed by the bench worker. The worker who received a bundle should check the components and the specification. Specification is an instruction which demonstrates how to do the work and what to check before start working. We have to check the following parameters against the specification and the patterns.

- Measurements
- Shapes
- Allowances
- Uniformity of components
- Amount of components
- Left and Right components
- Reference marks
- Pre-fabrications (skiving & splitting)

While checking the above parameters if there is a fault found in the components you have to make corrections or report the fault to your supervisor.

1.2 Assessing the received work bundle Quality

After checking the received bundle and specification the next step is to assess the quality. This assessment is used for ensuring that if the work bundle has the quality requirement which allows it to goes through the bench work process.
While assessing the quality of work you have to assure that all the components have

- Accurate Edges
- Same thickness
- Good surface/Grain
- Same color

Self-Check 1	Written Test

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

1 What is work bundle?(2pts)
2 What is the use of specification?(2pts)
3 What is the use of work place procedure? (2pts)
4 Write one of the quality parameters. (2pts)
5 What is the use of assessing the received work quality? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-2	clearance and check up for tools functionality

1.3 Cleaning and checking tools

Once you have check you have to determine what to do first and where to finish the given work. The work place procedure helps you to determine this, which is provided with the specific work. Workplace procedures are a fixed, step-by-step sequence of activities or course of action (with definite start and end points) that must be followed in the same order to correctly perform a task.

Tools

A tool is an extension of human hand. Tools are expensive and manufactured with high quality materials, properly machined, nicely finished, and fitted with comfortable handles. Hand tools offer high degree of control and precision. Using proper tools for the proper jobs and safety precautions are the key factors for producing quality products. As tools play a vital role in the manufacturing of leather products, it is necessary to keep them in good working condition by storing them ready to use as well as safe from damage.
In the process of bench work operation there are a variety of tools used; these tools should be functional and handy. Always and before using any tool we have to check that it is functional.

Some of check points for the tools can be:

- Checking if there is breakage on the tools
- Checking sharpness of Blades, Dies ,etc., …
- Checking the accuracy of measuring, and other related tools.

1.3.1 Brush

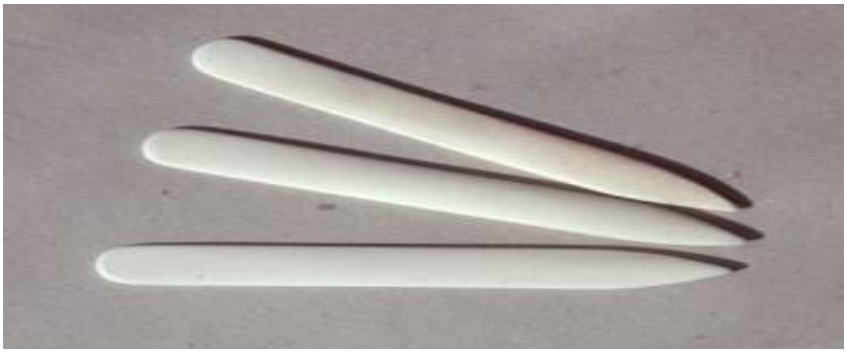
It is one of the most basic and useful tools known to leather products manufacturing. It generally consists of a handle or block to which fibers are attached. The fibers should be kept free from drying so that it will not damage material surfaces and minimizes wastage of glue. To prevent it from drying it should be washed with kerosene and kept in container filled with water.
To see the functionality of a brush we can press it on aboard and see if it is flexible, if it is stiffed and dry it should be washed with kerosene.

1.3.2 Mallet

It is one of tools used in leather production especially in leather garment because Less Damage to Work Piece Regular hammers cause scratches and dents during the hammering impact. It also Lower Noise Levels and Increased Safety

1.3.3 Bone folder:

Bone folder is made of horns. One end of the folder is filed off to a pointed edge and the other end is rounded off to a smooth edge. It is also made from plastic. It is used for edge folding. The edges of bone folder should be smooth. A rough or damaged edge of a bone folder can be rubbed and refined with a sand paper.

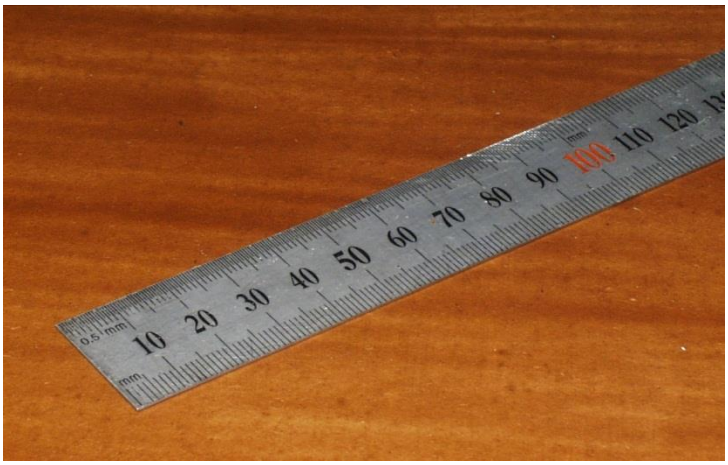


1.3.4 Punches

Punch or round drive punch is a cylindrical slotted punch made of tempered steel. Different sizes of punches 00, 0,1,2,3, and 4 are used for making different sizes of holes in leather components. These punches are used for fixing buttons, rivets, rivet buttons, eyelets, studs, etc. in leather goods. Oblong/crew punches are used for making holes in leather belts and hold all straps. As we check the revolving puncher we have to check also that the punch tubes have perfect and sharp rounds.

1.3.5 Ruler/ Stainless steel scale

Stainless steel scale/ruler is used as a cutting guide for cutting and it is also used as a measuring tool. This tool's edges should always kept smooth to make a good straight cut. The units written at both sides should be visible to read. If it is dark and hard to read it should be cleaned with oil and a towel.



1.3.6 Hammer

The common hammer has a foot-long handle, secured through the eye of the head with wooden block and a pair of iron ones. The hammer will do all the pounding, pulling, tapping, knocking, etc. Since hammer is no less extension of the arm than any other tool, it is important to have one that is suited size and is comfortable to use. Steel hammer is used in assembling process. Light weight hammers 100gms and 200gms are used for light works and hammers of weight 300gms and 500gms are used for medium and heavy works.
We have to check the head of hammer that it is flat and it has no bumps on it.

1.3.7 Hand stumper

Hand stumper is used in bench work operations. It is very convenient to use when compared to hammers. Hand stumper is used for punching holes, setting rivets, snaps and edge folding of glued components during assembling process as the hammer a hand stumper head should also be flat and should not have bumps.

1.3.8 Revolving punch

The revolving punch with four or six different size tubes is used for punching holes for lacing, riveting, eyeleting, and snap setting in leather components.
We have to check that the tubes have sharp rounds so that the holes made by the puncher will be smooth. We can check the functionality of the puncher on a scrap of leather.

1.3.9 Awl:

An awl is a hard sharp steel needle with a wooden handle. It helps to make marks during pattern cutting process and also during assembling process where leather components are marked and fitted with fittings. The tip of the awl should always be sharp; to check the functionality of the awl we can scratch it on a piece of board. If it makes a scratch on the board it means the tip is damaged and need to be sharpened.

1.3.10 Scissors

Scissors are used for cutting or trimming leather, lining, or reinforcements. Scissors should have sharp edges and should cut any materials smoothly and easily. We can check the functionality of a scissors by opening and closing it repeatedly and see if it is crossing over properly. Scissors can be sharpened and by a grinding wheel with care.

Self-Check 2	Written Test

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

1. How tools should be kept?(2pts)
2. What should we do before using any tool?2pts)
3. How do we check the functionality of a brush? (2pts)
4. How can you tell if a scissor is functional? (2pts)
5. How do we check the functionality of an Awl? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-3	Applying OHS practice

Manual handling techniques

What is Manual Handling?

Manual handling means lifting, lowering, pushing, pulling, carrying, moving, holding or restraining any object.

Manual handling encompasses more than just lifting or carrying an object. Manual handling can include a variety of activities for example pulling a control lever or operating power tools.

Prevention of manual handling Injuries

Most of occupational injuries at work happen while carrying out a manual handling action/s.

- **Actions and movements:**

The movements taken should not force any sudden actions, jerking/yanking or difficult to control movements, nor should they cause discomfort or pain or the requirement to be in an uncomfortable position.

- **Workplace and workstation layout:**

The work area design should be organized so that manual handling tasks should be done at waist level, without too much (or regular) bending, reaching or twisting.

- **Working posture and position:**

Vary work tasks so that the employee is not required to spend a long periods of time holding the same or similar posture / position. The worker should not be required to regularly bend down or twist around to complete their job or task.

- **Duration and frequency of manual handling:**

Injury risk increases, with any increase in the repetition or regularity of the required task, increase in the required pace of work and the lengthening of the duration of time that the task is performed.

- **Where the load is and how far it has to be moved:**

Manual handling injury risk is significantly increased when a load is below mid-thigh height or higher than shoulder level. There is also an increased risk of injury if a load is required to be placed with particular accuracy or carried over long distance/distances.

What precautions should workers take when moving materials manually?

When moving materials manually, workers should attach handles or holders to loads. In addition, workers should always wear appropriate personal protective equipment and use proper lifting techniques.

To prevent injury from oversize loads, workers should seek help in the following:

- When a load is so bulky that employees cannot properly grasp or lift it,
- When employees cannot see around or over a load, or
- When employees cannot safely handle a load.

Using the following personal protective equipment prevents needless injuries when manually moving materials:

- Hand and forearm protection, such as gloves, for loads with sharp or rough edges.
- Eye protection.
- Steel-toed safety shoes or boots.
- Metal, fiber, or plastic metatarsal guards to protect the instep area from impact or compression.

Self-Check 3	Written Test

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

1. What is manual handling?(2pts)
2. When shall workers seek help while manual handling? 2pts)

3. List personal protective equipment? (2pts)
4. How can we prevent injuries of manual handling? (2pts)
5. What precautions should workers take when moving materials manually? (2pts)

Note: **Satisfactory rating - 10 points** **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-4	Applying OHS practice

Safe Material Handling

Material handling simply refers to the handling, storage, and control of materials in a workplace. Material handling involves using the hands to move/use goods. Workers suffer many painful injuries because they forget or are not properly trained in the basics of safe material handling. Here are a few pointers about lifting and safe handling of materials:

Use required personal protective equipment:

- Think of your toes in case something heavy drops. Always wear steel toed shoes when lifting or handling heavy objects.

- Think of your hands. Wear good strong gloves when you handle anything rough, sharp, or splintery.

- **Before you lift Test** the load to determine its weight. Use tandem (multi-person) lifting or mechanical devices if the load is heavy or awkward.

- Be sure you've got a secure grip. Do not have anything in your hands when lifting other than the object you are lifting. Use lifting handles or handholds if provided. Strapping tape is not designed to serve as lifting handles.
- Be sure you have solid footing.
- Inspect the path you are going to follow while carrying the load. Make sure it is free of debris and obstacles.
- Check packaging to ensure it is secure and the load will not fall out while being handled.

When you lift and carry:

- Keep the load close to your body to minimize the strain.
- If the object is over your head, get a ladder or lift to get to it more easily.
- Do not reach to get an object off a pallet. Turn the pallet or walk around it to get closer to the item. If the item is light, slide it closer to you. Be careful if the item is sliding over shrink wrap or a wooden pallet as it may get caught.
- Crouch down with the load between your legs and get a good grip on the object.
- Lift smoothly and slowly with your legs. Keep your back vertical.
- Keep your body facing the load throughout the lift and while moving the load. Don't twist your body; pivot with your feet instead of your spine.
- Carry the load close to your body in the space between your shoulders and waist.
- Do not block your view with the load.
- Resist the temptation to carry that one extra box to avoid another trip.

Use equipment (dollies, carts, two-wheelers, hoists or lifts) to move loads whenever possible. Push rather than pull if using a manual device to move the load. Play it safe and smart. Follow these pointers in all of your lifting and handling of materials.

Self-Check 4	Written Test

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

1. What is safe material handling?(2pts)
2. What can be done to make material handling safe? (2pts)
3. What is advised while handling anything rough, sharp, or splintery? (2pts)
4. How can we minimize strain while carrying or lifting of materials? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-5	Applying OHS practice

Standard Operating Procedure

What is a Standard Operating Procedure?

Standard Operating Procedures (SOPs) are step by step instructions for carrying out specific jobs/tasks. For example, SOPs may describe how equipment will be used, or how measurements will be taken.
SOPs are valuable tools that are used to ensure that tasks are undertaken consistently, and to a high standard. They provide quality assurance that the jobs done will be consistent and therefore comparable.
Before you begin any jobs, you should check to see if SOPs exist for the procedures you intend to use.
If a SOP is available, you should review it to ensure it meets the specific requirements of your job.

The advantages of SOPs are that they:

1. Provide workers with numbered step by step instructions on a specific procedure (or procedure used to carry out a method) with minimum variability;
2. Ensure that the procedures are performed consistently and in compliance with organizational regulations;
3. Protect the health and safety of workers by enabling jobs to be carried out in the safest possible way. They ensure that all of the safety, health, environmental and operational information is available to perform specific procedures with minimal impact;
4. Facilitate training in procedures, for both new personnel and for those that need re-training (e.g. after extended absence from a position);
5. Serve as a historical record for use when modifications are made to that procedure and when the SOP is revised;
6. Promote quality, even if there are changes in the people undertaking the job; and
7. Encourage improvements and work evaluation by ensuring that the procedures are completed, and can be used in incident investigations to improve operations and safety practices.

Self-Check 5	Written Test

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

1. What is a standard operating procedure?(2pts)
2. What is the use of a standard operating procedure?(2pts)
3. What are the advantages of a standard operating procedure? (2pts)
4. Why is it necessary to review a standard operating procedure?(2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Ergonomics arrangement of work place

What is Ergonomics?

The word "Ergonomics" comes from two Greek words "ergon," meaning work, and "nomos" meaning "laws." Today, however, the word is used to describe the science of "designing the job to fit the worker, not forcing the worker to fit the job." Ergonomics covers all aspects of a job, from the physical stresses it places on joints, muscles, nerves, tendons, bones and the like, to environmental factors which can affect hearing, vision, and general comfort and health.

Ergonomics arrangement of work place

Ergonomics primary focus is on the design of work activity that suits the person in order to reduce the risks of musculoskeletal injuries resulting from work or workplaces.

The goal of ergonomics arrangement of work place is to provide maximum productivity with minimal cost; in this context cost is expressed as the physiological or health cost to the worker. Arranging of workplace ergonomically helps the prevention of work related musculoskeletal disorders through recognizing, anticipating, and reducing risk factors of work or workplaces. In effect, to design operations that ensure proper selection and use of tools, job methods, workstation layouts, and materials that impose no undue stress and strain on the worker.

Ergonomics factors

Ergonomics applies information about human behavior, abilities, and limitations and other characteristics to the design of tools, machines, tasks, jobs and environments for productive, safe, comfortable, and effective human use

A number of factors play a role in Ergonomics; these include

- Body posture and movement (sitting, standing, lifting, pulling and pushing), and
- Environmental factors (noise, lighting, temperature, humidity).

Body posture and movement (Physical stressors)

Include repetitive motions such as sitting, standing, lifting, pulling, and pushing. Other physical stressors could be tasks involving vibration, or tasks which involve using excessive force, such as lifting a heavy box of bundles. Working in an awkward position, can also cause problems. Repetitive motions, vibration, excessive force, and awkward positions are frequently linked to ergonomic disorders; many back injuries, and several other conditions may result from repetitive motions.

Environmental factors

Could include such things as; indoor air quality or excessive noise, insufficient lighting, temperature, and humidity. With its accompanying headaches, congestion, fatigue and even rashes, can result from poor air quality in a workplace. Excessive noise around heavy machinery or equipment can cause permanent hearing loss. Improper lighting can cause eyestrain and headaches, especially in conjunction with a sewing machine.

Preventing ergonomically injuries

It is important to listen to the signals your body gives you. If you suffer pain in the wrists or hands after a long day of bench working, stitching or cutting, examine your work area and work practices to see if they may be causing the problems.

Learn to make adjustments. Raise or lower chairs to avoid working with your wrists at an odd angle. Adjust your seats to avoid back pains. Take frequent breaks from repetitive tasks to give your body a rest. Always use proper lifting techniques. Sometimes small modifications to work procedures, posture, habits, and/or work station design can make a big difference in the way you feel at the end of a day.

Self-Check 6	Written Test

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

1. What is ergonomics?(2pts)
2. What are the factors which play a role in Ergonomics?(2pts)
3. What is the use of arranging workplace ergonomically? (2pts)
4. What is the goal of ergonomics arrangement of work place?(2pts)
5. What should one do to prevent ergonomically injuries**?** (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-7	Applying OHS Practice

Safe storage of equipment

The efficient handling and storing of equipment are vital to manufacturing industry. In addition to raw materials, these operations provide a continuous flow of work through the workplace and ensure that equipment is available when needed. Unfortunately, the improper handling and storing of equipment often result in costly injuries.

Applying general safety principles—such as proper work practices, equipment, and controls—can help reduce workplace accidents involving the moving, handling, and storing of equipment. Employees should know and 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 equipment and 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. Employees should examine their workplaces to detect any unsafe or unhealthful conditions, practices, or equipment and take corrective action.

What precautions must workers take to avoid storage hazards?

Stored equipment must not create a hazard for employees.

Employees should make themselves aware of such factors, how accessible the stored equipment is to the use and the condition of the containers where the materials are being stored.

In addition, workers should consider placing bound material on racks, and secure it by stacking, blocking, or interlocking to prevent it from sliding, falling, or collapsing.

Self-Check 7	Written Test

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

1. What does safe storage of equipment provide?(2pts)
2. What could improper handling and storing of equipment cause? (2pts)
3. Why employees should examine their workplaces? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-8	Applying OHS Practice

Reporting accidents and incidents

An accident is a separate event to injury, and is simply more than an event; it is something harmful that happens unexpectedly.

Incident is something that occurs casually in connection with work.

A workplace accident refers to any accident occurring in the course of a person's work.

Both the accidents and incidents should be reported as soon as they happen. Failure to report accidents allows the conditions that caused the accident to go unchecked and leave colleagues vulnerable to similar injuries.

Important Tips

Keep these suggestions in mind in case of a workplace accident:

- Document everything - keep copies of all correspondence, doctor's notes, forms, and letters.
- Consider keeping a journal of what's happened and note any verbal communications.
- Report the accident and incidents that happened.

Self-Check 8	Written Test

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

1. What is an accident?(2pts)
2. What is an incident?(2pts)
3. What could happen if an accident left unreported? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-9	Applying OHS Practice

Environmental practices

What is environmental practice?

It is a practice of protecting the natural environment on individual, organizational, or governmental levels, for the benefit of the natural environment and humans. Due to the pressures of population and technology, the environment is being degraded, sometimes permanently. This has been recognized, and governments have begun placing restraints on activities that cause environmental degradation.

Managing the impact on the environment and complying with legal responsibilities ensures leather and leather products manufacturing is environmentally friendly and able to realize possible financial benefits.

The production of leather and leather products leads to a number of significant issues before the leather is ready for cutting and after it is used.

Steps that can be taken

Leather should never be cleaned with abrasive solvents, alcohol, or wax-based products.
Cleaning products should not contain any volatile organic compounds (VOC's).
Scrap leather should be recycled to a company that makes small leather goods.

Self-Check 9	Written Test

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

1. What is environmental practice? (2pts)
2. What did managing the impact on the environment ensures? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

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Information Sheet-10	Appropriate construction technique selected according to the given work

Types of construction:

In leather goods manufacturing, different techniques of constructions are used for making leather goods. Most commonly used constructions are:

1. Cut edge construction
2. Fold-edge construction
3. Butt-edge construction
4. Stitch and turn construction
5. Piping construction

1. Cut-edge construction

The components are cut to definite sizes of the product and assembled. In this type of construction, the cutting edges are visible. The edges are flush or level when stitched. The edges are stained with the matching color of the product to improve its elegance. The edges are creased and wax polished. After wax polishing, the edges are rubbed with a piece of smooth cloth or circular slicker to get glossiness of the edge. Good cut-edgework depends upon the edge being cleanly cut and the crease line being bright and shiny.

2. Fold-edge Construction (turn-over construction)

In this type of construction, the leather components are cut with allowances for folding. The edges are skived to a suitable thickness for easy and perfect folding. Folding or turnover is done over the lining or reinforcement and then stitched. This encloses all raw cut-edges. This construction imparts greater durability and elegance to the products.

3. Butt-edge construction:

In butt-edge construction, two folded edges are joined together, keeping the grain side out and stitched. It gives a double edge with stitches on all round the edges.

4. Stitch and turn construction: (Turn-edge construction):

Turn edge or stitch and turn edge construction is very popular and extensively used in leather goods making. The stitches in the article are not visible outside. During assembly, the components are assembled with inside out (flesh side out) and stitched.

When stitching is over, the right side (grain side) of the article is pulled out. So, the stitches are seen only inside.

5. Piping construction (Stitch and turn construction):

Piping edge construction is similar to stitch and turn edge construction. The stitches in the article are not seen outside. During assembly, the components and piping are assembled with inside out (flesh side out) and stitched.

When stitching is over, the right side (grain side) of the article is pulled out. So, the stitches are seen only inside and the piping is seen outside. The piping on the seam adds strength and beauty. E.g. wrist bags, ladies handbags, air bags, shopping bags, etc.

Self-Check 10	Written Test

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

1. What is cut edge construction?(2pts)
2. What is folded edge construction? 2pts)
3. What is butt edge construction? (2pts)
4. What is stitch and turn construction? (2pts)

5. What is piping edge construction? (2pts)

Satisfactory rating - 10 points **Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

1. _____

Instruction Sheet	LG36: Carry out table work activities

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

- Necessary table work activity performed according to specifications
- Safe and appropriate uses of adhesives to achieve required quality
- Performing other table work operations according to requirement

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 –

- Perform necessary table work activities according to the given work
- Select and apply adhesives for a given work

Learning Instructions

1. Read the specific objectives of this Learning Guide.
2. Read the information written in the “Information Sheet 1”.
3. Accomplish the “Self-check 1” in pages 13.
4. If your rating is unsatisfactory, see your teacher for further instructions or go back to learning instruction #2.However, if you earned a satisfactory evaluation submit your accomplished Self-check which will form part of your training portfolio. And then, you can proceed to Learning Guide # 37.

Information Sheet-1	Necessary table work activity performed according to specifications

Table work Processes:

Table work processes are carried out by team of skilled technicians supervised by highly skilled supervisors. In bench work processes, the components are prepared with linings, zips, folding, gussets, piping, handle, etc. for subsequent process of assembling.

Some components may need immediate stitching and some may not. The prepared components, which need immediate stitching, are sent for stitching. Bench operations involves

1. Staining
2. Creasing
3. Buttoning
4. Zip fastening
5. Gluing
6. Folding
7. Trimming

1. Staining (edge dying)

Staining is done on products made by cut edge construction. The edges of the components are smoothened with sand paper first and then stained with water-soluble pigments using a brush. The staining is done carefully without damaging the surface of the leather components. After drying the edges are wax polished and rubbed with a piece of smooth cloth vigorously for glossiness. In case of bulk production, edge staining machine is used to stain the edges.

Fig: Edge dying by hand

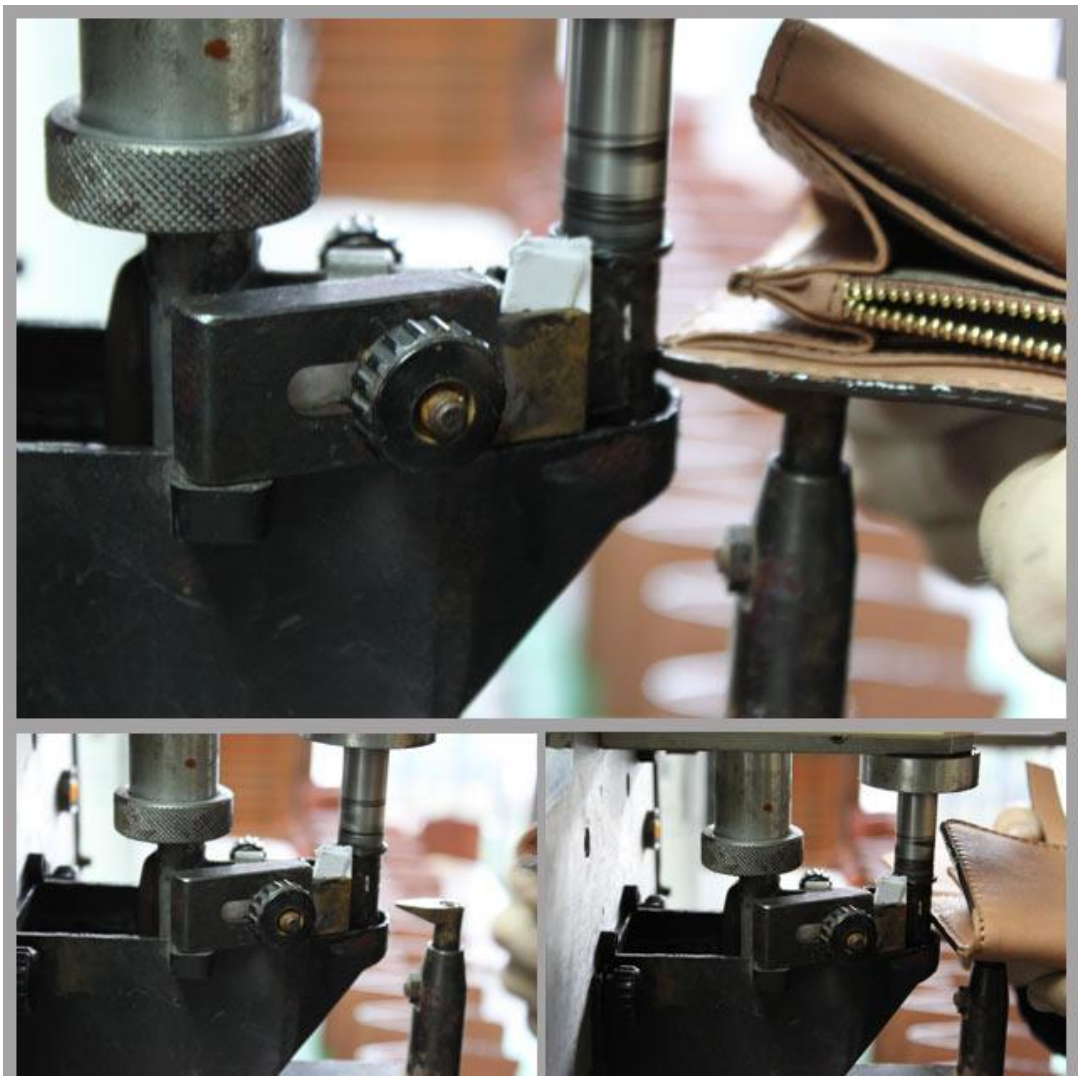


Fig: Edge dying by machine

2. Creasing

Creasing is done on the leather components with a suitable temperature. Creasing is done on cut edges as well as folded edges. Creasing helps in compressing the cut fibers at the edges and thus strengthens the edges. Creasing gives a permanent, slightly darker and glossy line. It improves the elegancy of the products. It also gives a decorative and aesthetic appearance. Using a variety of creasers which are single head creaser, double head creaser and adjustable creaser, creasing can be done. Care is taken to see that the working edge of the creaser is kept smooth to avoid scratching during creasing operation. The tip of the creaser is slightly rounded off for smooth sliding while creasing.

Fig: Leather creasing

The following points must be remembered while creasing:

1. The creasing line must be close to the edge.
2. The line marked should be distinct and glossy appearance.
3. Suitable temperature must be needed for perfect creasing.
4. The straight lines must be creased first and then the corners.
5. In case of bulk production, creasing machine is used for creasing.

3. Buttoning

Buttons of different sizes (3/2, 3/3, 4/3 and 7/7) are extensively used in leather goods. The button-fitting tool is used for buttoning. When fixing the buttons, care is taken to hammer the buttons gently as heavy hammering may damage the buttons. Since hand operation is a slow process, treadle operated or hand operated buttoning machine is used which ensures speedy operation and perfect setting of buttons. Automatic buttoning machine is used in big industries.

Fig: Buttoning

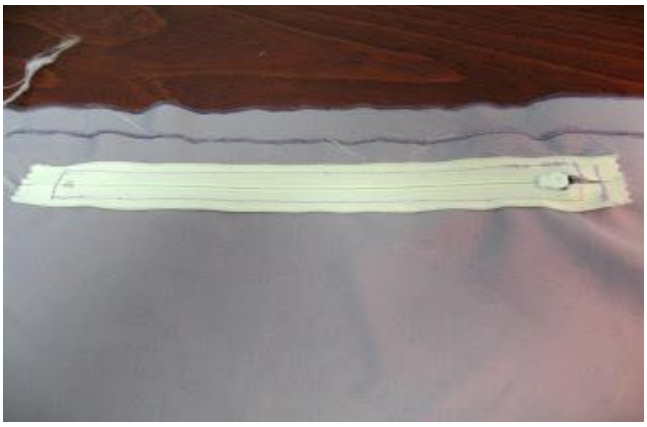
4. Zip fastening

Zip fasteners are extensively used in leather goods making because they enable quick opening and closing of the products. Different types of zips in different colors are fixed according to the needs of the products and also to match the color of the products. There are 3 types of zip sizes, which are commonly used in leather goods making.

7.1 No-3 zipper

7.2 No-5 zipper

7.3 No-7 zipper



5. Gluing

It is one and the most crucial table work operation in leather goods and garment production. It is done by using temporary and permanent adhesive .when we attach the component using adhesive we should

6. Folding

Folding allowance is extra space given around on the master pattern to use for fold. For leather garments and goods, most of the time in leather garment folding allowance is 1 cm around the seam edges and 1.5 cm – 5 cm for hemming, but it varies according to the design.

Seam fold:

Seam fold allowance is required to allow easy seam. The seam can be press open or stitch and fold. Most of the time seam allowance is 1 cm.

7. Trimming

Trim excess leather and thread after stitching of the components or products in the sewing machine by using Thread trimmer. It is also used in final finishing of the products to trim excess thread, left un-noticed. Thread trimming tool is a very important tool used to fuse excess thread after stitching. Since leather goods and garment are stitched with synthetic threads, it is necessary to use thread burning tool to fuse the excess thread

after stitching. This enhances stitch appearance on the products.

2.2 Using safe and appropriate adhesives

Adhesion plays a vital role in assembling components of leather, lining and reinforcements during fabrication of the products. Further strength of the parts can be achieved by stitching. There are two types of adhesives, which are extensively used in the fabrication of leather goods.

There are two types of adhesives, which are extensively used in the fabrication of leather goods.

1. Temporary adhesive and
2. Permanent adhesive

7.1. Temporary adhesive

Rubber adhesive is a temporary adhesive as it gives temporary bonding effect and so stitching is necessary after joining the components. It is beige colored natural rubber adhesive. It has easy spreading characteristics coupled with cleanliness; flexible bondage and economy of application make it particularly suitable for general works. It gives a firm hold while stitching and helps in making products with stitches.

Application

Rubber adhesive is applied uniformly to the surface to be bonded. After achieving maximum tack development, the surfaces are joined. The joined surfaces are rubbed to remove air bubbles. The components are then taken for stitching.

7.2. Permanent Adhesive

Synthetic rubber adhesive in solvent medium is a permanent adhesive as it gives permanent bonding effect. It is extensively used in leather products which are made without stitches and also in attaching components where stitching is not possible. It is more advantageous than other adhesives because drying takes place immediately. It is buff colored adhesive, freely flowing and very smooth to apply. It has good water, alkali and oil resistance coupled with high bonding strength which makes it an excellent adhesive for all types of high bonding works in leather goods manufacturing.

Application

Surfaces to be bonded must be clean, dry and even. The adhesive is applied thinly and rapidly to both the surfaces and the coverage of adhesive is ensured completely and effectively. The solvent of the adhesive is allowed to evaporate till tack formation is felt.

The glued surfaces are joined carefully and accurately avoiding air bubbles. The components are then pressed uniformly throughout for perfect and accurate joining.

Safe and appropriate uses of adhesives to achieve required quality

Solvent-bused adhesives (including solvent-containing types)

Adhesives of this class represent the most obvious hazard to users.

Storage

Store in a cool dry moderate condition at temperatures from 5' to 30’

Usage

Avoid inhaling the vapors - use in well ventilated areas - avoid contact with the skin.

The use of suitable barrier creams for protection of the skin and/or gloves is recommended. Removal of adhesives from the skin should be done with suitable antiseptic cleaning agents rather than straight solvents. When handling low- viscosity adhesives, suitably approved goggles or face shields should be worn to protect the eyes from splashes.

Wherever possible, buildup of solvent vapors in the work atmosphere should be controlled by adequate ventilation using flameproof exhaust fans where necessary.

If this is not practicable, then suitable breathing apparatus, such as respirators, should be worn.

Spillage

Clean up immediately using sand or powdered limestone to absorb the adhesive before scraping up the residues and disposing of them according to the local regulations.

Fire Risk

If the adhesive contains flammable solvents, DO NOT store or use near naked flames and avoid sparks and non-flameproof equipment.

Toxicity

Although toxicity of solvent vapors from adhesives varies considerably the breathing of appreciable quantities of solvent-laden air should be avoided.

More effective ventilation is required to maintain the solvent vapor concentration in the working area below the permissible limit. Where necessary, this concentration should be regularly monitored to ensure safe working conditions.

Water-based adhesives (including emulsions, lattices and solutions)

Being water based this class of product is not normally flammable. The dry adhesive film formed when water is removed may be capable of burning but does not usually sustain combustion. Some synthetic polymers depolymerize under heat, liberating volatile, toxic and/or flammable vapors.

Solvents are incorporated in many emulsion adhesives for special applications and this may affect toxicity and flammability.

Synthetic lattices or emulsions contain free monomer which, although normally present at low levels, can be a potential hazard to health. Other volatile ingredients such as ammonia, formaldehyde etc can also be troublesome. All such products should therefore be used with adequate ventilation.

Contact with the skin should be avoided but if this does occur aqueous adhesives should be washed off with cold water before they can dry. This is to avoid discomfort rather than injury from adherent polymer. However, repeated contact may cause dermatitis in sensitive individuals and the use of barrier cream and/or protective gloves are advisable.

Water-based Adhesives

If adhesives dry on unprotected skin some will be found to pull off without inconvenience. Others, particularly pressure sensitive films, are less easy to remove and may require especial skin cleanser. Do not use solvents.

Splashes into eyes, mouth or nose should be washed without delay with plentiful quantities of water and medical advice should be obtained immediately if considered necessary.

2.3 Performing other table work operation

2.3.1 Punching

Punching is the process of making holes in leather components using a set of hole punching tools for varied sizes of holes needed for fixing fittings. Holes are made to fix buckles, buttons, eyelets, rivets, rivet buttons, studs etc. Punching holes are done in the articles like belts, watch straps, shoulder straps etc to insert the buckle prong. In case of bulk production, punching is done by hand or treadle operated punching machine.

Fig: punching

2.3.2 Riveting

Riveting is done with rivets and rivet buttons using riveting tool for fixing handles, hinges, locks, etc. and also for joining assembled components. Riveting is also done in the riveting machine in case of bulk production. Automatic and Pneumatic riveting machines are used in big industries.

Fig: riveting

2.3.3 Eye letting

Eyeleting is done by eyeleting tool. Colored small eyelets are used to fasten key hooks fittings in key cases while fancy eyelets are used in stretch bags. In case of bulk production, an automatic eyeleting machine is used.

Fig: eyeleting

Self-Check 1	Written Test

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

1. What is the use of edge dying?(2pts)

2. What are the two types of adhesives?(2pts)
3. Which opening system allows a quick opening and closing of the products?(2pts)
4. Which type of adhesive is not flammable? (2pts)
5. Write the key points which must be remembered while creasing? (2pts)

Note: **Satisfactory rating - 10 points Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Instruction Sheet	LG37: Finish work

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

- Finishing operations are performed according to the work place procedures
- Components are checked against specification
- Faults are reported in accordance with company procedures and quality measures

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 –

- Finish work according to the work place procedures

Learning Instructions

5. Read the specific objectives of this Learning Guide.
6. Read the information written in the “Information Sheet 1”.
7. Accomplish the “Self-check 1” in pages 5.
8. If your rating is unsatisfactory, see your teacher for further instructions or go back to Learning instruction #2.
9. However, if you earned a satisfactory evaluation submit your accomplished Self-check which will form part of your training portfolio. And then, you can proceed to Learning Guide # 38.

3.1. Performing finishing operations

Information Sheet-1	Performing finishing operations according to the work place procedures

Finishing is the final process in the production of leather goods. A team of semi-skilled technicians and helpers headed by a quality control supervisor ensures finishing. After stitching, the articles are checked carefully.

Finishing operations

The following are necessary operations in the finishing process.

Removing excess thread: Excess threads which are found in every part of the product should be trimmed and burned. Excess thread is removed by fusing with a fusing tool or with a candle.

Removing excess adhesive: Adhesives left on the product while in the assembling process should be cleaned. You have to check the edges and turns of the product kindly and clean the adhesives found around. Excess adhesive is removed with a piece of crepe rubber sheet.

Removing pencil marks: The marks which were used to refer joining points, buttons, etc. should be looked and cleaned. Pencil marks are removed with a piece of wet cloth or sponge.

Cleaning the whole product: The whole product is cleaned both inside and outside with a clean piece of cloth. Before the articles are sent for packing, strict quality control should be observed for perfection in assembling, stitching accuracy and smooth functioning of fittings.

3.2 Checking components against specification

Conformance checking of components is a testing method to see if the application and its specification are equivalent. Such checking is necessary to assure if the requirements given in the specification are achieved or not.

The purpose of checking of a component is:

- To have defective work corrected
- To prevent the dispatching of defective work

Examples of checking components against specification

- Checking the size of the front
- Checking the size of the back
- Checking the size of the gusset and base
- Checking the width and length of the straps
- Checking the size of pockets
- Checking the distance of the drop length
- Checking the edges
- Checking the construction

3.3 Reporting and/or returning faults for rework or repair

While checking components some faults may be identified, these faults should be reported to the superiors or return to the assembling section where they could get repaired or reworked.

Self-Check 1	Written Test

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

1. What is the purpose of component checking?(2pts)
2. What should we do if we get faults while checking components?(2pts)
3. What is finishing operation?(2pts)

4. What are the necessary operations in the finishing process? (2pts)

Note: **Satisfactory rating - 10 points Unsatisfactory - below 10 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____

Rating: _____

Name: _____ Date: _____

Short Answer Questions

Instruction Sheet 1	LG38: Finish work

Information Sheet-1	Component/ product bundling, stacking, storing or dispatching

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

- Components/ products are bundled, stacked, stored or dispatched
- Records are completed and maintained

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 –

- Bundle, stack or dispatch components/products
- Complete and maintain records

Learning Instructions

10. Read the specific objectives of this Learning Guide.
11. Read the information written in the “Information Sheet 1”.
12. Accomplish the “Self-check 1” in pages 5.
13. If your rating is unsatisfactory, see your teacher for further instructions or go back to Learning instruction #2.
14. However, if you earned a satisfactory evaluation submit your accomplished Self-check which will form part of your training portfolio. And that will be the completion of the Module (Competency).

4.1 Bundling, tracking, dispatching complete work

Dispatching

Dispatching is forwarding a work to the next section for further process.

Bundling

Bundling is the process of assembling the same type of components or products together.

This process is carried out to prevent merging different types of components.

Stacking

Stacking is the process of giving batches or identification for the bundled products or component.

This process allows you for identifying easily any products by only seeing

4.2 Recording Production faults

This unit is to monitor your own production activities;

- identify and find out the cause of faults;
- correct faults;
- make a variety of decisions;
- use appropriate methods not only to rectify any faults but to

Prevent any repetition of the fault.

The job role will involve:

- Finding the cause of faults in materials and products
- Correcting faults and recording details
- Carry out quality checks at specified intervals according to instructions
- Identify faults and take appropriate action
- Record information accurately, completely and legibly
- Identify faults in materials and products
- Identify causes of faults to maintain product quality
- Make adjustments promptly to return product to specification
- Monitor rectified faults to ensure the problems have been solved
- Record adjustments not covered by established

The faults that happened in the process of the production, the cause, and the solution taken must be recorded and kept safe.

This helps to prevent the fault.

Following points must be recorded

- Reason behind the fault.
- How to correct it.
- What correction technique is used?

4.3 Completing and maintaining records

At the end of your work, all workplace records should be updated. It is the responsibility of the operator to:

- do a quick visual check to make sure everything is OK
- ensure the work area housekeeping is up to standard
- ensure that productions are dispatched accordingly

Self-Check 1	Written Test

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

1. What is dispatching?(2pts)
2. What is bundling? 2pts)
3. Why is bundling carried out? (2pts)
4. What is stacking? (2pts)
5. What is the use of stacking? (2pts)

6. What are the points which must be recorded while recording production faults?(2pts)
7. What is the use of recording production faults?(2pts)

Note: **Satisfactory rating - 14 points** **Unsatisfactory - below 14 points** you can ask your teacher for the copy of the correct answers

Answer Sheet

Score = _____
Rating: _____

Name: _____ Date: _____

Short Answer Questions

LIST OF REFERENCE MATERIALS

1. A Manual of Leather Accessories and Leather Wear, Subramanian Natesan, CLRI, ADYAR, CHENNAI, INDIA