Carpentry NTQF Level II

Learning Guide #53

Unit of Competence: Install Lining, Paneling and Molding

Module Title: Installing Lining, Paneling and Molding

LG Code: EIS CRP2 M12 LO6-LG-53

TTLM Code: EIS CRP2 M12 TTLM 0919v1

LO: 6 clean up

Instruction Sheet	Learning Guide #52

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

- clearing Work area and disposing materials
- Reusing or recycling materials
- cleaning, checking, maintaining and storing Plant, tools and equipment

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 –

- clearing Work area and disposing materials
- Reusing or recycling materials
- cleaning, checking, maintaining and storing Plant, tools and equipment

Learning instruction

- ✓ Read the specific objectives of this Learning Guide.
- ✓ Read the information written in the “Information Sheets 1”. Try to understand and familiarize what are being shown and discussed. Ask your teacher for assistance if you have hard time understanding them.
- ✓ Accomplished and submit “Self-checks 1” for evaluation.
- ✓ If you earned a satisfactory evaluation for "self-check 1" then proceed to “Operation Sheet 1”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Information Sheet 1.
- ✓ Read the “Operation Sheet 1” and try to understand the procedures discussed.
- ✓ Accomplish and submit “Operation Sheet 1” for evaluation.
- ✓ If you earned a satisfactory evaluation for one "Operation Sheet 1" then proceed to the next “Information Sheet”. However, if your rating is unsatisfactory, see your teacher for further instructions or go back to Operation Sheet where you get unsatisfactory evaluation.
- ✓ Continue to the next “Information Sheet” and follow instruction for learning activities
- ✓ After all “Self Check” and “Operation Sheet” is accomplished and evaluated proceed to “LAP Test”.

- ➢ Your teacher will evaluate your output either satisfactory or unsatisfactory. If unsatisfactory, your teacher shall advice you on additional work. But if satisfactory you can proceed to the next topic.

Information Sheet 34	clearing Work area and disposing materials

34.1 clearing Work area and disposing materials

Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, paint, or the like.

Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations

Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction

- ✓ **Recyclable materials** include many kinds of glass, paper, cardboard, metal, plastic, tires, textiles, batteries, and electronics. The composting or other reuse of biodegradable waste—such as food or garden waste—is also a form of recycling.

Reuse and recycling of C&D materials is one component of a larger holistic practice called sustainable or green building construction. The efficient use of resources is a fundamental tenet of green building construction. This means reducing, reusing, and recycling most if not all materials that remain after a construction or renovation project. Green building construction practices can include salvaging dimensional lumber from the project, using aggregates reclaimed from crushed concrete or grinding drywall scraps for use on site as a soil amendment.

At the end of a building's life, demolition generates large amounts of materials that can be reused or recycled, principally wood, concrete and other types of masonry, and drywall. Rather than demolish an entire building, consider "deconstructing" all or part of the structure. Deconstruction is the orderly dismantling building components for reuse or recycling. In contrast to demolition, where buildings are knocked down and materials are either land filled or recycled, deconstruction involves carefully

Taking apart portions of buildings or removing their contents with the primary goal being reuse. It can be as simple as stripping out cabinetry, fixtures, and windows, or as involved as manually taking apart the building frame.

- ✓ **Recycling**

Recycling is the process of converting waste materials into new materials and objects. It is an alternative to "conventional" waste disposal that can save material and help lower greenhouse gas emissions. Recycling can prevent the waste of potentially useful materials and reduce the consumption of fresh raw materials, thereby reducing: energy usage, air pollution (from incineration), and water pollution (from landfilling).

Recycling is a key component of modern waste reduction and is the third component of the "Reduce, Reuse, and Recycle" waste hierarchy. Thus, recycling aims at environmental sustainability by substituting raw material inputs into and redirecting waste outputs out of the economic system.

- ✓ **Recycling and reuse**

Recycling involves the collection of used and discarded materials processing these materials and making them into new products. It reduces the amount of waste that is thrown into the community dustbins thereby making the environment cleaner and the air fresher to breathe

Disposal is the critical last step in handling PPE. Ensure that you remove and discard PPE without causing contamination to yourself, garbage collectors, or the environment. PPE may have an expiration date, while other PPE requires careful inspection – read the PPE manufacturer directions and be diligent about disposal of PPE that will no longer provide protection.

Storage instructions from the PPE manufacturer must be followed for both reusable and disposable PPE. Most PPE must be protected from chemicals, sunlight, extreme temperatures, excessive humidity, and moisture, or the specified shelf-life will be reduced. Disposable, reusable, or limited-use PPE must be discarded if not stored properly.

Self-Check -1	Written Test

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

1. ------- is the process of converting waste materials into new materials and objects.
   A. Cleaning
   B. Recycling
   C. Reusing
   D. All

2. --------- is the critical last step in handling PPE
   A. Disposal
   B. Cleaning
   C. Kaizen
   D. None

Note: **Satisfactory above – 4 out of 8 points Unsatisfactory - below 4 out of 8 point**

Information Sheet 35	Reusing or recycling materials

35.1 Disposing, reusing and recycling materials

- ✓ **Recyclable materials** include many kinds of glass, paper, cardboard, metal, plastic, tires, textiles, batteries, and electronics. The composting or other reuse of biodegradable waste—such as food or garden waste—is also a form of recycling.

Reuse and recycling of C&D materials is one component of a larger holistic practice called sustainable or green building construction. The efficient use of resources is a fundamental tenet of green building construction. This means reducing, reusing, and recycling most if not all materials that remain after a construction or renovation project. Green building construction practices can include salvaging dimensional lumber from the project, using aggregates reclaimed from crushed concrete or grinding drywall scraps for use on site as a soil amendment.

At the end of a building's life, demolition generates large amounts of materials that can be reused or recycled, principally wood, concrete and other types of masonry, and drywall. Rather than demolish an entire building, consider "deconstructing" all or part of the structure. Deconstruction is the orderly dismantling building components for reuse or recycling. In contrast to demolition, where buildings are knocked down and materials are either land filled or recycled, deconstruction involves carefully

Taking apart portions of buildings or removing their contents with the primary goal being reuse. It can be as simple as stripping out cabinetry, fixtures, and windows, or as involved as manually taking apart the building frame.

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✓ Recycling and reuse

- **Recycling involves** the collection of used and discarded materials processing these materials and making them into new products. It reduces the amount of waste that is thrown into the community dustbins thereby making the environment cleaner and the air fresher to breathe
- **Disposal** is the critical last step in handling PPE. Ensure that you remove and discard PPE without causing contamination to yourself, garbage collectors, or the environment. PPE may have an expiration date, while other PPE requires careful inspection – read the PPE manufacturer directions and be diligent about disposal of PPE that will no longer provide protection.
- **Storage** instructions from the PPE manufacturer must be followed for both reusable and disposable PPE. Most PPE must be protected from chemicals, sunlight, extreme temperatures, excessive humidity, and moisture, or the specified shelf-life will be reduced. Disposable, reusable, or limited-use PPE must be discarded if not stored properly.

✓ CONSTRUCTION WASTE MANAGEMENT PLAN

Develop and implement a CWMP consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Include separate sections in plan for demolition and construction waste. Indicate quantities by weight or volume, but use the same units of measure throughout the CWMP.

Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, reused, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. **Salvaged Materials for Reuse**: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. **Salvaged Materials for Sale**: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. **Salvaged Materials for Donation**: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
4. **Recycled Materials**: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
5. **Disposed Materials**: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. **Handling and Transportation Procedures**: Describe method that will be used for separating recyclable waste, including sizes of containers, container labeling, and designated location on Project Site where materials separation will be located.

Materials Handling Procedures: Provide a description of the means by which any waste materials identified will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities

Self-Check -2	Written Test

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

Multiple choice

1. --------is the process of converting waste materials into new materials and objects
   A. Reuse
   B. Repair
   C. Recycling
   D. None

Blank space

2. ----------is Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates

Note: **Satisfactory above – 4 out of 8 points Unsatisfactory - below 4 out of 8 point**

Information Sheet 36	cleaning, checking, maintaining and storing Plant, tools and equipment

36.1 Maintaining plants, tools and equipment's

Introduction to maintenance

Maintenance can be defined as working on something to keep it in a functioning and safe state and preserving it from failure or decline. The "something" could be a workplace, work equipment, or means of transport (e.g. a ship).

1, Preventive – or proactive – maintenance is carried out to keep something functional. This type of activity is usually planned and scheduled.

2, Corrective – or reactive – maintenance is repairing something to get it working again. This is an unscheduled, unplanned task, usually associated with greater hazards and higher risk levels.

- ✓ **Maintenance** is not the exclusive domain of fitters and mechanics. It is the responsibility of almost all workers in every sector and is carried out in almost every working environment. Workers' health and safety can be affected during the maintenance process, but also by lack of maintenance or inadequate maintenance. Design of equipment and the work area also has a significant impact on the health and safety of workers performing maintenance.

For the purpose of this e-fact, portable tools are defined as tools which can be carried by hand. These tools can be divided into non-powered portable (hand) tools and powered portable tools.

Non-powered portable (hand) tools include saws, hammers, screwdrivers, pliers, axes and spanners. The greatest hazards posed by these tools result from misuse and improper maintenance. Blunt tools, for example, can make the work more difficult and result in more injuries.

Powered portable tools

There are several types of power tools, based on the power source they use: electric power operated tools (e.g. circular saws, drill machines), pneumatic power tools (e.g. hammers, chippers, compressed air guns), liquid fuel (gas) powered tools (e.g. saws),

hydraulic power tools (jacks), and powder-actuated tools (nail guns).
Powered portable tools are present in nearly every industry. They help to perform tasks that otherwise would need exhausting manual work. But these everyday tools can cause serious injuries, such as finger or hand injuries or severe eye injuries, when they are not used or maintained properly. Broken (defective) tools, or tools that have been modified unprofessionally can be dangerous. For instance, defective electric-powered tools can cause burns and shocks or even death through electrocution. Pneumatic tools can be very noisy and cause hearing loss. Portable tools are used intensively on construction sites, so that the workers are constantly exposed to hazards associated with their use

- Special attention must be paid to the maintenance of portable tools to prevent or eliminate hazards. Control and maintenance of portable tools at construction sites is a challenge due to the nature of construction sites and because, by their very nature, portable tools are easily transported. Accidents can also occur during maintenance of defective powered tools.

Figure 1 portable tools

Safe maintenance - Portable tools in construction

Hazards and risks associated with poorly maintained portable tools on construction sites

Poorly maintained portable tools in construction (either hand tools or powered tools

present significant health and safety risks to the workers using them. These risks are proportional to the state of repair of the tools and increase through time. Ad hoc repair of damaged equipment is often carried out on construction sites to keep the work going. Such repairs are frequently done in hurry, in an offhand manner, often involving improvised solutions (e.g. replacing a fuse with a nail, taping up damaged electric cable). Unprofessionally repaired equipment can be dangerous.

Hazards and risks induced by lack of or inadequate maintenance include:

Hand tools:

- Mechanical failure or loss of control when using a tool with defective parts. Examples o funsafe tools are hammers with loose or damaged heads, screwdrivers with broken handles or blunt edges, chisels with mushroomed heads, and blunt saws.

Power tools:

- Malfunctioning of safety devices such as emergency button (red button), protective covers, guards, etc. In case of emergency these devices will not work properly or will provide limited protection to the worker, which in some cases can be worse than no protection at all because it gives a false sense of security.
- Risks of electrocution, shock or burns due to electrical malfunctions, torn cables and lack of proper insulation or proper earthing.
- Cracked or broken grinding wheels or cracked blades can cause injuries. E.g. cracked abrasive wheels could fly apart in operation, which could lead to serious injury or death.
- Emissions of chemical substances such as toxic fumes or dust, etc.
- Noise and vibration emitted by almost all portable tools that can lead to hearing loss and hand–arm vibration syndrome respectively. Vibration can cause “white-finger” disease, which arises from damage to the muscles and nerves that control the blood flow. Poorly maintained tools can cause a significant increase in noise and vibration emissions (e.g. a cutting tool that is not sharp emits higher levels of

vibration). Also, damaged anti-vibration mountings in a tool can increase transmission of vibration to the worker.

OSH management and maintenance

The Framework directive obliges the employers to take the necessary measures to ensure the health, safety and welfare of all their workers including those involved in maintenance. Employers have to carry out a workplace risk assessment to identify hazards related to the use and maintenance of portable tools and take preventive measures to eliminate or minimise the risks. Companies contracting out maintenance work have to make sure that the contractor is managing occupational health and safety according to the legal requirements.

✓ Maintenance and inspection programmes

The key to safe maintenance is putting in place a maintenance programme, integrating safety and health aspects of maintenance and including inspection, reporting and record keeping procedures. Records must be kept to provide information for planning maintenance and replacement activities so that they occur at the proper time. Proper maintenance management of equipment requires a detailed inventory of all major items, including among other things information on manufacturer, model, year and number, and a list of the parts required for normal service and major repairs respectively.

An important part of the maintenance program is the inspection program setting out the frequency of formal inspections to be carried out by competent and trained maintenance technicians

Portable tools must be checked:

- Before the tool is put into use for the first time
- After servicing and changing parts

- At regular intervals appropriate for each tool.

Factors to consider when making the maintenance plan

- Type of tool and power source
- Manufacturer's instructions and recommendations
- Age of the tool
- Frequency of use and the work cycle of the tool
- Working environment in which the tool is used (e.g. wet or dusty), or likelihood of mechanical damage
- Foreseeable misuse of the tool
- Effects of any modifications or repairs to the tool
- Analysis of previous records of maintenance.

- ✓ Checklist

A checklist can help you identify the hazards related to maintenance of portable tools and take the necessary preventive measures. Depending on the power source, different checklists may be necessary:

General questions	**Yes**	**No**
Is there a maintenance plan?		
Are portable tools periodically tested and labelled with the date of test?		
Are instructions and operating manuals available?		
Are damaged tools labeled “do not use"?		
Are maintenance records kept of all tools that are used on the site?		
Are all tools used at the workplace in good condition and clean?		
Are all tools properly lubricated?		
Are blades, bits, and other cutting parts sharp and well fixed, and not worn, cracked or lose?		
Are tools stored in a dry and safe place?		
Are blades removed when tools are being transported, stored or not in use?		
Are maintenance workers trained in safe working procedures?		
Electric power operated tools	**Yes**	**No**
Are tools disconnected from the power source?		
Are the cables or plugs damaged?		
Have the electrical tools been put to unsuitable conditions		

(wet or dusty)?		
Are flexible extension cables in safe condition?		
Are there signs of overheating?		

✓ Tool design

Design for good maintainability helps to facilitate the maintenance of portable tools and reduces safety risks.
All components and interfaces should be designed and located so that they are directly and easily accessible for maintenance. Maintenance tasks should be designed to eliminate or minimize the need for special tools.
Good design can significantly contribute to eliminating or reducing the opportunity for human error during maintenance.

Self-Check -3	Written Test

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

1) What is the meaning and importance of maintenance?

Note: **Satisfactory above – 4 out of 8 points Unsatisfactory - below 4 out of 8 point**

List of Reference Materials

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- https://www.ccaa.com.au/imis_prod/documents/Library Documents/C
- https://www.houselogic.com/remodel/painting-lighting/concrete-painting/
- https://www.google.com/search?sxsrf=ACYBGNQHUi0Oo5VLVWER8HU5E4Hiyr5yWw:1569940933971&q=what+is+Applying+co

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