



Bar Bending & Concreting Level II

Learning Guide #45

**Unit of Competence: Carry -out Concrete Bursting
Cut, core and Crushing
Operations**

Module Title: Carrying-out Concrete Bursting

**Cut, core and Crushing
Operations**

LG Code: EIS BBC2 M12 LO5 LG-45

TTLM Code: EIS BBC2 TTLM 10 19 v1

LO5: Clean up



Instruction Sheet

Learning Guide 45

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

- 5.1. Clearing work area of debris from bursting/crushing operation
- 5.2 Disposing of, reusing or recycling material debris
- 5.3 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 –

- Clear work area of debris from bursting/crushing operation
- Dispose material debris
- Check tools and equipment are cleaned, maintained and stored

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7.
3. Read the information written for each “Information Sheets given below
4. Accomplish the “Self-check after reading & understanding of each information sheet
5. If you earned a satisfactory evaluation from the “Self-check” proceed to “Operation Sheet
6. Lastly do the “LAP test
7. If you have any question ask your teacher



Information Sheet 1

Clearing and materials disposing of, reusing or recycling work area

5.1 Clearing and materials disposing of, reusing or recycling work area

✓ Clearing work area

A clean, well-ordered, attractive work environment sets the tone of your establishment. It encourages tidy work habits in employees. It helps reduce fatigue. It promotes good worker-management relations. It also gives a lift to morale, which is reflected in the quality of production and overall efficiency. Good housekeeping is also a good advertisement for your company. Customers and clients have more confidence in an organization when they see work being carried out efficiently in clean, pleasant, well ordered surroundings. There's an even more important reason why good housekeeping matters — it makes the undertaking a safer place to work in

Keep Floors Clean: Every year thousands of work injuries are caused by people falling. Floor conditions are responsible for many of these accidents. When floors are given the right treatment they are much easier to keep clean and hygienic.

Spilt oil and other liquids should be cleaned up at once. Chips, shavings, dust, and similar wastes should never be allowed to accumulate. They should be removed frequently, or better still, be suitably trapped before they reach the floor

Dispose of Scrap and Prevent Spillage: It's a common practice to let the floor catch all the waste and then spend time and energy cleaning it up. It is obviously better to provide convenient containers for scrap and waste and educate employees to use them. Safety will benefit, expense will be saved, and the working area and learning classes will be a better place in which to work & learn. Oily floors are a common accident and fire hazard. Splash guards and drip pans should be installed wherever oil spills or drips may occur. Prevent accidents by keeping oil and grease off the floor



✓ Reusing or Recycling of Materials

Reusing and recycling construction products avoid or reduce waste and saves primary resources.

By recycling, we contribute to more sustainable development by eliminating or reducing waste and by saving primary resources. Also, recycling some materials, like metals, saves energy (and reduces carbon emissions) since it requires less energy to re-melt scrap than it does to produce new metal from primary resources.

The benefits of recycling are well understood and include:

- Reducing waste, i.e. diverting waste from landfill
- Saving primary resources, i.e. substituting primary production
- Saving energy and associated greenhouse gas emissions through less energy intensive reprocessing



Self-Check 1

Multiple Choice

Instruction: Select the best answer and encircle the letter

1. What is the advantage of reusing and recycling construction products
 - A/ Avoids waste
 - B/Reduces waste
 - C/ Saves primary resources
 - D/ All of the above are correct
2. -----is contribute to more sustainable development by eliminating or reducing waste
 - A/ Recycling
 - B/ Technology
 - C/ Learning
 - D/ All of the above
3. What is the disadvantage if someone left Keeping Floors Clean?
 - A/ It will be attractive
 - B/ It will be good for working
 - C/ It will be caused of people falling
 - D/ All of the above
4. Which one is true about clear area?
 - A/ It will be benefit by providing safe working area
 - B/ Expense will be saved
 - C/The working area and learning classes will be a better place in which to work
 - D/ All of the above



Note: Satisfactory rating - 2 points Unsatisfactory - below 2 points
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____



Information Sheet 2	Cleaning checking maintaining and storing Plant, tools and equipment
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5.2 Cleaning checking maintaining and storing Plant, tools and equipment

✓ Maintaining plants, tools and equipment

Construction tools and equipment suffer a lot of wear and tear. Hence, it is important to maintain them regularly. This will help increase the service life as well as the performance of the equipment. All tools are equipped with maintenance guidelines specific to the particular tool. Maintenance will help to increasing the life of your tools.

Make sure your tools are sharp and in otherwise perfect condition to function efficiently. Using tools that are worn will stress the rest of the components, reducing their service lives. Precautionary maintenance of tools and equipment will also help reduce unwanted expenses related to broken or faulty equipment. Small problems generally lead to bigger issues if left unattended. Perform all cleaning and repair work as soon as you see any signs of damage or neglect. This will keep your instruments from failing you at crucial moments.

Inspect tools regularly. Regularly inspect your tools for signs of damage and faulty functioning. Inspections should take place at the end of each construction job. Ensure that you repair them immediately if there is any damage. This will avoid any last minute hassle

Maintenance of equipment's

i. Maintenance of bar bending machine

- Check worn out part
- Changing deformed part
- Greasing rotating parts
- Operating frequently
- Regular Lubrication



Steps in cleaning tools

1. Clean your **tools**. Cleaning the **tools** regularly is essential to their proper functioning.
2. Protect electrical cords. Airlines and electrical cords are prone to heavy damage since they are generally in the way of construction vehicles, and foot traffic.
3. Lubricate **tools**. Lubricate tools to perform the function effectively using their lubrication schedule
4. Inspect **tools** regularly. It is a good habit to inspect tools after completing of work
5. Store **tools** with care- finally tools kept at hand and stored in the order used.

Storing Plant, tools and equipment

There are some principles for deciding best locations for tools and equipment storing. Jigs, tools and dies differ from materials, equipment, machinery and parts in that they must be put back after each use. Some of the principles for jigs, tools and dies also apply to parts, equipment, and machinery.

These are:

- Locate items in the workplace according to their frequency of use. Place frequently used items near the place of use. Store infrequently used items away from the place of use.
- Store items together if they are used together, and store them in sequence in which they are used.

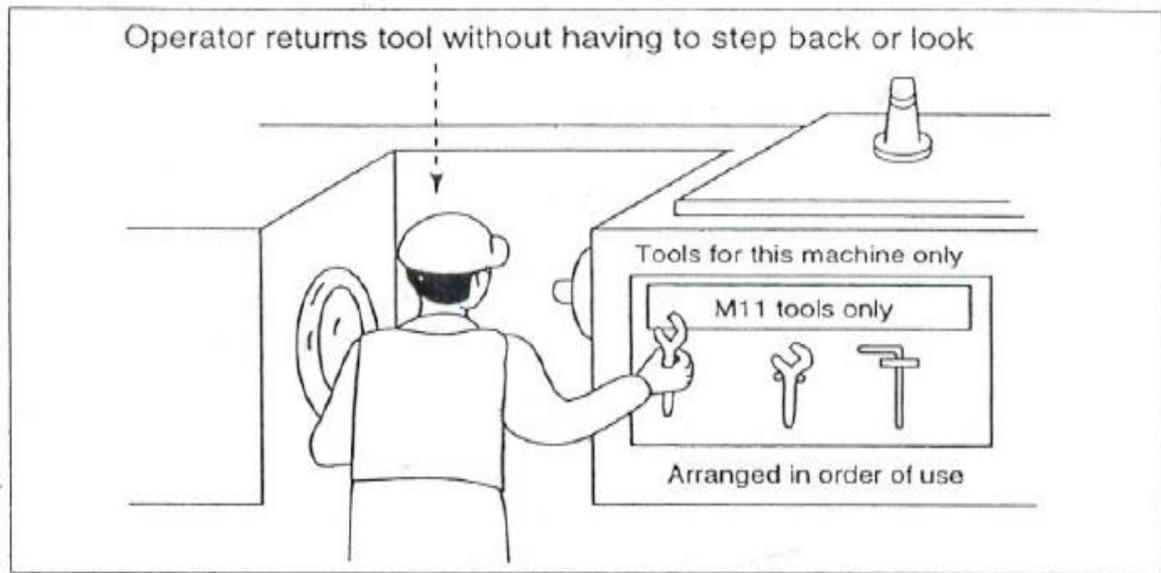


Fig.1 tools kept at hand and stored in the order used.

- Device a “just let go” arrangement for tools. This approach involves suspending tools from a retractable cord just within reach so that they will automatically go back in to their correct storage position when released.
- Make storage places larger than the items stored there so that they are physically easy to remove and put back.
- Eliminate the variety of jigs, tools and dies needed by creating a few jigs, tools and dies that serve multiple functions.
- Store tools according to function or product. Function-based storage means storing tools together when they have similar functions. This works best for job-shop production. Product-based storage means storing tools together when they are used on the same product. This works best for repetitive production.

There are principles helpful in deciding the best locations for parts, equipments, and machinery, as well as tools by removing motion wastes. Motion wastes are unnecessary movements created when people move their trunks, feet, arms, and hands more than needed to perform a given operation. These wastes lead to waste of time, energy and effort. These motion wastes can be minimized by locating parts, equipment, and machinery in the best locations possible. More important than removing motion wastes is asking why it occurs. By asking ‘why’ we can find the methods of manufacturing that work and approach the zero-waste mark. Eliminating the



unnecessary motions from existing operations is called *Motion improvement*. And finding ways to eliminate the whole operations to remove the wastes is called *Radical improvement*.

➤ **Storing of tools**

How to Prepare and Store Tools

1. To keep tools tidy, it should be cleaned after use and wiped down with a rag or towel to be sure that they are free of dirt, grease and debris.
2. After cleaning, damage or defects should be checked. If the tool cannot be repaired, it should be thrown to away.
3. Any soil and dirt should be scraped away from the metal surfaces with an approved solution. Before placing in storage it should be dried with a towel or rag.
4. The metal parts of the tools should be coated with a lubricant protector spray.
5. Tools is does not directly stored on the ground both small hand and power tools should be Placed on shelving.
6. Short-handled tools should be stored in a plastic bin or box. All surfaces of Power tools should be cleaned and completely dry before storage and Spraying lubricants



Fig 2 Storing handtools



Self-Check 1	Multiple Choice
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Instruction: Select the best answer and encircle the letter

1. What is the advantage of maintaining construction tools and equipment?
A/ Increase the service life of the equipment
B/ The performance of the equipment
C/ Decrease the price of the equipment
D/ A & B are correct
2. Why we maintain construction tools and equipment?
.A/ Because it make tools and equipment good performance
B/ Because tools and equipment suffer a lot of wear and tear
C/ Because working with broken tools and equipment lead to injure
D/ All of the above
3. Cleaning the tools regularly is not essential to their proper functioning.



A/True

B/False

C/ sometimes it is true

D/ All of the above

4. Cleaning tools after use and wiped down with a rag or towel is

A/ The first steps

B/ The second steps

C/The last steps

D/ None of the above

Note: Satisfactory rating - 2 points Unsatisfactory - below 2 points
You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____



Operation Sheet- 1	Storing Hand & power Tools
<p>PROCEDURE for Storing Hand Tools</p> <p>Step 1 Clean and wiped down with a rag or cloth to be sure that they are free of dirt, grease and debris</p> <p>Step 2. Inspect tools after completing of cleaning for maintaining any damage or defects</p> <p>Step 3. Maintain any damaged or defected tools.</p> <p>Step 4. Report for concerned body if the defect is beyond your ability.</p> <p>Step 5. Lubricant the metal parts of the tools with a lubricant oil.</p> <p>Step 6. Use shelf to store both small hand and power tools.</p> <p>Step 6. Store short-handled tools in a plastic bin or box.</p> <p>Step 7 Store materials and tools close and in front.</p> <p>Step 8 Arrange materials and tools in the order of their use.</p> <p>Step 9 Make materials and parts easy to pick up.</p>	



LAP Test	Practical Demonstration
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Name: _____ Date: _____

Time started: _____ Time finished: _____

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

Task 1: Storing Hand & power Tools



List of Reference Materials

- 1. Ethiopian Kaizen Manual (2011)

