Making Cement Bricks

A Basic Guide for Namibian Learners



Personal Details

Name : _____

Grade : _____

INTRODUCTION _____ 2
MATERIALS NEEDED _____ 2
TOOLS NEEDED (MANUAL ONLY) _____ 2
SKILLS YOU WILL LEARN _____ 2
DO'S AND DON'TS _____ 3
STEPS TO MAKE CEMENT BRICKS _____ 3
CONCLUSION _____ 4
MEMORY QUIZ – TEST YOUR KNOWLEDGE _____ 4

Introduction

Cement brick making is a simple and valuable skill that helps build strong and durable structures. In this booklet, you will learn how to make cement bricks using manual tools and easy-to-find materials.

Materials Needed

- Cement
- Sand (sifted or unsifted)
- Gravel (small stones if working with sifted sand)
- Water

Tools Needed (Manual Only)

- Shovel (for mixing materials)
- Metal or Wooden mold (to shape the bricks)
- Bucket (to carry water)
- Trowel or wooden stick (for smoothing)
- Drying area (a flat, shaded place)
- Cement brick mould

Skills You Will Learn

- Mixing cement, sand, and gravel correctly
- Shaping bricks using molds
- Proper curing of bricks for durability
- Handling cement safely

Do's and Don'ts

Do's:

✓ Use the correct ratio of cement, sand, and gravel[1] (1:2:4 is common). – alternatively, if unsifted sand is used, the building ratio can vary between 1:3 to 1 :6 depending on the strength of the brick required. ✓ Mix the ingredients thoroughly before adding water. ✓ Let the bricks cure properly by keeping them moist for at least 7 days. ✓ Wear gloves and avoid direct contact with cement. ✓ Work in a well-ventilated area.

Don'ts:

✗ don't use sand that is not clean - contains mud or plant matter. ✗ Don't use too much or too little water; the mixture should be thick and firm. ✗ Don't dry cement bricks in direct sunlight too soon; they may crack. ✗ Don't forget to remove air pockets by tapping the mold gently. ✗ Don't handle fresh bricks roughly; they need time to set. ✗ Don't breathe in cement dust; use a damp cloth over your nose if needed.

Steps to Make Cement Bricks

1. **Prepare the Materials**
   - Measure 1 part cement, 2 parts sand, and 4 parts gravel.
2. **Mix the Dry Ingredients**
   - Use a shovel to mix the cement, sand, and gravel until well blended.
3. **Add Water Gradually**
   - Pour small amounts of water and mix until the consistency is like thick mud.
4. **Fill the Molds**
   - Place the mixture into the mold.
   - Press firmly to remove air pockets and smooth the surface.
5. **Remove the Mold**
   - Carefully lift the mold, leaving the brick behind.
   - Repeat the process to make more bricks.
6. **Cure the Bricks**
   - Keep the bricks in a shaded area and sprinkle with water daily.
   - Let them cure for at least 7 days for maximum strength.
7. **Test the Bricks**
   - Tap a cured brick; it should sound solid and strong.
   - Drop from a small height; a good brick will not break easily.

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[1] The use of gravel has a direct impact on the hardness of the brick.

Conclusion: Now that you know how to make cement bricks, try making your own! Cement bricks are strong and useful for building many things. Keep practicing and have fun learning this valuable skill!

Memory Quiz – test your knowledge

1. What is the main binding material in cement bricks?

- A) Sand
- B) Cement
- C) Gravel
- D) Water

2. Why is gravel added to the mixture?

- A) To make the bricks heavier
- B) To add strength and durability
- C) To make the bricks softer
- D) To absorb more water

3. How long should cement bricks cure before use?

- A) 1 day
- B) 3 days
- C) 7 days or more
- D) 1 month

4. What happens if too much water is added to the mixture?

- A) The bricks will be too weak
- B) The bricks will dry faster
- C) The bricks will be stronger
- D) The bricks will become waterproof

5. Why should bricks not dry in direct sunlight immediately?

- A) It makes them change color
- B) It causes them to crack
- C) It makes them heavier
- D) It makes them too hard
