

Lesson Plan 35: Latrine Slab Testing**30 minutes total****Lesson Description**

This is an optional practical lesson. Participants test the strength of the latrine slabs they have previously constructed. Instructions are given for concrete slabs, and wood or bamboo slabs.

Learning Outcomes

At the end of this session participants will be able to:

1. Demonstrate how to test the strength of a latrine slab.

Scheduling this Lesson in the Agenda

The Lesson Plan: Concrete Slab Construction should be delivered before this lesson.

This lesson should be delivered near the end of the workshop. This will give concrete slabs as much time as possible to cure and reduce the risk of them cracking or breaking.

Materials

- Slabs constructed earlier in the workshop
- 4 bricks, concrete blocks or pieces of wood

Preparation

- Review topic in the Latrine Construction Manual
- Optional: Write the learning outcomes on flipchart paper

Introduction**5 minute**

1. Ask the participants to show with their full bodies and voice how excited they are about testing the strength of their slabs.
2. Present the lesson description or learning outcomes.

Test the Slabs**15 minutes****Reinforced Concrete Slabs:**

1. Explain that every slab should be tested after a minimum of 7 days of curing to ensure that it is properly constructed and safe to use. At 3 days the slab has only gained half the strength as it would after 7 days. Concrete has gained its full strength after 28 days.



Note: For this activity, there may be cracked or broken slabs since they have not cured for at least 7 days. If participants want to keep their slabs for the future, then tell them to wait for a least 7 days before moving and testing the slabs.

2. Demonstrate how to support a slab on 4 long pieces of wood that are the same length as the sides of the slab. You can also use longer pieces and arrange them in a star format.



Note: Do not place 4 blocks at the corners (like the concrete dome slab) since this will increase the chances of the slab breaking! Explain that slabs are designed to be supported on all 4 sides. When supported on all 4 sides the most likely failure mechanism is through bending. Whereas when supported on 4 corners the slab is very likely to shear, especially if there is just a small surface contact between the slab and the support.

3. Have 4 people stand in a row across the slab. Move the line of people 90° and stand across the slab in the new direction.
4. Inspect the slab. If the slab does not break and no cracking appears, then it has passed the test and is safe to use.
5. Ask the groups to test their slabs.

Concrete Dome Slabs:

1. Explain that every slab should be tested after a minimum of 7 days of curing to ensure that it is properly constructed and safe to use. At 3 days the slab has only gained half the strength as it would after 7 days. Concrete has gained its full strength after 28 days.



Note: For this activity, there may be cracked or broken slabs since they have not cured for at least 7 days. If participants want to keep their slabs for the future, then tell them to wait for a least 7 days before moving and testing the slabs. Demonstrate how to support a slab on 4 blocks placed diagonally at the edge of the slab.

2. Have 6 people stand in a row across the slab. Move the line of people 90° and stand across the slab in the new direction.
3. Inspect the slab. If the slab does not break and no cracking appears, then it has passed the test and is safe to use.
4. Ask the groups to test their slabs.

SanPlat:

1. Explain that every SanPlat should be tested after a minimum of 7 days of curing to ensure that it is properly constructed. There is not a safety risk of people falling into a latrine pit since SanPlats are meant to be placed on an existing slab. At 3 days the slab has only gained half the strength as it would after 7 days. Concrete has gained its full strength after 28 days.



Note: For this activity, there may be cracked or broken SanPlats since they have not cured for at least 7 days. If participants want to keep their SanPlats for the future, then tell them to wait for a least 7 days before moving and testing the SanPlats.

2. Place the SanPlat directly on the floor. It does not need to be supported like the other concrete slabs since it will be placed directly onto an existing latrine slab.
3. Have 1 person stand over the drop hole of the SanPlat.
4. Inspect the slab. If the SanPlat does not break and no cracking appears, then it has passed the test and is safe to use.
5. Ask the groups to test their SanPlats.

Wood or Bamboo Slabs:

1. Explain that every slab should be tested to ensure that it is properly constructed and safe to use.



Note: When testing a wooden or bamboo slab, there is no need to apply clay as this does not provide any additional strength.

2. Demonstrate how to test the slab. Place the slab on blocks directly at the location where the support beams are.
3. Have at least 4 people to stand on the centre line. Listen for any cracking sounds or excessive creaking sounds. Look for any noticeable bending.
4. Inspect the slab. If no cracking or noticeable bending appears and there are not any noticeable sounds, then the slab has passed the test and is safe to use.

Review**10 minutes**

1. Discuss the results of the slab testing as a large group.
2. Ask the participants "What have you learned from the successes or failures of the slab testing?"

Reflections on Lesson