Water Infiltration Test – A Basic Guide

This water infiltration test is a simple method to measure the ability of your soils to take in water. It can give you a basic indication of compaction, porosity and drainage properties of your soils.

Infiltration rate is influenced by several properties such as pore size/space, surface conditions (drought, flood, irrigation), cultivation type, compaction and soil type.

The longer the time taken for water to infiltrate the more issues you likely have with properties such as compaction or poor aeration.

**What does a basic water infiltration test involve?**
The test involves measuring the length of time it takes for 25mm of water to soak into your soil.

The test is best done when your soil conditions are as close to normal as possible. Avoid doing it during a drought or directly after a rain or irrigation event.

**What Tools Do You Need**

- 150mm pipe ring (150mm wide and 150mm long)
- Hammer
- Block of wood
- 1 litre water or more
- Timer
- Clingfilm
Infiltration Test

Step 1: Site Selection

When picking where to carry out your infiltration test, ensure you avoid areas around gate ways, water troughs, irrigation hydrants or pivot wheel tracks and also stock camps and fence lines. The area should be a good representation of the paddock from a grazing and management perspective.

Step 2: Set Up

Mark your pipe ring at 100mm, inside & out (soil line) and 125mm (water line).

Take your pipe ring and bang it into the ground using your hammer until your marked soil line is level with the top of the ground. Using your block of wood across the top of the ring can help. It may take a while to bang it in all the way.
**Step 3: Adding Water**

Line your pipe ring with cling film and fill it with water until the water reaches the 25mm water line. Push the cling film down in the edges so the whole inside of the ring is covered ensuring a full 25mm of water across the whole surface.

You do this so that in the next step, you can remove the film and start the timer at the same time after all water has been added. The water won’t have started soaking into the soil before you have finished filling with the correct level of water and start the timer.

![Image of a pipe ring with water and cling film](image1)

**Step 4: Timing**

Get your timing device ready. Carefully remove the clingfilm from the pipe ring and press start on your timer as soon as the water hits the soil surface.

Time how long it takes for all the water to disappear/infiltrate into the soil and write this down.

![Image of a phone with a timer next to a pipe ring](image2)

Repeat steps 3 & 4 for a 2nd and 3rd time to test the soil once it is already wet and then saturated.