

SOIL TEXTURE

THE MANIPULATIVE TEST

Soil Texture

Texture is the estimate of the amounts of sand, silt and clay in a soil.

The mineral part of soil (as opposed to the organic matter in soil) is the result of the breakdown of rock particles into sand and silt.

The size of these particles determine the texture class of the soil. We often describe soils depending on the texture class they come from.

Sands are the coarsest or lightest of soils. Sand is sometimes described as light, fine or coarse. Sandy soils feel gritty.

Loams have a fairly even mix of sand, silt and clay. Their feel can be described as smooth or silky or perhaps greasy if there is plenty of organic matter present.

Clays comprise more than 35% clay particles and are referred to as fine textured or heavy soils. Clays can be described as light, medium or heavy. Clay soils have a plastic feel when molded.

Naming Soils – when soils are named, the dominant texture class comes last in the name. For example “sandy loam” is a loam with a high sand content.

Sand	The largest soil particles	0.02 – 2mm
Silt	Smaller particles of the parent rock	0.002 – 0.02mm
Clay	The smallest soil particles that are shaped like flat sheets	Less than 0.002mm

From: Catchment Connections #4 Taking Action



The Test

The manipulative test gives you a better idea of the soil structure.

This test must be performed exactly in the sequence described below because to be successful, each step requires progressively more silt and more clay.

1. Take a handful of soil and wet it so that it begins to stick together, but without sticking to your hand.
2. Roll the soil sample in to a ball about 3cm in diameter – size of a golf ball.
3. Put the ball down...
If it falls apart it is **sand**.
If it sticks together, go on to the next step.
4. Roll the ball into a sausage shape 6-7 cm long...
If it does not remain in this form, it is **loamy sand**.
If it remains in this shape go on to the next step.
5. Continue to roll the sausage until it reaches 15-16 cm long...
If it does not remain in this shape, it is **sandy loam**.
If it remains in this shape, go on to the next step.
6. Try to bend the sausage into a half circle...
If you cannot, it is **loam**.
If you can, go on to the next step.
7. Continue to bend the sausage to form a full circle...
If you cannot, it is heavy loam.
If you can with slight cracks in the sausage, it is **light clay**.
8. If you can with no cracks in the sausage, it is **clay**.



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