

The Glass Jar Soil Test



Dirty or turbid water

Clay 10% Approximate

Silt 30% Approximate

Sand 60% Approximate

Follow these steps:

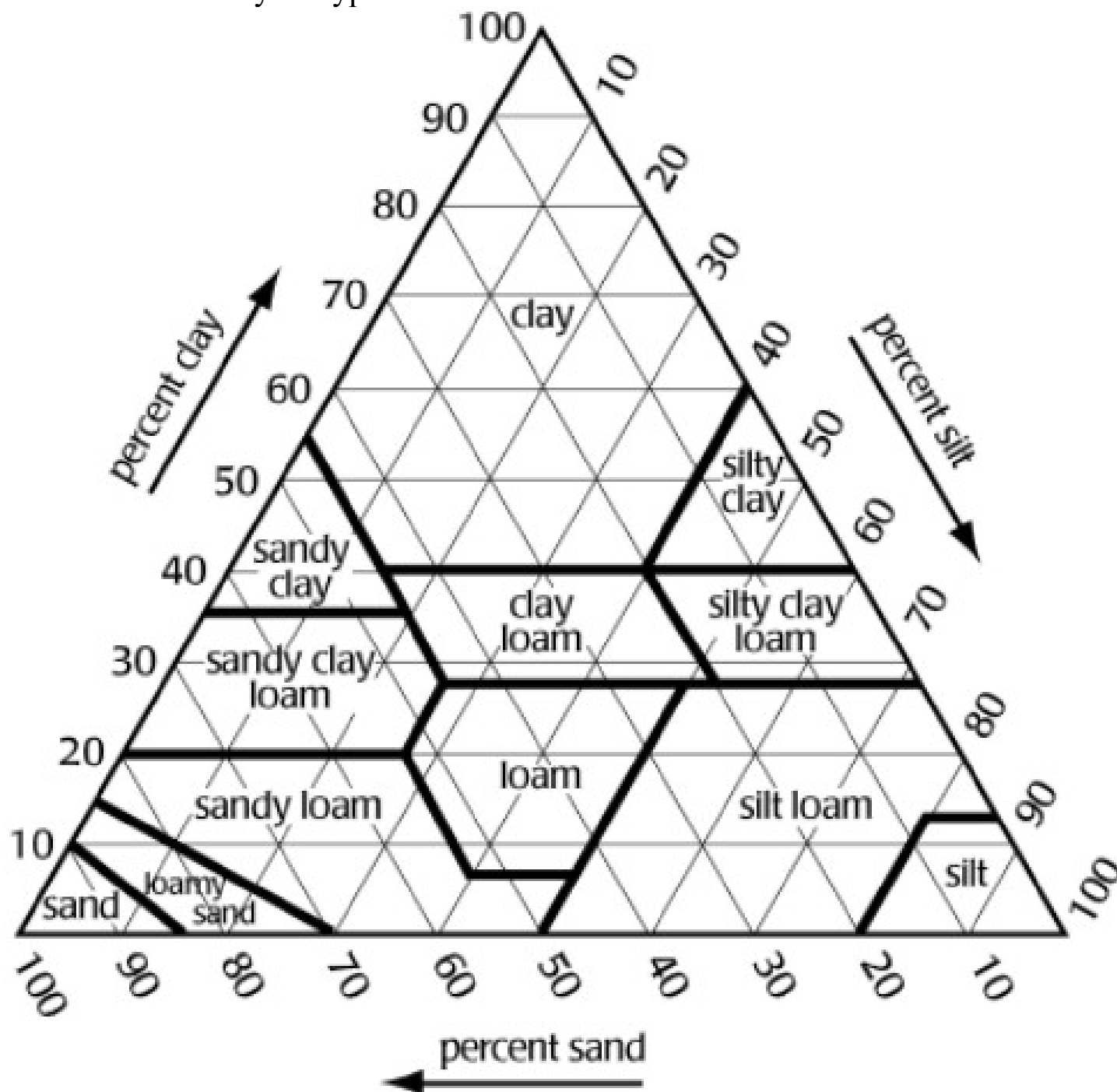
- 1 Add soil to the jar – fill it about 50%
- 2 Add a few drops of detergent and fill jar with water
- 3 Replace lid and shake vigorously for 3 minutes
- 4 Put down on flat surface and after about 1 – 2 minutes mark sand
- 5 After 1 hour mark silt
- 6 After 24 hours mark clay
- 7 Use the soil triangle to help determine soil type

How to use the soil triangle

After completing the glass jar soil test, take a look at the percentages of clay, silt and sand and use these percentages to carry out the following steps using the soil triangle below;

1. Trace the line for the % clay
2. Trace the line for the %silt
3. Trace the line for the % sand

The intersection is your type of soil.



Bolus Test – Should support the glass jar test results



Add small amounts of water to a small handful of soil, working to form a bolus



The bolus is at the appropriate moisture content when the bolus surface just glistens

Squeeze between thumb and forefinger to form a ribbon



7 cm long
(clay soil)



1 cm long
(sand soil)

SAND

Coherence nil to very slight, cannot be moulded; single grains adhere to fingers; nil to slight turbidity when puddled.

LOAMY SAND

Will form a ribbon to 5 mm. Slight coherence; definite turbidity when puddled in palm of hand

CLAYEY SAND

Will form a ribbon 5 to 15 mm. Slight coherence, sticky when wet, many sand grains stick to fingers, discolours fingers with clay stain.

SANDY LOAM

Will form a ribbon of 15 to 20 mm. Bolus just coherent and very sandy to touch; sand grains visible.

LIGHT SANDY CLAY LOAM

Will form a ribbon of 20 to 25 mm. Bolus moderately coherent but sandy to touch; sand grains easily visible.

LOAM

Will form a ribbon of about 25 mm. Bolus coherent and spongy; smooth feel and no obvious sandiness; may be somewhat greasy, as organic matter is usually present.

SANDY CLAY LOAM

Will form a ribbon 25 to 40 mm. Bolus strongly coherent, sandy to touch; sand grains visible.

CLAY LOAM

Will form a ribbon 40 to 50 mm. Bolus strongly coherent and plastic; smooth to manipulate.

SANDY CLAY and LIGHT CLAY

Will form a ribbon 50 to 75 mm. Plastic bolus, slight resistance to shearing. sandy clay - can see, feel and hear sand grains. light clay - smooth to touch.

LIGHT MEDIUM CLAY

Will form a ribbon 75 to 85 mm. Plastic bolus smooth to touch; moderate resistance to shearing between thumb and forefinger.

MEDIUM CLAY

Will form a ribbon 85 to 100 mm. Smooth plastic bolus: handles like plasticine and can be moulded into rods, moderate resistance to ribboning.

HEAVY CLAY

Will easily form a ribbon over 100 mm. Smooth plastic bolus; handles like stiff plasticine; can be moulded into rods without fracture; has firm resistance to ribboning shear.

Each soil texture is classified within a ribbon length range (for example, sandy clay loam ribbon length is 25 to 40 mm long). Therefore, once a consistent ribbon length is being produced, you can be reasonably sure that the correct soil texture has been identified.