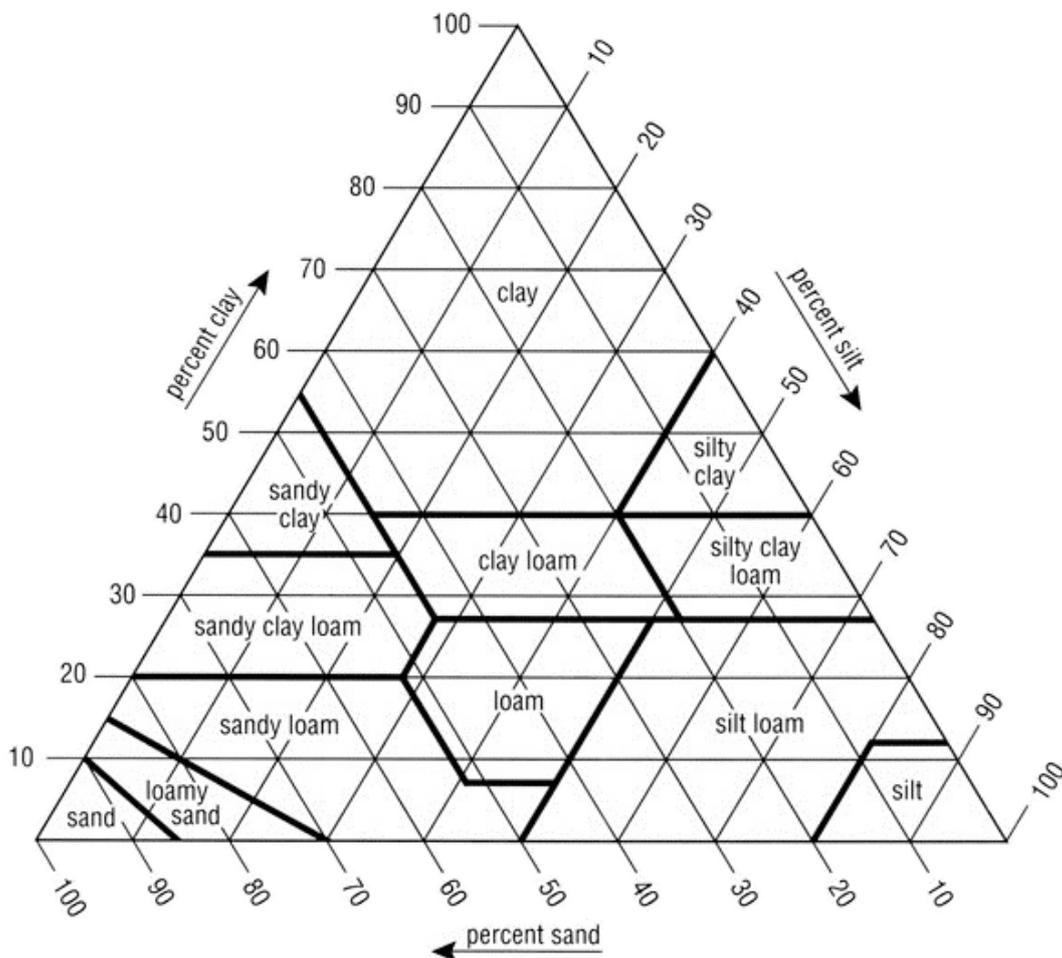


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How to use the Soil Texture Triangle

Soil texture depends on its composition and the relative portions of clay, sand, and silt. In sedimentology, clay is defined as particles of earth between $1\mu\text{m}$ and $3.9\mu\text{m}$ in diameter. (Not to be confused with the chemical definition of clay, which is a mixture of hydrous aluminium phyllosilicate particles and water.) Silt is defined as particles between $3.9\mu\text{m}$ and $62.5\mu\text{m}$ in diameter, while sand is particles between $62.5\mu\text{m}$ and 2mm ; in diameter.

The USDA classifies soil types according to a soil texture triangle chart which gives names to various combinations of clay, sand, and silt. The chart can be a little confusing at first glance, however, it makes sense after seeing a few examples.

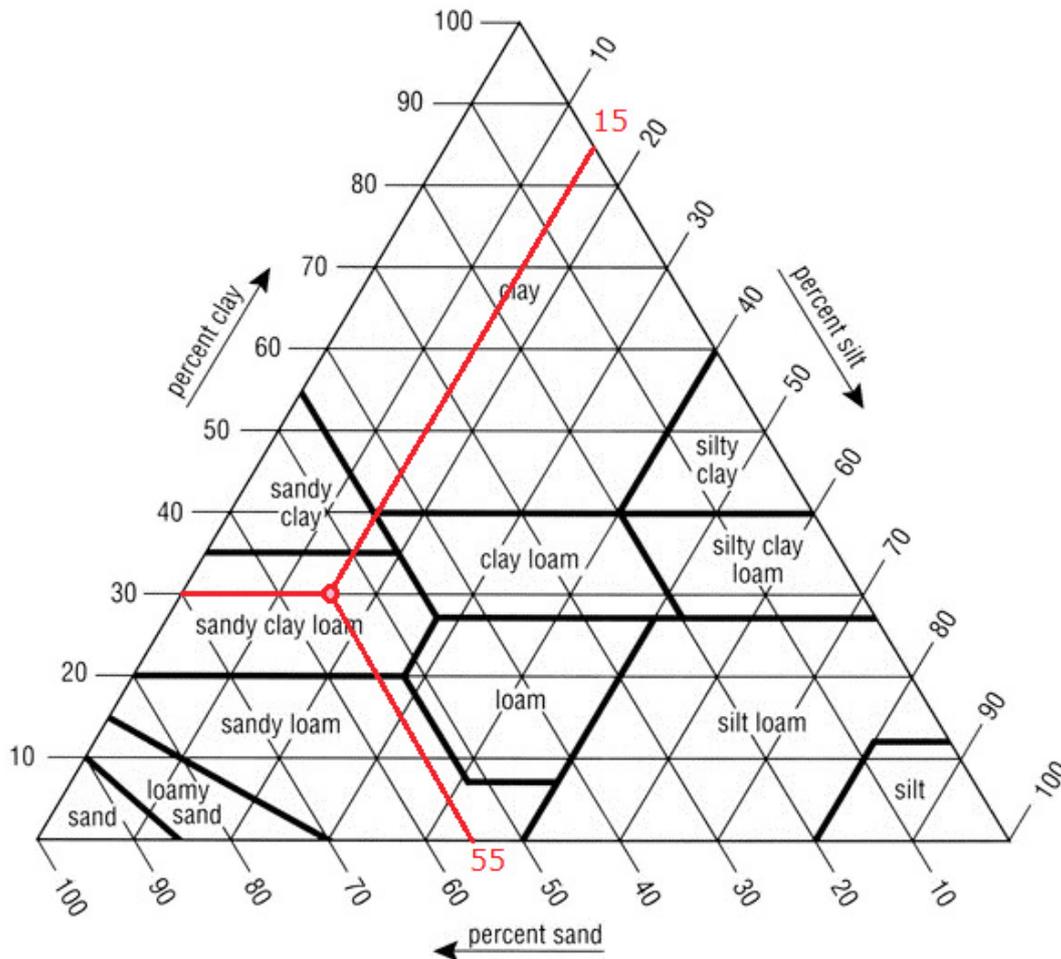


First, look at the orientation of the percentages on the sides of the triangle. The numbers are arranged symmetrically around the perimeter. On the left the numbers correspond to the percentage of clay, and on the right the numbers correspond to the percentage of silt. At the bottom of the triangle chart are the percentages of sand.

To classify a soil sample, you find the intersection of the three lines that correspond the three proportions. On the chart, all of the percents will add up to 100%.

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Example: Classify a soil sample that is 30% clay, 15% silt, and 55% sand. First, locate 30% on the clay axis, and draw a line horizontally from left to right. Next, locate 15% on the silt axis, and draw a line going down diagonally to the left. Finally, locate 55% on the sand axis, and draw a line going up diagonally to the left. The intersection is in a region called Sandy Clay Loam. See figure below. (Truthfully, you only need to make two lines.)



See table below as a guide to the **Field Capacity (FC)** and **Permanent Wilting Point (PWP)** values for different soil types (as a percentage of volumetric water content).

Texture	FC (v%)	PWP (v%)
Sand	10	5
Loamy sand	12	5
Sandy loam	18	8
Sandy clay loam	27	17
Loam	28	14
Sandy clay	36	25
Silt loam	31	11
Silt	30	6
Clay loam	36	22
Silty clay loam	38	22
Silty clay	41	27
Clay	42	30

- Saxton and Rawls (2006)