

SOILVISION 10 Help Manual - 12/16/2019

Grainsize Estimation and Classification



Minimum [license](#) required to complete this tutorial: SVSOILS The general steps

required for the estimation process are:

- a. Create a project for the user soil,
- b. Create new soil,
- c. Enter and Fit existing grain-size information,
- d. Classify the soil

a. Create a Project for the User Soil

The following steps are required to create a new project.

1. Open the *SOILVISION Manager* dialog,
2. In LEARNING MODE, select the SVSOILS product icon,
3. Click on **Open Database** button, the Materials Manager dialog will automatically open,
4. Select *Project > Add One Project* from the menu,
5. Use the **Browse For Folder** dialog to choose a location that will be used to store all soils-related files,
6. Enter "**Tutorial Project**" for Project Name,
7. Enter the *Company name*,
8. Enter the current *date* and *address*,
9. Click *OK* to close New Project dialog.

b. Create New Material

The following steps are required to create a new soil.

1. Select Tutorial Project from the project list,
2. Select *Material > New Material* to open New Material dialog,
3. Enter "**Silt**" for soil name,
4. Select **USCS Classification** type,
5. Select **Metric** Unit type,
6. Enter **2.65** Specific Gravity value,
7. Click *OK* to close New Soil Sample dialog, the new material dialog with automatically open.

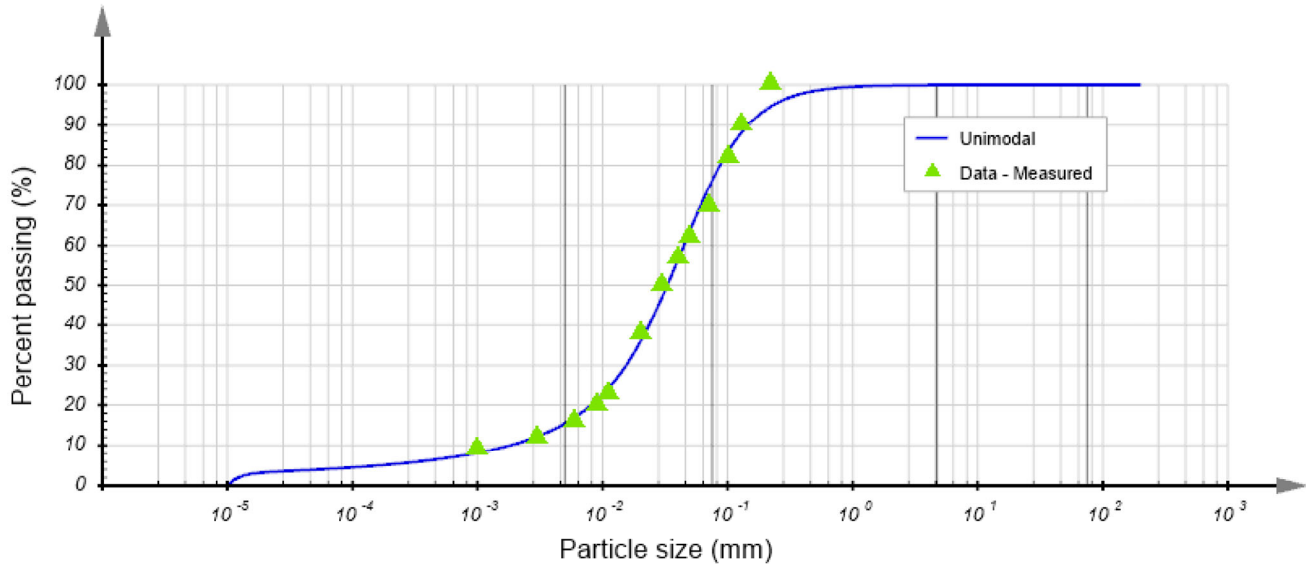
c. Enter and Fit Existing Grain-Size Information

Most methods of estimating the SWCC require grain-size information either in the form of a sieve analysis or represented as %clay, %silt, and %sand values. In this case, it is assumed that the user has measured sieve analysis as specified below. Measured data indicates that the user has a measured sieve analysis. The material has a single dominant particle size and as a result a unimodal equation can be used to fit the data plots. Follow the steps below to enter grain-size information:

1. Click on **Grain-size** button,
2. Select **Measured** Category and **Unimodal** Calculation Method,
3. Enter grain-size data (copy data in table below and select paste in Grain Size Data tab),
4. Click **Apply Fit** at the bottom of the dialog,
5. Select Graph button at the bottom of the dialog to view graph. Your graph should look like the Grain-size graph below,
6. Close the graph window, then click OK to close dialog.

Particle Diameter (mm)	Percent Passing (%)
0.22	100
0.13	90
0.1	82
0.07	70
0.05	62
0.04	57
0.03	50
0.02	38
0.011	23
0.009	20
0.006	16

0.003	12
0.001	9



CLAY	SILT	SAND			GRAVEL	
		fine	med.	co.	fine	coarse

d. Classify Soil

SVSOILS automatically classifies the soil when you click on the Apply fit button in the Grain-size dialog. The USCS method also requires the input of Liquid Limit and Plastic Limit.

1. Select *Material > Classification* to open Classification dialog
2. Enter Liquid Limit value of **24.00%**,
3. Enter Plastic Limit of **17.00%**,
4. Select the **Classify** button at the bottom of the dialog,
5. The texture of the soil is **Silty clay with sand** as shown under the USCS standard,
6. Click *OK* to close dialog.