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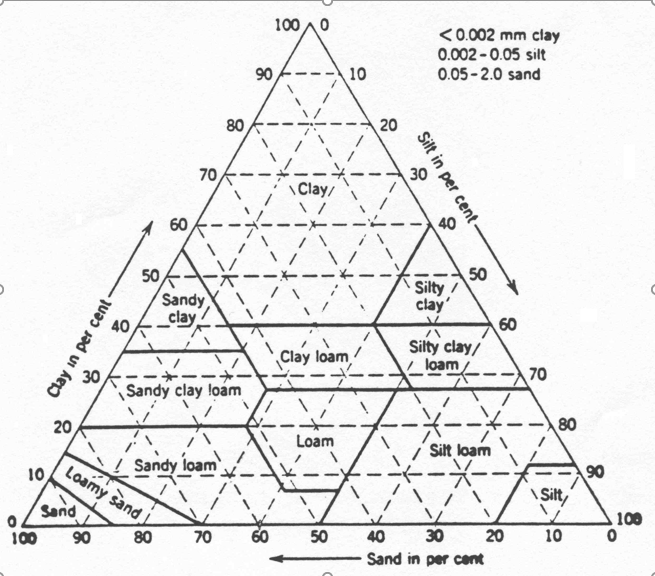
# **Introduction**

This report is prepared for the solutions of the assigned problems in the Homework 1.

# **Question 1**

Table : Sieve Analysis

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sieve Size (mm) | Mass Retained (gr) | Cumulative Mass Retained | Cumulative Retained % | Percent Mass |  |
| 2 | 0 | 0 | 0 | 0 | 16.7 (sand) |
| 1 | 0 | 0 | 0 | 0 |
| 0.5 | 5 | 5 | 4.90 | 4.9 |
| 0.25 | 4 | 9 | 8.82 | 3.9 |
| 0.1 | 8 | 17 | 16.67 | 7.8 |
| 0.05 | 15 | 32 | 31.37 | 14.7 | 44.1 (silt) |
| 0.002 | 30 | 62 | 60.78 | 29.4 |
|  | 40 | 102 | 100.00 | 39.2 | 39.2 (clay) |



According to Figure 1, it is a ***Silty Clay Loam***.

Figure :Textural Chart

# **Question 2**

Moisture Content by mass basis

Bulk mass density

Moisture Content by volume and bulk density

Porosity

# **Question 3**

Matrix potential of a soil with equivalent diameter of 0.0002 mm pores is asked.

Where **=0.073 N/m,** is the density of water 1000 kg/m2 and is radius of the capillary zone 0.0001 mm.

# **Question 4**

# **Question 5**

*Osmotic Potential,*

# **Question 6**

Water potential at -1/3 bar ;

# **Question 7**