Ottawa F-65 Sand Characterization Soil Index Properties Summary

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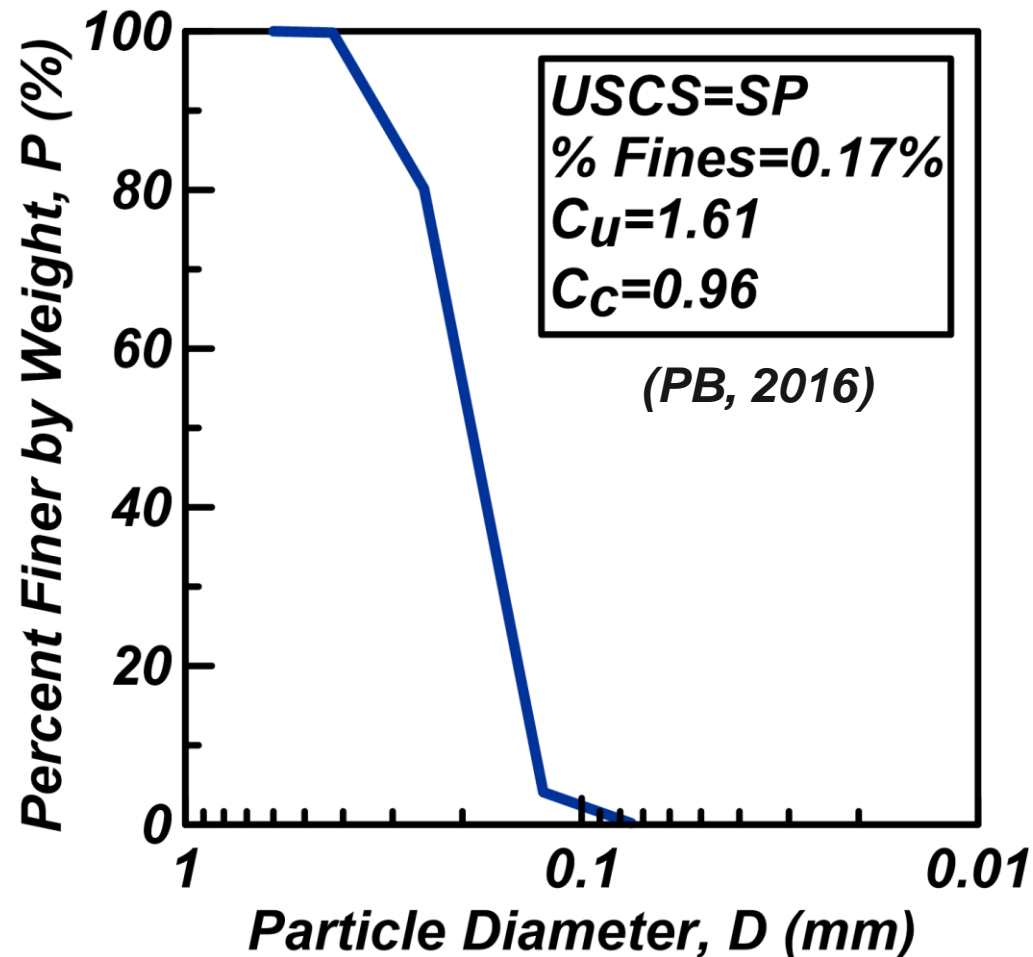
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Content

1. Specific gravity of solids, G_s

- The selected value is:

$$G_s = 2.65$$

- Value obtained using the ASTM D854 – 14 method. The selected values is the average value of 2 measurements.

2. Grain size distributions

USCS=SP
% Fines=0.17%
C_u=1.61
C_c=0.96

(PB, 2016)

Values obtained using the ASTM D422 − 63 method. The selected values are the average value from 2 tests.

3. *Minimum dry density, $\rho_{d\ min}$*

- The selected values is:

$$\rho_{d\ min}=1446\ \text{kg/m}^3$$

- Value obtained using the ASTM D 4254 – 00 method and using the pluviation calibration mold, which has the same dimensions as the DSS confinement rings and bottom cap assembly. The selected value is the average value of 9 measurements.

4. Maximum void ratio, e$_{max}$

- The selected value is:

$$e_{max}=0.83$$

- Value obtained from the selected values of G_s and $\rho_{d\ min}$.

5. Maximum dry density, $\rho_{d\ max}$

- The selected values is:

$$\rho_{d\ max}=1759\ \text{kg/m}^3$$

- Value obtained the JIS A 1224 method, and using a steel mold with the dimensions as required by the JIS standard. The selected value is the average value of 3 measurements.

6. *Minimum void ratio, e$_{min}$*

- The selected values is:

$$e_{min} = 0.51$$

- Value obtained from the selected values of G_s and $\rho_{d\ max}$.

7. Hydraulic conductivity, k

Density descriptor	Dry density ϱ_d	Hydraulic conductivity, k_{at} 20°C
(--)	(kg/m^3)	(cm/s)
Loose specimen	1480	0.022
Dense specimen	1722	0.016

Values obtained using the ASTM D2434-68 constant head permeability test method, and by selecting the tests results from the loosest and densest tested specimens. Each test result is the average value of 9 measurements, which correspond to 3 measurements using three different hydraulic gradients per test.

Questions?

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