

POROSITY CALCULATION OF COMPACTED SALT SAMPLE USING VACUUM SEALING METHOD

Scope: To determine the bulk specific gravity & porosity of specimen of compacted salt sample

Apparatus used: Corelok InstronTek, Inc

Test Specimen:

Sample ID: 175_13 (Oven dried)

Sample Type: Salt, End Piece (Bottom)

Shape: Cylindrical

**Figure 1: Salt Sample 175_13
(Bottom)**



Calculation:

Sample (Oven dried) weight in air, $W_1 = 232.260 \text{ g}$

Membrane (InstronTek provided) weight, $W_p = 7.710 \text{ g}$

Sample weight in water (Submerged), $W_2 = 120.410 \text{ g}$

Density of Water (g/cm^3) for 20.9°C (recorded) 0.998

Bulk Specific Gravity of the sample, $G_b = 2.109$

Using CoreGravity (Software)

So, bulk density, $D_b = 2.105 \text{ g/cm}^3$

Sample volume, $V = 110.349 \text{ cm}^3$



Figure 2: Sample identification

Maximum Specific gravity, $G_m = [W_1 / (W_1 - W_3)] \times \rho_s = 2.157$

(Based on calculation for Sample 90_05, where W_3 = sample weight in Silica oil- pores filled with same fluid)

Hence we will assume, $G_m = 2.157$

% Porosity = $(1 - G_b / G_m) \times 100 = 2.23\%$

Results:

Therefore the sample volume = 110.349 cm^3

Bulk Specific Gravity, $G_b = 2.109$

And calculated Porosity = 2.23%