

UNIT WEIGHTS, VOID RATIO, POROSITY, AND DEGREE OF SATURATION (Volumetric Method)

Date _____

PROJECT _____
BORING NO. _____

Water Content

Sample or specimen No.							
Tare No.							
Weight in Grams	Tare plus wet soil						
	Tare plus dry soil						
	Water w_w						
	Tare						
	Dry Soil W_s						
Water content		W	%	%	%	%	%

Weight-Volume Relations

Sample or specimen No.							
Cylinder No.							
Centi-meters	Height of cylinder	H					
	Inside diameter of cylinder	D					
Weight in Grams	Soil and container						
	Container						
	Wet soil	W					
	Dry soil	W_s					
Specific gravity of soil		G_s					
VOLUME IN CC	Wet soil (volume of cylinder)	V					
	Dry soil = $\frac{W}{G_s S}$	V_s					
LB PER CU FT	Wet unit wt = $(W/V) 62.4$	Y_m					
	Dry unit wt = $(W/V) 62.4$ S	Y_d					
Void ratio = $(V - V_s) / V_s$		e					
Porosity, % = $[(V - V_s) / V] \times 100$		n					
DEGREE OF SATURATION, % = $[\frac{V_w}{(V - V_s)}] \times 100$		S	%	%	%	%	%

Volume of cylinder, $V = \frac{\pi \cdot D^2 \cdot H}{4}$

Volume of water = $V = \frac{W}{W \cdot \text{specific gravity of water}^*}$

*Specific gravity of water in metric system = 1 (approx)

Remarks _____

Technician _____ Computed By _____ Checked By _____