

**DETERMINATION OF RELATIVE DENSITY**  
**ASTM D 2049-69T**

Client: \_\_\_\_\_ Date Tested : \_\_\_\_\_  
 Project: \_\_\_\_\_ Mould Diameter : \_\_\_\_\_ cm  
 Mould Height : \_\_\_\_\_ cm  
 Plate Thickness : \_\_\_\_\_ cm  
 Sample Ref. : \_\_\_\_\_ Volume of Mould : \_\_\_\_\_ cm<sup>3</sup>

**Minimum Density Determination (0% Relative Density)**

Test Sample No.		1	2
Mass Of Mould ( $m_1$ )	g		
Mass Of Mould + Soil ( $m_2$ )	g		
Mass of Soil ( $m_a = m_2 - m_1$ )	g		
Minimum density of soil, $\rho_a = m_a/V$	g/cm <sup>3</sup>		
Average Minimum Density	g/cm <sup>3</sup>		

**Maximum Density Determination (100% Relative Density)**

Test Sample No.		1			2		
Gauge reading, (initial reading set to 0mm)		Reading 1	Reading 2	Reading 3	Reading 1	Reading 2	Reading 3
	cm						
	Ave.						
Gauge reading + Plate Thickness	cm						
Mass Of Mould ( $m_3$ )	g						
Mass Of Mould + Soil ( $m_4$ )	g						
Mass of Soil ( $m_b = m_4 - m_3$ )	g						
Volume of Soil ( $V_s$ )	cm <sup>3</sup>						
Maximum density of soil, $\rho_b = m_b/V_s$	g/cm <sup>3</sup>						
Average Maximum Density	g/cm <sup>3</sup>						

**Relative Density Compaction**

Test Sample No.		Point 1	Point 2	Point 3	Point 4	Point 5	Point 6
In-Situ Density	g/cm <sup>3</sup>						
Minimum Density of Soil	g/cm <sup>3</sup>						
Maximum Density of Soil	g/cm <sup>3</sup>						
Relative Density, = $\frac{\gamma_{max}(\gamma_d - \gamma_{min})}{\gamma_d(\gamma_{max} - \gamma_{min})} \times 100\%$	%						

Tested by: \_\_\_\_\_

Checked by: \_\_\_\_\_

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Date: \_\_\_\_\_

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Date: \_\_\_\_\_