



## LABORATORIUM MEKANIKA TANAH

### JURUSAN TEKNIK SIPIL

FAKULTAS TEKNIK SIPIL DAN PERENCANAAN

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### PENGUJIAN BERAT VOLUME ASTM D - 2049

Proyek : Tugas Akhir  
 Lokasi : Desa Klangkapan I, Marguluweh, Seyegan, Kabupaten Sleman  
 Dikerjakan : Ronaldo Fajriansyah  
 Tanggal : 22 November 2017  
 Sampel : Tanah Asli

1	No.Pengujian			1	2
2	Diameter Ring (d)	cm		5.05	5.05
3	Tinggi Ring (t)	cm		2.34	2.34
4	Volume Ring (v)	cm <sup>3</sup>		46.87	46.87
5	Berat Ring (w1)	gr		36.26	35.12
6	Berat Ring + Tanah Basah (w2)	gr		107.58	105.93
7	Berat Tanah Basah (w3)	gr		71.32	70.81
8	Berat Volume Tanah	gr/cm <sup>3</sup>		1.52	1.51
9	Berat Volume Tanah Rata-Rata	gr/cm <sup>3</sup>		1.52	

Diketahui Oleh :

( Ir. Akhmad Marzuko, M.T. )

## Perhitungan Pengujian Berat Volume

### 1. Sampel 1

$$\begin{aligned} \gamma &= \frac{W}{V} = \frac{W_2 - W_1}{V} = \frac{W_3}{V} \\ \text{Volume ring} &= \frac{1}{4} \times \pi \times d^2 \times t \\ &= \frac{1}{4} \times 3,14 \times 5,05^2 \times 2,34 \\ &= 46,87 \text{ cm}^3 \\ \text{Berat tanah basah (W3)} &= W_2 - W_1 \\ &= 107,58 - 36,26 \\ &= 71,32 \text{ gram} \\ \text{Berat volume tanah } (\gamma_{\text{Unsat}}) &= \frac{W_3}{V} \\ &= \frac{71,32}{46,87} \\ &= 1,52 \text{ gram/cm}^3 \end{aligned}$$

### 2. Sampel 1

$$\begin{aligned} \gamma &= \frac{W}{V} = \frac{W_2 - W_1}{V} = \frac{W_3}{V} \\ \text{Volume ring} &= \frac{1}{4} \times \pi \times d^2 \times t \\ &= \frac{1}{4} \times 3,14 \times 5,05^2 \times 2,34 \\ &= 46,87 \text{ cm}^3 \\ \text{Berat tanah basah (W3)} &= W_2 - W_1 \\ &= 105,93 - 35,12 \\ &= 70,81 \text{ gram} \\ \text{Berat volume tanah } (\gamma_{\text{Unsat}}) &= \frac{W_3}{V} \\ &= \frac{70,81}{46,87} \\ &= 1,51 \text{ gram/cm}^3 \end{aligned}$$

### 4. Berat Volume Rata-Rata

$$\begin{aligned} \text{Berat Volume Rata-Rata} &= \frac{1,52 + 1,51}{2} \\ &= 1,52 \text{ gram/cm}^3 \end{aligned}$$