



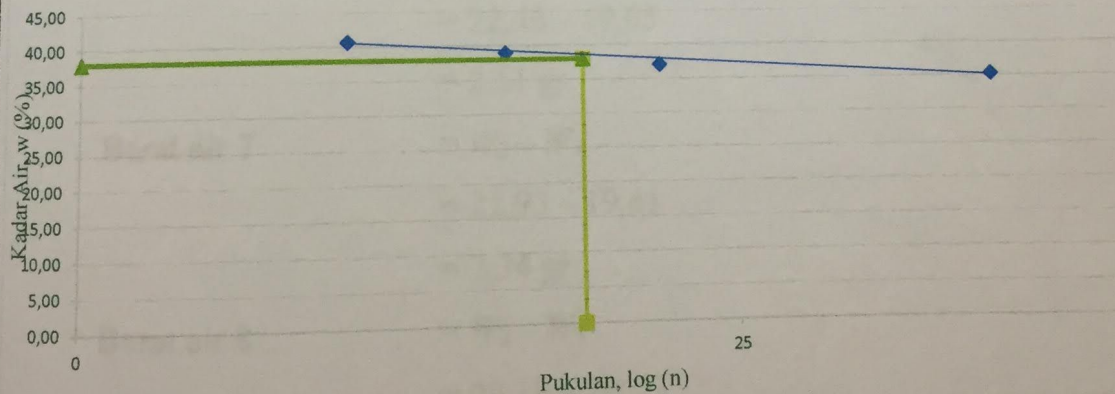
LABORATORIUM MEKANIKA TANAH
JURUSAN TEKNIK SIPIL
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
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PENGUJIAN BATAS CAIR
ASTM D 423 - 66

Proyek : Tugas Akhir
 Lokasi : Desa Klangkapan I, Marguluweh, Seyegan, Kabupaten Sleman
 Dikerjakan : Ronaldo Fajriansyah
 Tanggal : 22 November 2017
 Sampel : Tanah Asli Sampel 2

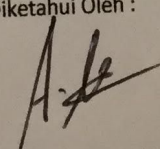
No.		I		II		III		IV		Batas Plastis	
		1	2	3	4	5	6	7	8	9	10
1	No Cawan										
2	Berat Cawan	gr 12,80	13,13	9,30	12,89	12,83	12,73	12,93	13,02	12,85	12,93
3	Berat Cawan + Tanah Basah	gr 21,90	24,28	19,14	23,38	25,77	22,46	21,95	22,13	13,93	14,06
4	Berat Cawan + Tanah Kering	gr 19,29	21,03	16,46	20,36	22,25	19,85	19,61	19,75	13,80	13,92
5	Berat air (3) - (4)	gr 2,61	3,25	2,68	3,02	3,52	2,61	2,34	2,38	0,13	0,14
6	Berat Tanah Kering (4) - (2)	gr 6,49	7,90	7,16	7,47	9,42	7,12	6,68	6,73	0,95	0,99
7	Kadar Air = (5)/(6) x 100 %	% 40,22	41,14	37,43	40,43	37,37	36,66	35,03	35,36	13,68	14,14
8	Kadar Air Rata-Rata	% 40,68		38,93		37,01		35,20		13,91	
9	Jumlah Pukulan, N	10		16		22		35			

GRAFIK PENGUJIAN INDEKS PLASTIS



Batas Cair (LL) = 37,97 %
 Batas Plastis (PL) = 13,91 %
 Indeks Plastis (IP = LL - PL) = 24,06 %

Diketahui Oleh :

( Ir. Akhmad Marzuko, M.T.)

Perhitungan Batas Cair

1. Berat air 1

$$= W_2 - W_3$$

$$= 21,90 - 19,29$$

$$= 2,61 \text{ gr}$$
- Berat air 2

$$= W_2 - W_3$$

$$= 24,28 - 21,03$$

$$= 3,25 \text{ gr}$$
- Berat air 3

$$= W_2 - W_3$$

$$= 19,14 - 16,46$$

$$= 2,68 \text{ gr}$$
- Berat air 4

$$= W_2 - W_3$$

$$= 24,28 - 20,35$$

$$= 3,93 \text{ gr}$$
- Berat air 5

$$= W_2 - W_3$$

$$= 25,77 - 22,25$$

$$= 3,52 \text{ gr}$$
- Berat air 6

$$= W_2 - W_3$$

$$= 22,46 - 19,85$$

$$= 2,61 \text{ gr}$$
- Berat air 7

$$= W_2 - W_3$$

$$= 21,95 - 19,61$$

$$= 2,34 \text{ gr}$$
- Berat air 8

$$= W_2 - W_3$$

$$= 22,13 - 19,75$$

$$= 2,38 \text{ gr}$$

2. Berat tanah kering 1

$$= W_3 - W_1$$

$$= 19,29 - 12,80$$

$$= 6,49 \text{ gr}$$
- Berat tanah kering 2

$$= W_3 - W_1$$

$$= 21,03 - 13,13$$

$$\begin{aligned}
 &= 7,90 \text{ gr} \\
 \text{Berat tanah kering 3} &= W_3 - W_1 \\
 &= 16,46 - 9,30 \\
 &= 7,16 \text{ gr} \\
 \text{Berat tanah kering 4} &= W_3 - W_1 \\
 &= 20,36 - 12,89 \\
 &= 7,47 \text{ gr} \\
 \text{Berat tanah kering 5} &= W_3 - W_1 \\
 &= 22,25 - 12,83 \\
 &= 9,42 \text{ gr} \\
 \text{Berat tanah kering 6} &= W_3 - W_1 \\
 &= 19,85 - 12,73 \\
 &= 7,12 \text{ gr} \\
 \text{Berat tanah kering 7} &= W_3 - W_1 \\
 &= 19,61 - 12,93 \\
 &= 6,68 \text{ gr} \\
 \text{Berat tanah kering 8} &= W_3 - W_1 \\
 &= 19,75 - 13,02 \\
 &= 6,73 \text{ gr}
 \end{aligned}$$

$$\begin{aligned}
 3. \text{ Kadar air 1} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\
 &= \frac{2,61}{6,49} \times 100\% \\
 &= 40,22\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Kadar air 2} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\
 &= \frac{3,25}{7,90} \times 100\% \\
 &= 41,14\%
 \end{aligned}$$

$$\begin{aligned}
 \text{Kadar air 3} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\
 &= \frac{2,68}{7,16} \times 100\% \\
 &= 37,43\%
 \end{aligned}$$

$$\begin{aligned} \text{Kadar air 4} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\ &= \frac{3,02}{7,47} \times 100\% \\ &= 40,43\% \\ \text{Kadar air 5} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\ &= \frac{3,52}{9,42} \times 100\% \\ &= 37,37\% \\ \text{Kadar air 6} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\ &= \frac{2,61}{7,12} \times 100\% \\ &= 36,66\% \\ \text{Kadar air 7} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\ &= \frac{2,34}{6,68} \times 100\% \\ &= 35,03\% \\ \text{Kadar air 8} &= \frac{\text{Berat air}}{\text{Berat tanah kering}} \times 100\% \\ &= \frac{2,38}{6,73} \times 100\% \\ &= 35,36\% \end{aligned}$$