



TEST FOR SPECIFIC GRAVITY AND ABSORPTION-TEST OF FINE AGGREGATE

No. : Date Tested : 3 Januari 2008
Sample : Pasir Tested by : Afifa Cindika
Size : 0,15 – 2,5 mm Checked by : Ir. Madsuri, MT
Source : Garut – Galunggung
Project : Skripsi

A) Weight of Oven-Dry Specimen in Air (gram)		498	499
B) Weight of Pycnometer Filled with Water (gram)		657	658
C) Weight of Pycnometer with Specimen and Water to Calibration Mark (gram)		953	955
Bulk Specific Gravity	$= \frac{A}{B + 500 - C}$	2,441	2,458
Average of Above		2,450	
Bulk Specific Gravity (Saturated-Surface-Dry Basis)	$= \frac{500}{B + 500 - C}$	2,451	2,463
Average of Above		2,457	
Apparent Specific Gravity	$= \frac{A}{B + A - C}$	2,465	2,470
Average of Above		2,468	
Absorption (%)	$= \frac{500 - A}{A} \times 100\%$	0,402	0,200
Average of Above %		0,301	

Jakarta, 3 Januari 2008
Head of Laboratory,

Dr. Ir. Elly Tjahjono, DEA



TEST FOR SPECIFIC GRAVITY AND ABSORPTION-TEST OF COARSE AGGREGATE

No. : Date Tested : 7 Januari 2008
Sample : Split 1 : Split 2 (40 : 60) Tested by : Afifa Cindika
Size : (14-20 : 3-14) mm Checked by : Ir. Madsuri, MT
Source : PT. HOLCIM (Eksmaloko daerah Rumpin, Bogor)
Project : Skripsi

A) Weight of Oven-Dry Specimen in Air (gram)	4850	4852
B) Weight of SSD Specimen in Air (gram)	5000	5000
C) Weight of Saturated Specimen in Water (gram)	3095	3098
Bulk Specific Gravity = $\frac{A}{B-C}$	2,546	2,551
Average of Above	2,548	
Bulk Specific Gravity = $\frac{B}{B-C}$ (Saturated-Surface-Dry Basis)	2,625	2,629
Average of Above	2,627	
Apparent Specific Gravity = $\frac{A}{A-C}$	2,764	2,766
Average of Above	2,765	
Absorption (%) = $\frac{B-A}{A} \times 100\%$	3,093	3,050
Average of Above %	3,072	

Jakarta, 7 Januari 2008
Head of Laboratory,

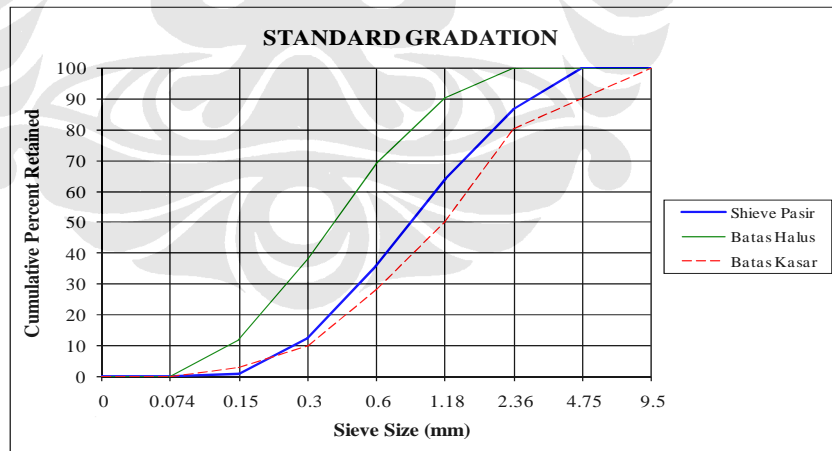
Dr. Ir. Elly Tjahjono, DEA



TEST FOR SIEVE ANALYSIS OF FINE AGGREGATE

No. : Date Tested : 3 Januari 2008
 Sample : Pasir Tested by : Afifa Cindika
 Size : 0,15 – 2,5 mm Checked by : Ir. Madsuri, MT
 Source : Garut – Galunggung
 Project : Skripsi

Sieve Size (mm)	Sample No.1			Sample No.2			Average	
	Weight Ret. (gram)	Ind. % Ret.	Cum. % Ret.	Weight Ret. (gram)	Ind. % Ret.	Cum. % Ret.	Ind. % Ret.	Cum. % Ret.
9,5	-	-	-	-	-	-	-	-
4,75	-	-	-	-	-	-	-	-
2,36	67	13,4	13,4	65	13	13	13,2	13,2
1,18	113	22,6	36	115	23	36	22,8	36
0,6	141	28,2	64,2	140	28	64	28,1	64,1
0,3	117	23,4	87,6	118	23,6	87,6	23,5	87,6
0,15	60	12	99,6	57	11,4	99	11,7	99,3
0,074	-	-	-	-	-	-	-	-
PAN	2	0,4		5	1		0,7	
F.M.		3,008			2,996		3,002	



Jakarta, 3 Januari 2008
 Head of Laboratory,

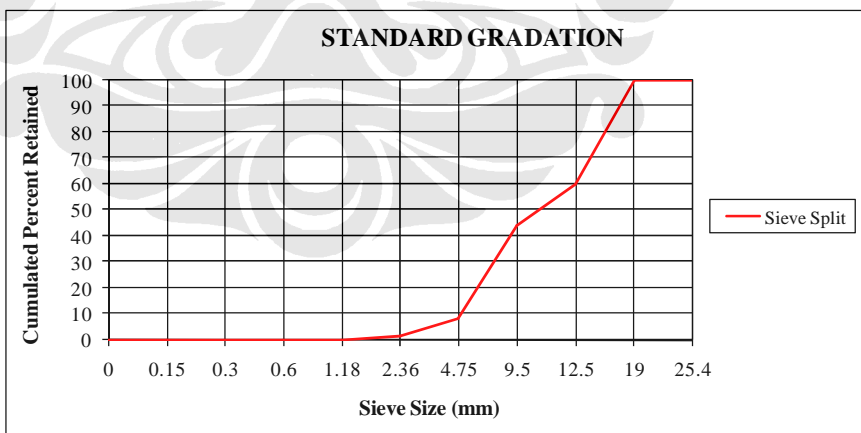
Dr. Ir. Elly Tjahjono, DEA



TEST FOR SIEVE ANALYSIS OF COARSE AGGREGATE

No. : Date Tested : 3 Januari 2008
 Sample : Split 1 : Split 2 (40 : 60) Tested by : Afifa Cindika
 Size : (14-20 : 3-14) mm Checked by : Ir. Madsuri, MT
 Source : PT. HOLCIM (Eksmaloko daerah Rumpin, Bogor)
 Project : Skripsi

Sieve Size (mm)	Sample No.1			Sample No.2			Average	
	Weight Ret. (gram)	Ind. % Ret.	Cum. % Ret.	Weight Ret. (gram)	Ind. % Ret.	Cum. % Ret.	Ind. % Ret.	Cum. % Ret.
25,4	67	1,34	1,34	68	1,36	1,36	1,35	1,35
19	911	18,22	19,56	910	18,2	19,56	18,21	19,56
12,5	1029	20,58	40,14	1027	20,54	40,1	20,56	40,12
9,5	801	16,02	56,16	803	16,06	56,16	16,04	56,16
4,75	1780	35,6	91,76	1778	35,56	91,72	35,58	91,74
2,36	322	6,44	98,2	325	6,5	98,22	6,47	98,21
1,18	-	-	98,2	-	-	98,22	-	98,21
0,6	-	-	98,2	-	-	98,22	-	98,21
0,3	-	-	98,2	-	-	98,22	-	98,21
0,15	-	-	98,2	-	-	98,22	-	98,21
PAN	90	1,8		89	1,78		1,79	
Total	699,96			700			699,98	



Jakarta, 3 Januari 2008
 Head of Laboratory,

Dr. Ir. Elly Tjahjono, DEA



TEST FOR UNIT WEIGHT AND VOIDS IN AGGREGATE

No. : Date Tested : 7 Januari 2008
 Sample : Pasir Tested by : Afifa Cindika
 Size : 0,15 – 2,5 mm Checked by : Ir. Madsuri, MT
 Source : Garut – Galunggung
 Project : Skripsi

	COMPACT	
a) Weight of Measure (kg)	1055	
b) Weight of Measure + Water (kg)	3055	3055
c) Weight of Measure + Sample (kg)	4103	4105
d) Weight of Sample (kg)	3048	3050
e) Volume of Measure (kg/liter)	2000	2000
f) Unit Weight of Aggregate (kg/liter)	1,524	1,525
B) Average of Above (kg/liter)	1,525	
A) Bulk Specific Gravity of Aggregate	2,450	
W) Unit Weight of Water (kg/liter)	1,000	1,000
Void (%)	37,767	37,767
Average	37,767	
Note :		
$d) = c) - a)$	$f) = \frac{d}{e}$	$\text{Void } (\%) = \frac{(A \times W) - B}{A \times W} \times 100 \%$
$e) = b) - a)$		

Jakarta, 7 Januari 2008
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TEST FOR UNIT WEIGHT AND VOIDS IN AGGREGATE

No. : Date Tested : 7 Januari 2008
 Sample : Split 1 : Split 2 (40 : 60) Tested by : Afifa Cindika
 Size : (14-20 : 3-14) mm Checked by : Ir. Madsuri, MT
 Source : PT. HOLCIM (Eksmaloko daerah Rumpin, Bogor)
 Project : Skripsi

	COMPACT	
a) Weight of Measure (kg)	5089	
b) Weight of Measure + Water (kg)	14361	14361
c) Weight of Measure + Sample (kg)	19665	19665
d) Weight of Sample (kg)	14576	14576
e) Volume of Measure (kg/liter)	9272	9272
f) Unit Weight of Aggregate (kg/liter)	1,572	1,572
B) Average of Above (kg/liter)	1,572	
A) Bulk Specific Gravity of Aggregate	2,548	
W) Unit Weight of Water (kg/liter)	1,000	1,000
Void (%)	38,327	38,327
Average	38,327	
Note :		
$d) = c) - a)$ $e) = b) - a)$	$f) = \frac{d}{e}$	$\text{Void (\%)} = \frac{(A \times W) - B}{A \times W} \times 100 \%$

Jakarta, 7 Januari 2008
 Head of Laboratory,

Dr. Ir. Elly Tjahjono, DEA



TEST FOR SETTING TIME

Code : A-0.0

Tested by : Afifa Cindika


Project : Skripsi


Date Tested : 31 Januari 2008

Time : 13.10 – 13.30

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1"	14:30:00	60	60	65	65	65
2	1"	14:45:00	15	75	100	100	165
3	1/2"	14:50:00	5	80	40	80	245
4	1/2"	15:00:00	10	85	60	120	285
5	1/2"	15:05:00	5	90	80	160	445
6	1/2"	15:15:00	10	100	100	200	645
7	1/4"	15:20:00	5	105	40	160	805
8	1/4"	15:30:00	10	115	65	260	1065
9	1/4"	15:45:00	15	130	85	340	1405
10	1/4"	16:00:00	15	145	100	400	1805
11	1/10"	16:05:00	5	150	25	250	2055
12	1/10"	16:15:00	10	160	35	350	2405
13	1/10"	16:30:00	15	175	60	600	3005
14	1/10"	16:45:00	15	190	80	800	3805
15	1/10"	17:00:00	15	205	100	1000	4805
16	1/20"	17:05:00	5	210	25	500	5305
17	1/20"	17:15:00	10	220	35	700	6005
18	1/20"	17:25:00	10	230	45	900	6905
19	1/20"	17:35:00	10	240	55	1100	8005
20	1/20"	17:45:00	10	250	75	1500	9505
21	1/20"	17:55:00	10	260	85	1700	11205
22	1/20"	18:00:00	15	275	100	2000	13205

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	60	65	1,778	1,812	3,223	3,161	3,286
2	75	165	1,875	2,217	4,157	3,515	4,917
3	80	245	1,903	2,389	4,546	3,621	5,708
4	85	285	1,929	2,454	4,736	3,722	6,026
5	90	445	1,954	2,648	5,175	3,819	7,013
6	100	645	2	2,809	5,619	4	7,893
7	105	805	2,021	2,905	5,873	4,085	8,443
8	115	1065	2,060	3,027	6,238	4,246	9,164
9	130	1405	2,113	3,147	6,654	4,468	9,907
10	145	1805	2,161	3,256	7,038	4,671	10,604
11	150	2055	2,176	3,312	7,208	4,735	10,974
12	160	2405	2,204	3,381	7,452	4,858	11,431
13	175	3005	2,243	3,477	7,800	5,031	12,0954
14	190	3805	2,278	3,580	8,158	5,192	12,818
15	205	4805	2,311	3,681	8,511	5,344	13,554
16	210	5305	2,322	3,724	8,649	5,392	13,873
17	220	6005	2,342	3,778	8,8508	5,486	14,277
18	230	6905	2,361	3,839	9,067	5,577	14,739
19	240	8005	2,380	3,903	9,290	5,665	15,236
20	250	9505	2,397	3,977	9,538	5,750	15,824
21	260	11205	2,414	4,049	9,779	5,832	16,397
22	275	13205	2,439	4,120	10,051	5,950	16,980
$\Sigma =$			47,669	71,497	157,624	104,130	241,170

N	= 22	ΣX^2	= 104,1301278
ΣX	= 47,66974629	ΣY^2	= 241,1707528
ΣY	= 71,49727223	Xrata-rata	= 2,166806649
$\Sigma(X \times Y)$	= 157,6239791	Yrata-rata	= 3,249876011

$$Y = (N \times a) + (X \times b)$$

$$71,497 = (22 \times a) + (47,669 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$157,623 = (47,669 \times a) + (104,130 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{r|l} 22 \cdot a + 47,669 \cdot b = 71,497 & \times 2,1668 \\ 47,669 \cdot a + 104,130 \cdot b = 157,623 & \times 1 \end{array} \quad \begin{array}{l} 47,669 \cdot a + 103,291 \cdot b = 154,921 \\ \hline 47,669 \cdot a + 104,130 \cdot b = 157,623 \end{array}$$

$$0,839 \cdot b = 2,703$$

$$b = 3,221$$

$$a = 3,731$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

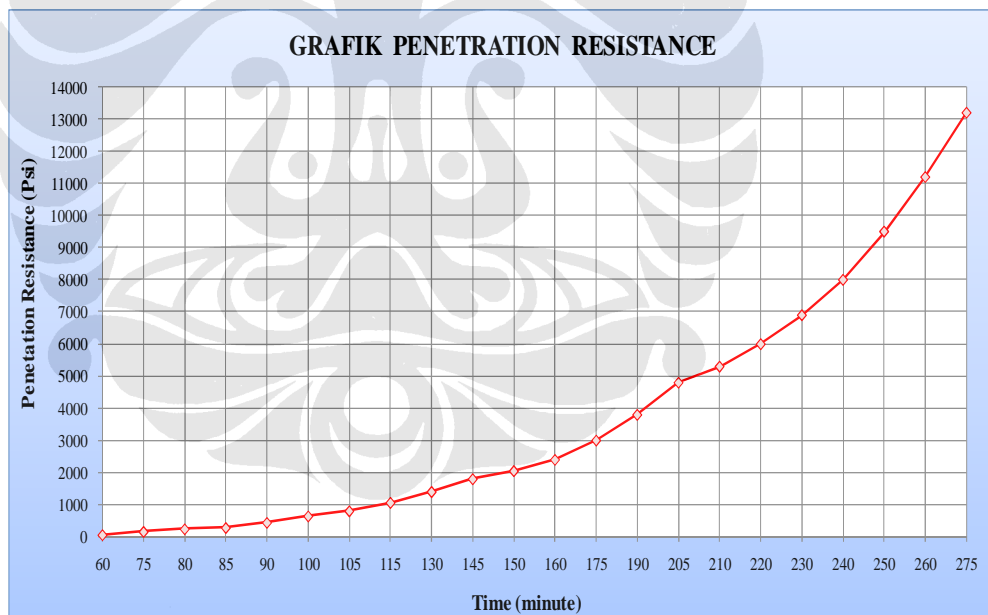
$$\text{Log}(PR) = 3,731 + 3,221 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 1,995$$

$$t = 99,042 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,276$$

$$t = 188,849 \text{ menit} \rightarrow \text{Final Setting}$$





TEST FOR SETTING TIME

Code : A-1.0

Tested by : Afifa Cindika


Project : Skripsi


Date Tested : 1 Februari 2008

Time : 12.10 – 12.30

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1"	15:00:00	150	150	35	35	35
2	1"	15:15:00	15	165	45	45	80
3	1"	15:30:00	15	180	60	60	140
4	1"	15:45:00	15	195	80	80	220
5	1/2"	15:50:00	5	200	36	72	292
6	1/2"	16:00:00	10	210	48	96	388
7	1/2"	16:15:00	15	225	65	130	518
8	1/2"	16:30:00	15	240	80	160	678
9	1/4"	16:35:00	5	245	30	120	798
10	1/4"	16:45:00	10	255	40	160	958
11	1/4"	17:00:00	15	270	50	200	1158
12	1/4"	17:15:00	15	285	65	260	1418
13	1/4"	17:30:00	15	300	80	320	1738
14	1/10"	17:35:00	5	305	25	250	1988
15	1/10"	17:45:00	10	315	35	350	2338
16	1/10"	18:00:00	15	330	45	450	2788
17	1/10"	18:15:00	15	345	50	500	3288
18	1/10"	18:30:00	15	360	65	650	3938
19	1/10"	18:35:00	5	365	80	800	4738
20	1/20"	18:45:00	10	375	25	500	5238
21	1/20"	19:00:00	15	390	35	700	5938
22	1/20"	19:15:00	15	405	45	900	6838
23	1/20"	19:30:00	15	420	60	1200	8038
24	1/20"	19:45:00	15	435	80	1600	9638

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	150	35	2,176	1,544	3,360	4,735	2,384
2	165	80	2,217	1,903	4,220	4,917	3,622
3	180	140	2,255	2,146	4,840	5,086	4,606
4	195	220	2,290	2,342	5,364	5,244	5,487
5	200	292	2,301	2,465	5,673	5,295	6,078
6	210	388	2,322	2,589	6,012	5,393	6,702
7	225	518	2,352	2,714	6,385	5,533	7,368
8	240	678	2,380	2,831	6,739	5,665	8,016
9	245	798	2,389	2,902	6,933	5,708	8,422
10	255	958	2,407	2,981	7,175	5,791	8,889
11	270	1158	2,431	3,064	7,449	5,912	9,386
12	285	1418	2,455	3,152	7,737	6,026	9,933
13	300	1738	2,477	3,240	8,026	6,136	10,498
14	305	1988	2,484	3,298	8,194	6,172	10,880
15	315	2338	2,498	3,369	8,416	6,242	11,349
16	330	2788	2,519	3,445	8,677	6,343	11,870
17	345	3288	2,538	3,517	8,925	6,441	12,369
18	360	3938	2,556	3,595	9,191	6,535	12,926
19	365	4738	2,562	3,676	9,418	6,565	13,510
20	375	5238	2,574	3,719	9,573	6,626	13,832
21	390	5938	2,591	3,774	9,778	6,714	14,240
22	405	6838	2,607	3,835	9,999	6,799	14,707
23	420	8038	2,623	3,905	10,244	6,881	15,250
24	435	9638	2,638	3,984	10,512	6,962	15,872
Σ =			58,645	73,992	182,841	143,720	238,195

N	= 24	ΣX ²	= 143,720
ΣX	= 58,645	ΣY ²	= 238,195
ΣY	= 73,992	Xrata-rata	= 2,443
Σ(X×Y)	= 182,841	Yrata-rata	= 3,082

$$Y = (N \times a) + (X \times b)$$

$$73,992 = (24 \times a) + (58,645 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$182,841 = (58,645 \times a) + (143,720 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{r|l} 24 \cdot a + 58,645 \cdot b = 73,992 & \times 2,443 \\ 58,645 \cdot a + 143,720 \cdot b = 182,841 & \times 1 \end{array} \quad \begin{array}{l} 58,645 \cdot a + 143,303 \cdot b = 180,802 \\ 58,645 \cdot a + 143,720 \cdot b = 182,841 \end{array}$$

$$0,416 \cdot b = 2,038$$

$$b = 4,890$$

$$a = 8,868$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

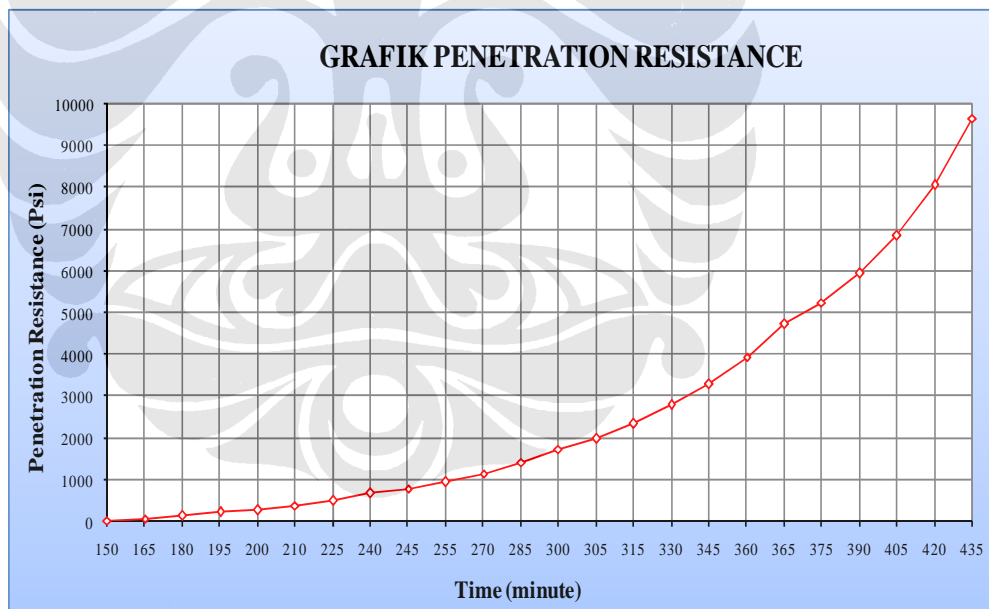
$$\text{Log}(PR) = 8,868 + 4,890 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 2,365$$

$$t = 231,762 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,549$$

$$t = 354,560 \text{ menit} \rightarrow \text{Final Setting}$$







TEST FOR SETTING TIME

Code : A-1.2
Tested by : Afifa Cindika
Project : Skripsi
Date Tested : 3 Februari 2008
Time : 11.30 – 12.00

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1"	14:30:00	150	150	35	35	35
2	1"	14:45:00	15	165	45	45	80
3	1"	15:00:00	15	180	65	65	145
4	1"	15:15:00	15	195	80	80	225
5	1/2"	15:20:00	5	200	35	70	295
6	1/2"	15:30:00	10	210	45	90	385
7	1/2"	15:45:00	15	225	60	120	505
8	1/2"	16:00:00	15	240	70	140	645
9	1/2"	16:15:00	15	255	80	160	805
10	1/4"	16:20:00	5	260	35	140	945
11	1/4"	16:30:00	10	270	45	180	1125
12	1/4"	18:45:00	15	285	60	240	1365
13	1/4"	17:00:00	15	300	70	280	1645
14	1/4"	17:15:00	15	315	80	320	1965
15	1/10"	17:20:00	5	320	35	350	2315
16	1/10"	17:30:00	10	330	45	450	2765
17	1/10"	17:45:00	15	345	60	600	3365
18	1/10"	18:00:00	15	360	70	700	4065
19	1/10"	18:15:00	15	375	80	800	4865
20	1/20"	18:20:00	5	380	30	600	5465
21	1/20"	18:30:00	10	390	40	800	6265
22	1/20"	18:45:00	15	405	50	1000	7265
23	1/20"	19:00:00	15	420	60	1200	8465
24	1/20"	19:15:00	15	435	70	1400	9865
25	1/20"	19:30:00	15	450	80	1600	11465

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	150	35	2,176	1,544	3,360	4,735	2,384
2	165	80	2,217	1,903	4,220	4,917	3,622
3	180	145	2,255	2,161	4,874	5,086	4,672
4	195	225	2,290	2,352	5,387	5,244	5,533
5	200	295	2,301	2,470	5,683	5,295	6,100
6	210	385	2,322	2,585	6,004	5,393	6,685
7	225	505	2,352	2,703	6,359	5,533	7,308
8	240	645	2,380	2,810	6,687	5,665	7,894
9	255	805	2,407	2,906	6,993	5,791	8,444
10	260	945	2,415	2,975	7,186	5,832	8,853
11	270	1125	2,431	3,051	7,418	5,912	9,310
12	285	1365	2,455	3,135	7,696	6,026	9,829
13	300	1645	2,477	3,216	7,967	6,136	10,344
14	315	1965	2,498	3,293	8,228	6,242	10,846
15	320	2315	2,505	3,365	8,429	6,276	11,320
16	330	2765	2,519	3,442	8,668	6,343	11,845
17	345	3365	2,538	3,527	8,951	6,441	12,440
18	360	4065	2,556	3,609	9,226	6,535	13,025
19	375	4865	2,574	3,687	9,491	6,626	13,595
20	380	5465	2,580	3,738	9,642	6,655	13,970
21	390	6265	2,591	3,797	9,838	6,714	14,417
22	405	7265	2,607	3,861	10,068	6,799	14,909
23	420	8465	2,623	3,928	10,303	6,881	15,426
24	435	9865	2,638	3,994	10,538	6,962	15,953
25	450	11465	2,653	4,059	10,770	7,040	16,479
Σ =			61,363	78,112	193,986	151,078	255,200

N	= 25	ΣX ²	= 151,078
ΣX	= 61,363	ΣY ²	= 255,200
ΣY	= 78,112	Xrata-rata	= 2,454
Σ(X×Y)	= 193,986	Yrata-rata	= 3,124

$$Y = (N \times a) + (X \times b)$$

$$78,112 = (25 \times a) + (61,363 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$193,986 = (61,363 \times a) + (151,078 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{r|l} 25 \cdot a + 61,363 \cdot b = 78,112 & \times 2,454 \\ 61,363 \cdot a + 151,078 \cdot b = 193,986 & \times 1 \end{array} \quad \begin{array}{l} 61,363 \cdot a + 150,615 \cdot b = 191,727 \\ 61,363 \cdot a + 151,078 \cdot b = 193,986 \end{array}$$

$$0,462 \cdot b = 2,259$$

$$b = 4,889$$

$$a = 8,876$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

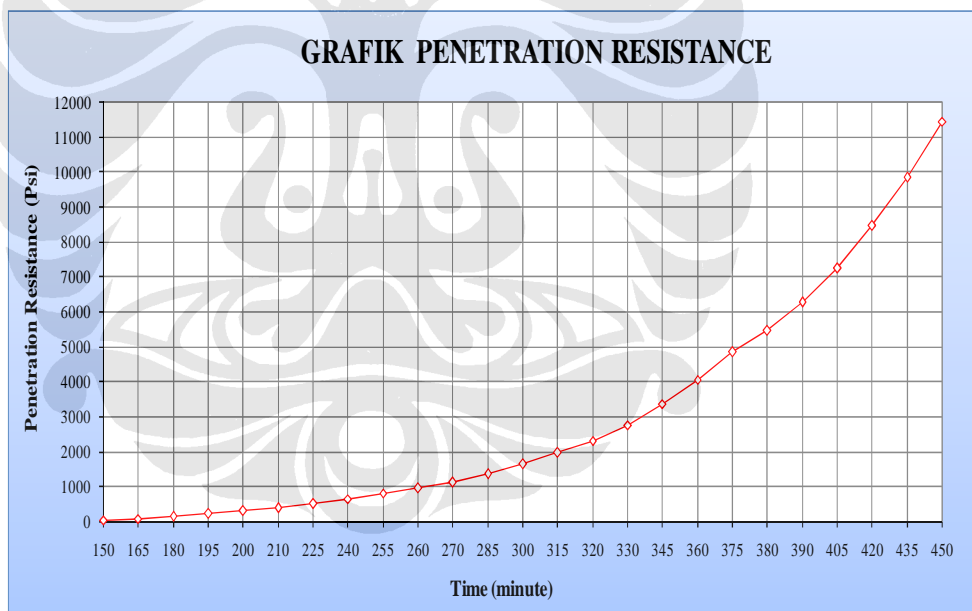
$$\text{Log}(PR) = 8,876 + 4,889 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 2,367$$

$$t = 233,067 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,552$$

$$t = 356,604 \text{ menit} \rightarrow \text{Final Setting}$$





TEST FOR SETTING TIME

Code : A-1.4

Tested by : Afifa Cindika


Project : Skripsi


Date Tested : 3 Februari 2008

Time : 10.30 – 11.00

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1"	13:30:00	150	150	30	30	30
2	1"	13:45:00	15	165	45	45	75
3	1"	14:00:00	15	180	65	65	140
4	1"	14:15:00	15	195	80	80	220
5	1/2"	14:20:00	5	200	30	60	280
6	1/2"	14:30:00	10	210	45	90	370
7	1/2"	14:45:00	15	225	60	120	490
8	1/2"	15:00:00	15	240	70	140	630
9	1/2"	15:15:00	15	255	80	160	790
10	1/4"	15:20:00	5	260	30	120	910
11	1/4"	15:30:00	10	270	45	180	1090
12	1/4"	15:45:00	15	285	60	240	1330
13	1/4"	16:00:00	15	300	70	280	1610
14	1/4"	16:45:00	15	315	80	320	1930
15	1/10"	16:50:00	5	320	30	300	2230
16	1/10"	17:00:00	10	330	45	450	2680
17	1/10"	17:15:00	15	345	60	600	3280
18	1/10"	17:30:00	15	360	70	700	3980
19	1/10"	17:45:00	15	375	80	800	4780
20	1/20"	17:50:00	5	380	30	600	5380
21	1/20"	18:00:00	10	390	40	800	6180
22	1/20"	18:15:00	15	405	50	1000	7180
23	1/20"	18:30:00	15	420	60	1200	8380
24	1/20"	18:45:00	15	435	75	1500	9880
25	1/20"	19:00:00	15	450	80	1600	11480

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	150	30	2,176	1,477	3,214	4,735	2,182
2	165	75	2,217	1,875	4,158	4,917	3,516
3	180	140	2,255	2,146	4,840	5,086	4,606
4	195	220	2,290	2,342	5,364	5,244	5,487
5	200	280	2,301	2,447	5,631	5,295	5,989
6	210	370	2,322	2,568	5,964	5,393	6,596
7	225	490	2,352	2,690	6,328	5,533	7,237
8	240	630	2,380	2,799	6,663	5,665	7,836
9	255	790	2,407	2,898	6,973	5,791	8,396
10	260	910	2,415	2,959	7,146	5,832	8,756
11	270	1090	2,431	3,037	7,385	5,912	9,226
12	285	1330	2,455	3,124	7,669	6,026	9,758
13	300	1610	2,477	3,207	7,944	6,136	10,284
14	315	1930	2,498	3,286	8,208	6,242	10,795
15	320	2230	2,505	3,348	8,388	6,276	11,211
16	330	2680	2,519	3,428	8,634	6,343	11,752
17	345	3280	2,538	3,516	8,923	6,441	12,361
18	360	3980	2,556	3,600	9,202	6,535	12,959
19	375	4780	2,574	3,679	9,471	6,626	13,538
20	380	5380	2,580	3,731	9,625	6,655	13,919
21	390	6180	2,591	3,791	9,823	6,714	14,372
22	405	7180	2,607	3,856	10,055	6,799	14,870
23	420	8380	2,623	3,923	10,292	6,881	15,392
24	435	9880	2,638	3,995	10,540	6,962	15,958
25	450	11480	2,653	4,060	10,772	7,040	16,483
Σ =			61,363	77,783	193,211	151,078	253,479

N	= 25	ΣX ²	= 151,078
ΣX	= 61,363	ΣY ²	= 253,479
ΣY	= 77,783	Xrata-rata	= 2,454
Σ(X×Y)	= 193,211	Yrata-rata	= 3,111

$$Y = (N \times a) + (X \times b)$$

$$77,783 = (25 \times a) + (61,363 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$193,211 = (61,363 \times a) + (151,078 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{l} 25 \cdot a + 61,363 \cdot b = 77,783 \times 2,454 \\ 61,363 \cdot a + 151,078 \cdot b = 193,211 \times 1 \end{array} \quad \left| \begin{array}{l} 61,363 \cdot a + 150,615 \cdot b = 190,920 \\ 61,363 \cdot a + 151,078 \cdot b = 193,211 \end{array} \right.$$

$$0,462 \cdot b = 2,291$$

$$b = 4,957$$

$$a = 9,055$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

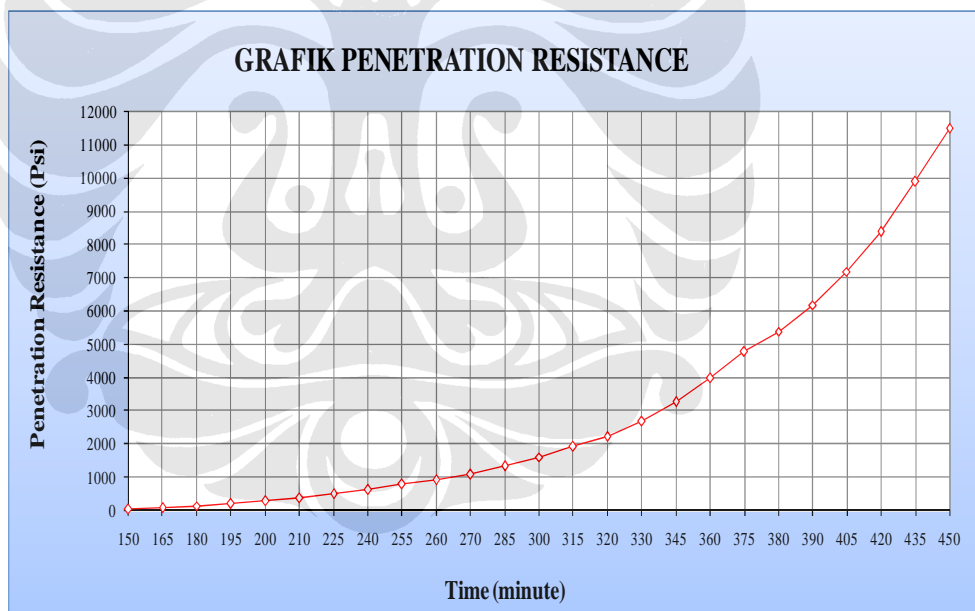
$$\text{Log}(PR) = 9,055 + 4,957 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 2,371$$

$$t = 235,135 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,554$$

$$t = 357,692 \text{ menit} \rightarrow \text{Final Setting}$$





TEST FOR SETTING TIME

Code : PA-1.0

Tested by : Afifa Cindika


Project : Skripsi


Date Tested : 6 Februari 2008

Time : 09.05 – 09.40

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1'	12:10:00	150	150	42	42	42
2	1'	12:25:00	15	165	60	60	102
3	1'	12:40:00	15	180	80	80	182
4	1/2"	12:55:00	15	195	48	96	278
5	1/2"	13:10:00	15	210	64	128	406
6	1/2"	13:25:00	15	225	80	160	566
7	1/4"	13:40:00	15	240	38	152	718
8	1/4"	13:55:00	15	255	47	188	906
9	1/4"	14:10:00	15	270	68	272	1178
10	1/4"	14:25:00	15	285	80	320	1498
11	1/10"	14:40:00	15	300	35	350	1848
12	1/10"	14:55:00	15	315	44	440	2288
13	1/10"	15:10:00	15	330	50	500	2788
14	1/10"	15:25:00	15	345	64	640	3428
15	1/10"	15:40:00	15	360	72	720	4148
16	1/10"	15:55:00	15	375	80	800	4948
17	1/20"	16:10:00	15	390	38	760	5708
18	1/20"	16:25:00	15	405	47	940	6648
19	1/20"	16:40:00	15	420	58	1160	7808
20	1/20"	16:55:00	15	435	65	1300	9108
21	1/20"	17:10:00	15	450	75	1500	10608
22	1/20"	17:25:00	15	465	80	1600	12208

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	42	150	2,176	1,623	3,532	4,735	2,635
2	102	165	2,217	2,009	4,454	4,917	4,034
3	182	180	2,255	2,260	5,097	5,086	5,108
4	278	195	2,290	2,444	5,597	5,244	5,973
5	406	210	2,322	2,609	6,058	5,393	6,804
6	566	225	2,352	2,753	6,475	5,533	7,578
7	718	240	2,380	2,856	6,798	5,665	8,157
8	906	255	2,407	2,957	7,116	5,791	8,745
9	1178	270	2,431	3,071	7,467	5,912	9,432
10	1498	285	2,455	3,176	7,795	6,026	10,084
11	1848	300	2,477	3,267	8,092	6,136	10,671
12	2288	315	2,498	3,359	8,393	6,242	11,286
13	2788	330	2,519	3,445	8,677	6,343	11,870
14	3428	345	2,538	3,535	8,971	6,441	12,497
15	4148	360	2,556	3,618	9,248	6,535	13,089
16	4948	375	2,574	3,694	9,510	6,626	13,649
17	5708	390	2,591	3,756	9,733	6,714	14,111
18	6648	405	2,607	3,823	9,967	6,799	14,613
19	7808	420	2,623	3,893	10,211	6,881	15,152
20	9108	435	2,638	3,959	10,447	6,962	15,677
21	10608	450	2,653	4,026	10,681	7,040	16,206
22	12208	465	2,667	4,087	10,901	7,115	16,701
$\Sigma =$			54,229	70,219	175,222	134,135	234,072

N	= 22	ΣX^2	= 134,135
ΣX	= 54,229	ΣY^2	= 234,072
ΣY	= 70,219	Xrata-rata	= 2,465
$\Sigma(X \times Y)$	= 175,222	Yrata-rata	= 3,192

$$Y = (N \times a) + (X \times b)$$

$$70,219 = (22 \times a) + (54,229 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$175,222 = (54,229 \times a) + (134,135 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{l} 22 \cdot a + 54,229 \cdot b = 70,219 \quad \times 2,465 \\ 54,229 \cdot a + 134,135 \cdot b = 175,222 \quad \times 1 \end{array} \quad \left| \begin{array}{l} 54,229 \cdot a + 133,673 \cdot b = 173,088 \\ 54,229 \cdot a + 134,135 \cdot b = 175,222 \end{array} \right.$$

$$0,462 \cdot b = 2,133$$

$$b = 4,621$$

$$a = 8,199$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

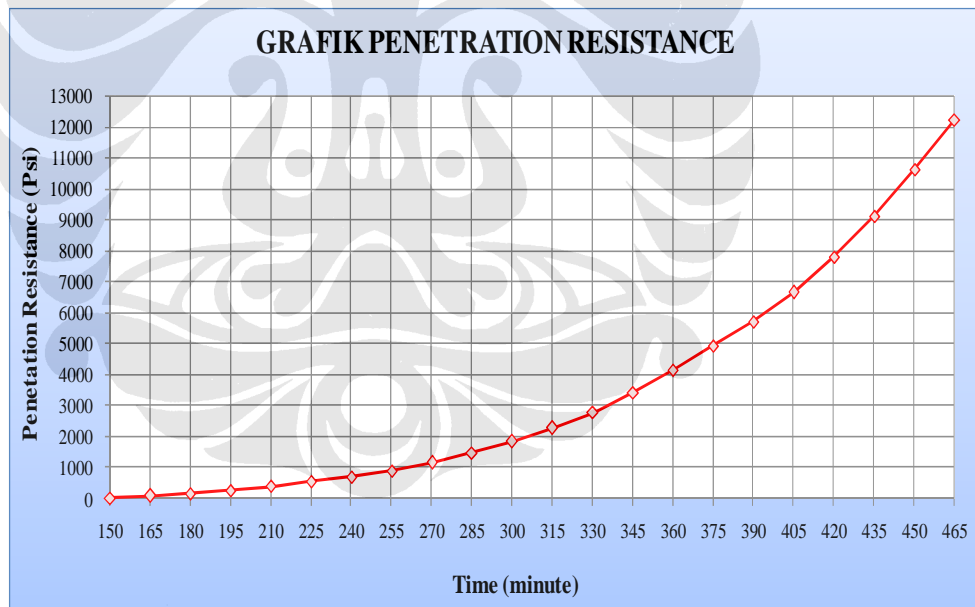
$$\text{Log}(PR) = 8,199 + 4,621 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 2,358$$

$$t = 228,204 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,554$$

$$t = 357,888 \text{ menit} \rightarrow \text{Final Setting}$$







TEST FOR SETTING TIME

Code : PA-1.2
Tested by : Afifa Cindika
Project : Skripsi
Date Tested : 22 Januari 2008
Time : 09.40 – 10.40

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1'	12:50:00	150	150	38	38	38
2	1'	13:05:00	15	165	60	60	98
3	1'	13:20:00	15	180	80	80	178
4	1/2"	13:35:00	15	195	44	88	266
5	1/2"	13:50:00	15	210	64	128	394
6	1/2"	14:05:00	15	225	80	160	554
7	1/4"	14:20:00	15	240	34	136	690
8	1/4"	14:35:00	15	255	55	220	910
9	1/4"	14:50:00	15	270	60	240	1150
10	1/4"	15:05:00	15	285	80	320	1470
11	1/10"	15:20:00	15	300	30	300	1770
12	1/10"	15:35:00	15	315	42	420	2190
13	1/10"	15:50:00	15	330	57	570	2760
14	1/10"	16:05:00	15	345	63	630	3390
15	1/10"	16:20:00	15	360	74	740	4130
16	1/10"	16:35:00	15	375	80	800	4930
17	1/20"	16:50:00	15	390	32	640	5570
18	1/20"	17:05:00	15	405	40	800	6370
19	1/20"	17:20:00	15	420	48	960	7330
20	1/20"	17:35:00	15	435	58	1160	8490
21	1/20"	17:50:00	15	450	68	1360	9850
22	1/20"	18:05:00	15	465	80	1600	11450

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	38	150	2,176	1,580	3,438	4,735	2,496
2	98	165	2,217	1,991	4,416	4,917	3,965
3	178	180	2,255	2,250	5,075	5,086	5,064
4	266	195	2,290	2,425	5,553	5,244	5,880
5	394	210	2,322	2,595	6,027	5,393	6,737
6	554	225	2,352	2,744	6,453	5,533	7,527
7	690	240	2,380	2,839	6,757	5,665	8,059
8	910	255	2,407	2,959	7,121	5,791	8,756
9	1150	270	2,431	3,061	7,442	5,912	9,368
10	1470	285	2,455	3,167	7,775	6,026	10,032
11	1770	300	2,477	3,248	8,046	6,136	10,549
12	2190	315	2,498	3,340	8,345	6,242	11,159
13	2760	330	2,519	3,441	8,666	6,343	11,840
14	3390	345	2,538	3,530	8,959	6,441	12,462
15	4130	360	2,556	3,616	9,243	6,535	13,075
16	4930	375	2,574	3,693	9,506	6,626	13,637
17	5570	390	2,591	3,746	9,706	6,714	14,031
18	6370	405	2,607	3,804	9,919	6,799	14,471
19	7330	420	2,623	3,865	10,139	6,881	14,939
20	8490	435	2,638	3,929	10,366	6,962	15,436
21	9850	450	2,653	3,993	10,595	7,040	15,948
22	11450	465	2,667	4,059	10,827	7,115	16,474
$\Sigma =$			54,229	69,876	174,375	134,135	231,905

N	= 22	ΣX^2	= 134,135
ΣX	= 54,229	ΣY^2	= 231,905
ΣY	= 69,876	Xrata-rata	= 2,464
$\Sigma(X \times Y)$	= 174,375	Yrata-rata	= 3,176

$$Y = (N \times a) + (X \times b)$$

$$69,992 = (22 \times a) + (54,229 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$174,375 = (54,229 \times a) + (134,135 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{r|l} 22 \cdot a + 54,229 \cdot b = 69,992 & \times 2,464 \\ 54,229 \cdot a + 134,135 \cdot b = 174,375 & \times 1 \end{array} \quad \begin{array}{l} 54,229 \cdot a + 133,673 \cdot b = 172,242 \\ 54,229 \cdot a + 54,229 \cdot b = 174,375 \end{array}$$

$$0,462 \cdot b = 2,133$$

$$b = 4,621$$

$$a = 8,214$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

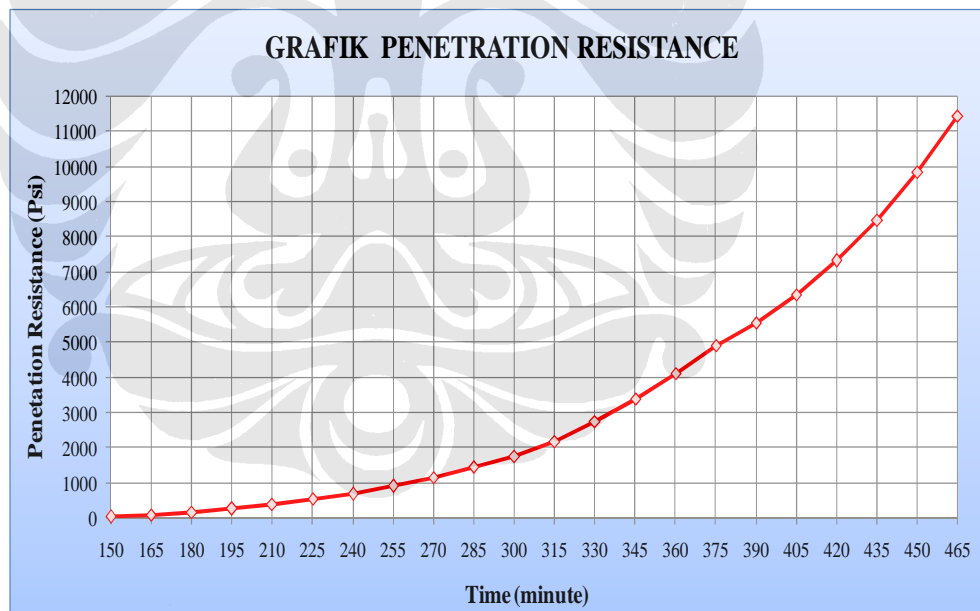
$$\text{Log}(PR) = 8,214 + 4,621 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 2,362$$

$$t = 229,982 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,557$$

$$t = 360,691 \text{ menit} \rightarrow \text{Final Setting}$$







TEST FOR SETTING TIME

Code : PA-1.4
Tested by : Afifa Cindika
Project : Skripsi
Date Tested : 29 Januari 2008
Time : 10.50 – 11.20

No	Luasan Jarum (Inch 2)	Waktu Penetrasi			Hasil Pembacaan	Nilai Perlawanan Penetrasi	
		Jam	Durasi (Menit)	Kumulatif (Menit)		Psi	Kumulatif (Psi)
1	1'	14:10:00	150	150	30	30	30
2	1'	14:25:00	15	165	67	67	97
3	1'	14:40:00	15	180	80	80	177
4	1/2"	14:55:00	15	195	45	90	267
5	1/2"	15:10:00	15	210	65	130	397
6	1/2"	15:25:00	15	225	80	160	557
7	1/4"	15:40:00	15	240	35	140	697
8	1/4"	15:55:00	15	255	48	192	889
9	1/4"	16:10:00	15	270	67	268	1157
10	1/4"	16:25:00	15	285	80	320	1477
11	1/10"	16:40:00	15	300	27	270	1747
12	1/10"	16:55:00	15	315	39	390	2137
13	1/10"	17:10:00	15	330	48	480	2617
14	1/10"	17:25:00	15	345	55	550	3167
15	1/10"	17:40:00	15	360	67	670	3837
16	1/10"	17:55:00	15	375	80	800	4637
17	1/20"	18:10:00	15	390	20	400	5037
18	1/20"	18:25:00	15	405	38	760	5797
19	1/20"	18:40:00	15	420	48	960	6757
20	1/20"	18:55:00	15	435	58	1160	7917
21	1/20"	19:10:00	15	450	67	1340	9257
22	1/20"	19:25:00	15	465	80	1600	10857

Keterangan :

 Time for Initial Setting

 Time for Final Setting

No	t	PR	Log t	Log PR	X×Y	X ²	Y ²
			X	Y			
1	30	150	2,176	1,477	3,214	4,735	2,182
2	97	165	2,217	1,987	4,406	4,917	3,947
3	177	180	2,255	2,248	5,070	5,086	5,053
4	267	195	2,290	2,427	5,557	5,244	5,888
5	397	210	2,322	2,599	6,035	5,393	6,754
6	557	225	2,352	2,746	6,459	5,533	7,540
7	697	240	2,380	2,843	6,767	5,665	8,084
8	889	255	2,407	2,949	7,097	5,791	8,696
9	1157	270	2,431	3,063	7,448	5,912	9,384
10	1477	285	2,455	3,169	7,780	6,026	10,045
11	1747	300	2,477	3,242	8,032	6,136	10,512
12	2137	315	2,498	3,330	8,319	6,242	11,088
13	2617	330	2,519	3,418	8,608	6,343	11,681
14	3167	345	2,538	3,501	8,884	6,441	12,255
15	3837	360	2,556	3,584	9,162	6,535	12,845
16	4637	375	2,574	3,666	9,437	6,626	13,441
17	5037	390	2,591	3,702	9,593	6,714	13,706
18	5797	405	2,607	3,763	9,812	6,799	14,162
19	6757	420	2,623	3,830	10,046	6,881	14,667
20	7917	435	2,638	3,899	10,286	6,962	15,199
21	9257	450	2,653	3,966	10,524	7,040	15,733
22	10857	465	2,667	4,036	10,765	7,115	16,287
$\Sigma =$			54,229	69,445	173,300	134,135	229,149

N	= 22	ΣX^2	= 134,135
ΣX	= 54,229	ΣY^2	= 229,149
ΣY	= 69,445	Xrata-rata	= 2,455
$\Sigma(X \times Y)$	= 173,300	Yrata-rata	= 3,115

$$Y = (N \times a) + (X \times b)$$

$$69,445 = (22 \times a) + (54,229 \times b) \dots I$$

$$(X \times Y) = (X \times a) + (X^2 \times b)$$

$$173,300 = (54,229 \times a) + (134,135 \times b) \dots II$$

Substitusi : I & II

$$\begin{array}{r|l} 22 \cdot a + 54,229 \cdot b = 69,445 & \times 2,455 \\ 54,229 \cdot a + 134,135 \cdot b = 173,300 & \times 1 \end{array} \quad \begin{array}{l} 54,229 \cdot a + 133,673 \cdot b = 171,178 \\ 54,229 \cdot a + 134,135 \cdot b = 173,300 \end{array}$$

$$0,462 \cdot b = 2,122$$

$$b = 4,596$$

$$a = 8,174$$

$$\text{Log}(PR) = a + b \cdot \text{Log}(t)$$

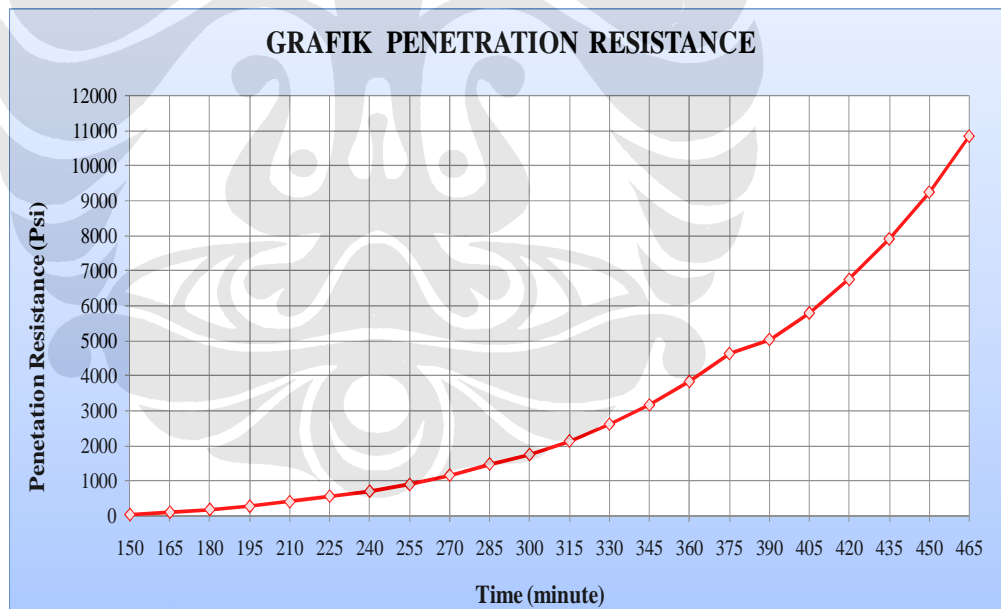
$$\text{Log}(PR) = 8,174 + 4,596 \cdot \text{Log}(t)$$

$$\text{Log}(t)(PR = 500) = 2,365$$

$$t = 231,959 \text{ menit} \rightarrow \text{Initial Setting}$$

$$\text{Log}(t)(PR = 4000) = 2,562$$

$$t = 364,659 \text{ menit} \rightarrow \text{Final Setting}$$



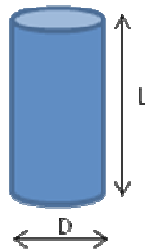


TEST FOR COMPRESSIVE STRENGTH

Code : A-0.0
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 31 Januari 2008
 Time : 13.10

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			BETON NORMAL			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			-			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
1 Days	1/2/2008	78,5	3705	9000	114,650	110,240
1 Days			3714	9500	121,019	116,365
1 Days			3720	10000	127,389	122,489
Average 1 Days					121,019	116,365
3 Days	3/2/2008	78,5	3732	17000	216,561	208,231
3 Days			3700	16500	210,191	202,107
3 Days			3762	17500	222,930	214,356
Average 3 Days					216,561	208,231
7 Days	7/2/2008	78,5	3747	22500	286,624	275,600
7 Days			3721	21500	273,885	263,351
7 Days			3745	22000	280,255	269,476
Average 7 Days					280,255	269,476
14 Days	14/2/2008	78,5	3767	26500	337,580	324,596
14 Days			3764	26000	331,210	318,471
14 Days			3762	26000	331,210	318,471
Average 14 Days					333,333	320,513
28 Days	28/2/2008	78,5	3869	32500	414,013	398,089
28 Days			3780	33500	426,752	410,338
28 Days			3675	33000	420,382	404,214
Average 28 Days					420,382	404,214
56 Days	27/3/2008	78,5	3875	33700	429,299	412,788
56 Days			3885	33800	430,573	414,013
56 Days			3880	33750	429,936	413,400
Average 56 Days					429,936	413,400

Description :



$L = 20 \text{ cm}$
 $D = 10 \text{ cm}$
 $\pi = 3,14$
 $A = \frac{1}{4} \times \pi \times D^2 = 78,5 \text{ cm}^2$
 $\sigma = \frac{P}{A}$

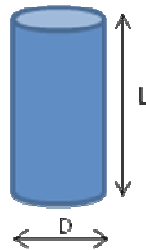


TEST FOR COMPRESSIVE STRENGTH

Code : A-1.0
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 1 februari 2008
 Time : 12.10

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete With ADVA 1,0%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
1 Days	2/2/2008	78,5	3625	10000	127,389	122,489
1 Days			3630	12000	152,866	146,987
1 Days			3632	11000	140,127	134,738
Average 1 Days					140,127	134,738
3 Days	4/2/2008	78,5	3649	20000	254,777	244,978
3 Days			3650	21000	267,516	257,227
3 Days			3665	22500	286,624	275,600
Average 3 Days					269,639	259,268
7 Days	8/2/2008	78,5	3739	27500	350,318	336,845
7 Days			3745	28000	356,688	342,969
7 Days			3729	27000	343,949	330,720
Average 7 Days					350,318	336,845
14 Days	15/2/2008	78,5	3840	30000	382,166	367,467
14 Days			3841	30000	382,166	367,467
14 Days			3860	31000	394,904	379,716
Average 14 Days					386,412	371,550
28 Days	29/2/2008	78,5	3898	36000	458,599	440,960
28 Days			3886	35000	445,860	428,711
28 Days			3890	35500	452,229	434,836
Average 28 Days					452,229	434,836
56 Days	28/3/2008	78,5	3898	36150	460,510	442,798
56 Days			3886	36100	459,873	442,185
56 Days			3890	36250	461,783	444,023
Average 56 Days					460,722	443,002

Description :



$$\begin{aligned}
 L &= 20 \text{ cm} \\
 D &= 10 \text{ cm} \\
 \pi &= 3,14 \\
 A &= \frac{1}{4} \times \pi \times D^2 = 78,5 \text{ cm}^2 \\
 \sigma &= \frac{P}{A}
 \end{aligned}$$

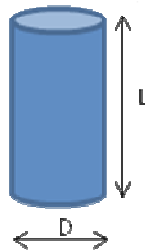


TEST FOR COMPRESSIVE STRENGTH

Code : A-1.2
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 3 Februari 2008
 Time : 11.30

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete With ADVA 1,2%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
1 Days	4/2/2008	78,5	3730	10000	127,389	122,489
1 Days			3735	10500	133,758	128,613
1 Days			3760	11000	140,127	134,738
Average 1 Days					133,758	128,613
3 Days	6/2/2008	78,5	3760	20000	254,777	244,978
3 Days			3761	20000	254,777	244,978
3 Days			3758	19500	248,408	238,854
Average 3 Days					252,654	242,936
7 Days	10/2/2008	78,5	3765	25500	324,841	312,347
7 Days			3774	26000	331,210	318,471
7 Days			3776	26000	331,210	318,471
Average 7 Days					329,087	316,430
14 Days	17/2/2008	78,5	3785	29500	375,796	361,342
14 Days			3790	30000	382,166	367,467
14 Days			7393	30750	391,720	376,654
Average 14 Days					383,227	368,488
28 Days	28/2/2008	78,5	3810	34500	439,490	422,587
28 Days			3822	35000	445,860	428,711
28 Days			3835	36000	458,599	440,960
Average 28 Days					447,983	430,753
56 Days	27/3/2008	78,5	3810	36050	459,236	441,573
56 Days			3822	35700	454,777	437,286
56 Days			3835	35750	455,414	437,898
Average 56 Days					456,476	438,919

Description :



$$\begin{aligned}
 L &= 20 \text{ cm} \\
 D &= 10 \text{ cm} \\
 \pi &= 3,14 \\
 A &= \frac{1}{4} \times \pi \times D^2 = 78,5 \text{ cm}^2 \\
 \sigma &= \frac{P}{A}
 \end{aligned}$$

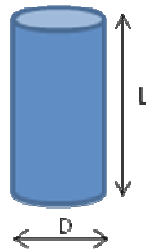


TEST FOR COMPRESSIVE STRENGTH

Code : A-1.4
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 3 Februari 2008
 Time : 10.30

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete With ADVA 1,4%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
1 Days	9/2/2008	78,5	3774	10000	127,389	122,489
1 Days			3765	9500	121,019	116,365
1 Days			3780	10500	133,758	128,613
Average 1 Days					127,389	122,489
3 Days	11/2/2008	78,5	3935	19000	242,038	232,729
3 Days			3940	19500	248,408	238,854
3 Days			3945	19800	252,229	242,528
Average 3 Days					247,558	238,037
7 Days	15/2/2008	78,5	3969	24000	305,732	293,974
7 Days			3974	25000	318,471	306,222
7 Days			3970	24000	305,732	293,974
Average 7 Days					309,979	298,057
14 Days	22/2/2008	78,5	3980	27000	343,949	330,720
14 Days			3981	27000	343,949	330,720
14 Days			3985	27500	350,318	336,845
Average 14 Days					346,072	332,762
28 Days	7/3/2008	78,5	3990	33000	420,382	404,214
28 Days			3995	33500	426,752	410,338
28 Days			3999	34000	433,121	416,463
Average 28 Days					426,752	410,338
56 Days	4/4/2008	78,5	3990	34100	434,395	417,687
56 Days			3995	34050	433,758	417,075
56 Days			3999	34200	435,669	418,912
Average 56 Days					434,607	417,892

Description :



$$\begin{aligned}
 L &= 20 \text{ cm} \\
 D &= 10 \text{ cm} \\
 \pi &= 3,14 \\
 A &= \frac{1}{4} \times \pi \times D^2 = 78,5 \text{ cm}^2 \\
 \sigma &= \frac{P}{A}
 \end{aligned}$$

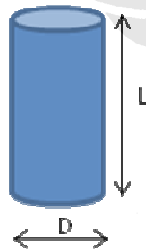


TEST FOR COMPRESSIVE STRENGTH

Code : PA-1.0
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 6 Februari 2008
 Time : 09.05

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete Precast With ADVA 1,0%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
7 Days	13/2/2008	37,374	1232	11500	307,733	295,898
7 Days			1229	10000	267,594	257,302
7 Days			1242	11000	294,354	283,032
Average 7 Days					289,894	278,744
14 Days	22/1/2008	37,374	1251	13750	367,942	353,791
14 Days			1249	12750	341,183	328,060
14 Days			1234	13250	354,562	340,925
Average 14 Days					354,562	340,925
21 Days	29/1/2008	37,374	1238	15250	408,081	392,386
21 Days			1253	14500	388,012	373,088
21 Days			1249	14750	394,702	379,521
Average 21 Days					396,932	381,665
28 Days	12/2/2008	37,374	1252	16250	434,841	418,116
28 Days			1261	15500	414,771	398,818
28 Days			1246	15750	421,461	405,251
Average 28 Days					423,691	407,395

Description :



$$\begin{aligned}
 L &= 13,8 \text{ cm} \\
 D &= 6,9 \text{ cm} \\
 \pi &= 3,14 \\
 A &= \frac{1}{4} \times \pi \times D^2 = 37,374 \text{ cm}^2 \\
 \sigma &= \frac{P}{A}
 \end{aligned}$$

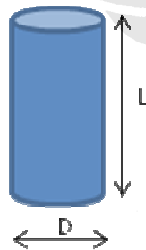


TEST FOR COMPRESSIVE STRENGTH

Code : PA-1.2
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 22 Januari 2008
 Time : 09.40

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete Precast With ADVA 1,2%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
3 Days	25/1/2008	37,37	1299	9750	260,904	250,870
3 Days			1250	9000	240,835	231,572
3 Days			1302	9500	254,215	244,437
Average 3 Days					251,985	242,293
7 Days	1/2/2008	37,37	1274	12500	334,493	321,628
7 Days			1300	11000	294,354	283,032
7 Days			1256	12000	321,113	308,763
Average 7 Days					316,653	304,474
14 Days	8/2/2008	37,37	1325	14000	374,632	360,223
14 Days			1302	13000	347,873	334,493
14 Days			1281	13500	361,252	347,358
Average 14 Days					361,252	347,358
28 Days	22/2/2008	37,37	1302	16500	441,531	424,549
28 Days			1305	15750	421,461	405,251
28 Days			1309	16250	434,841	418,116
Average 28 Days					432,611	415,972

Description :



$L = 13,8 \text{ cm}$
 $D = 6,9 \text{ cm}$
 $\pi = 3,14$
 $A = \frac{1}{4} \times \pi \times D^2 = 37,374 \text{ cm}^2$
 $\sigma = \frac{P}{A}$

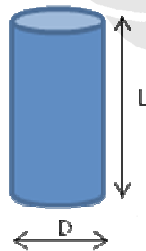


TEST FOR COMPRESSIVE STRENGTH

Code : PA-1.4
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 29 Januari 2008
 Time : 10.05

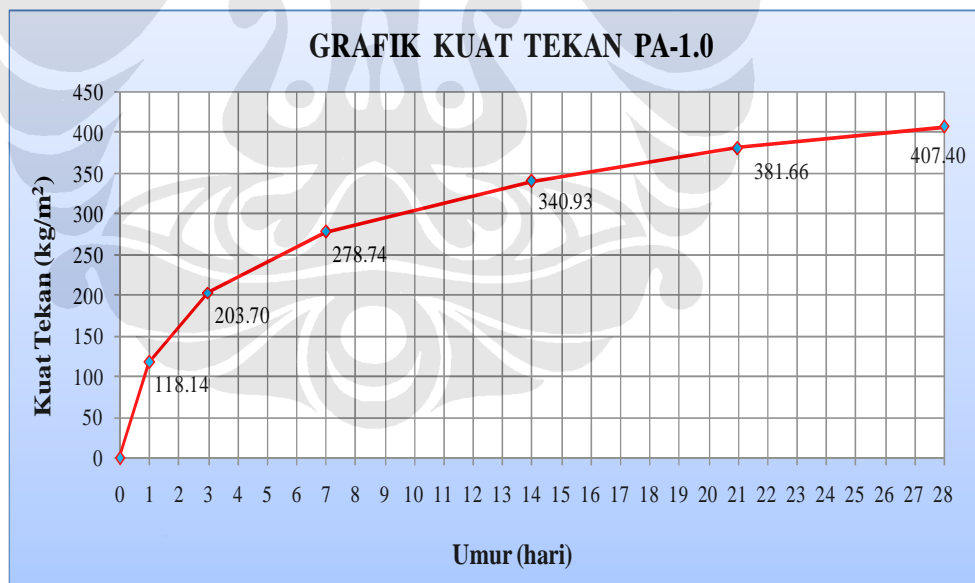
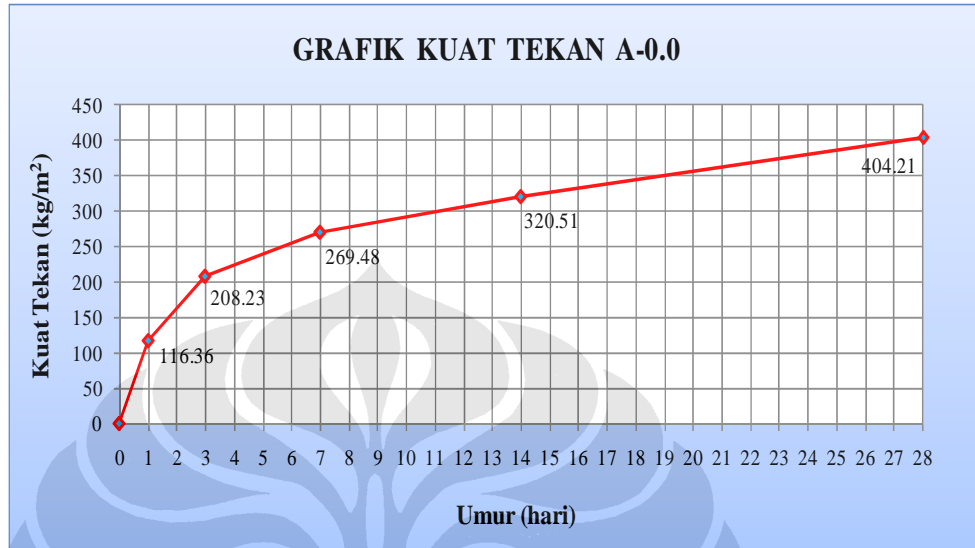
Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete Precast With ADVA 1,4%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	kg	kg	Kg/cm ²	Kg/cm ²
3 Days	1/2/2008	37,37	1281	8750	234,145	225,139
3 Days			1274	7750	207,386	199,409
3 Days			1285	8500	227,455	218,707
Average 3 Days					222,995	214,419
7 Days	8/2/2008	37,37	1277	11500	307,733	295,898
7 Days			1281	9750	260,904	250,870
7 Days			1290	10500	280,974	270,167
Average 7 Days					283,204	272,312
14 Days	15/2/2008	37,37	1299	13500	361,252	347,358
14 Days			1299	12500	334,493	321,628
14 Days			1309	13250	354,562	340,925
Average 14 Days					347,873	334,493
28 Days	29/2/2008	37,37	1290	16000	428,151	411,684
28 Days			1312	15250	408,081	392,386
28 Days			1302	15500	414,771	398,818
Average 28 Days					417,001	400,963

Description :

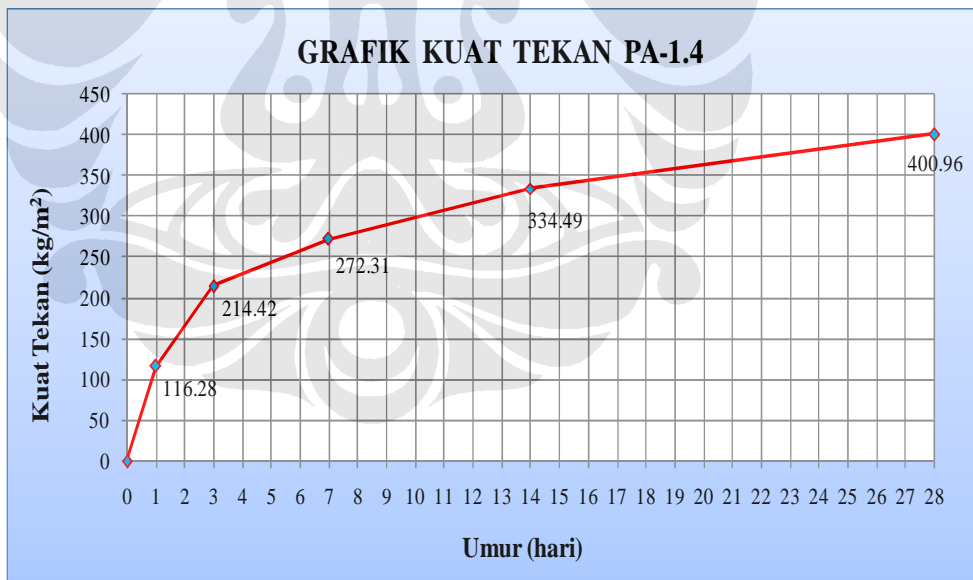
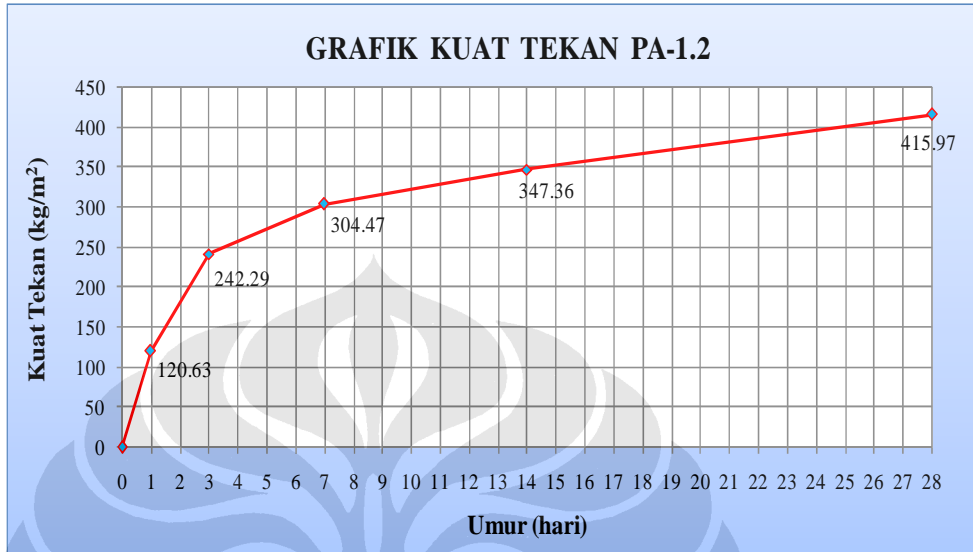


$L = 13,8 \text{ cm}$
 $D = 6,9 \text{ cm}$
 $\pi = 3,14$
 $A = \frac{1}{4} \times \pi \times D^2 = 37,374 \text{ cm}^2$
 $\sigma = \frac{P}{A}$

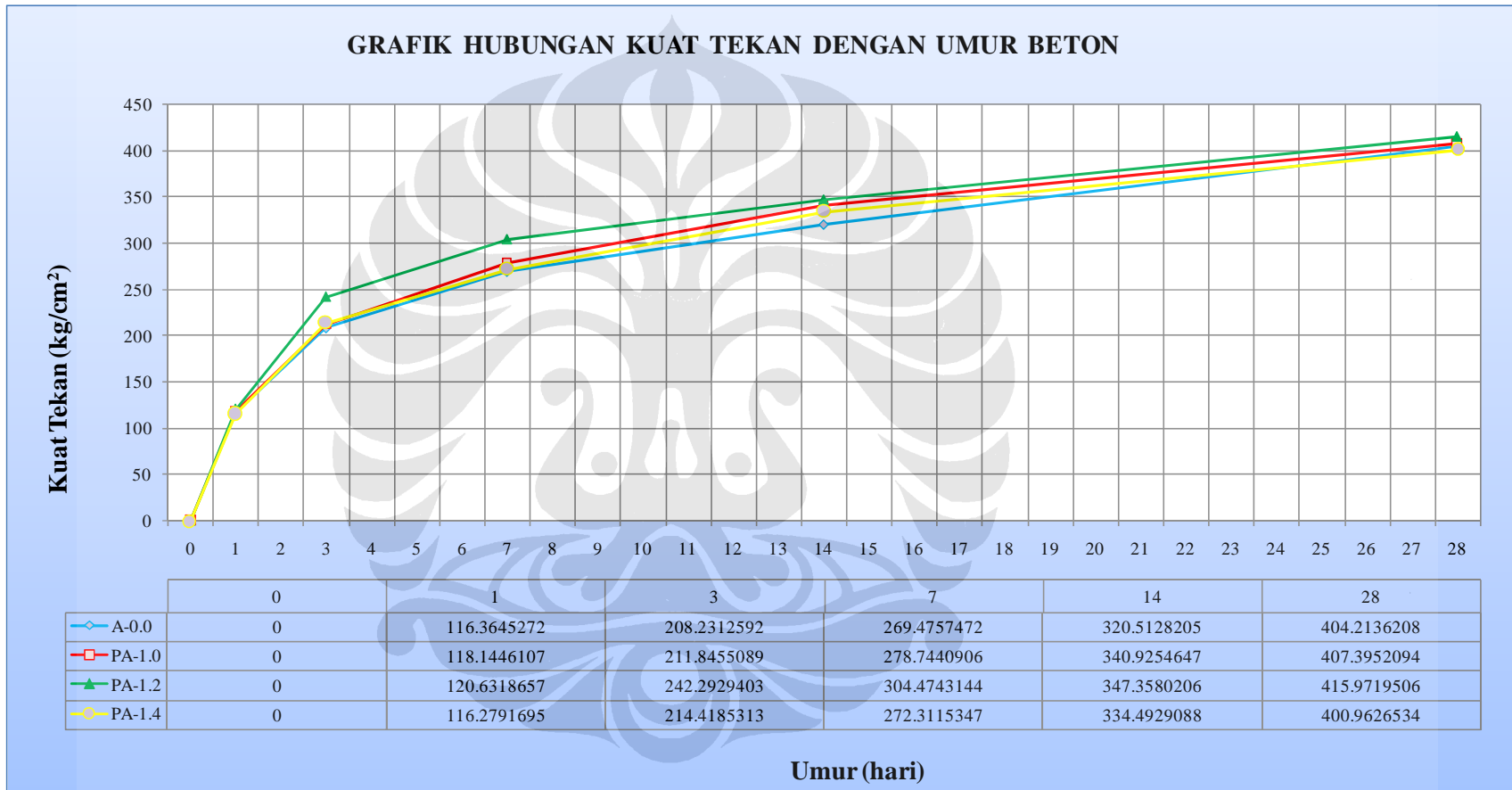
GRAFIK HUBUNGAN KUAT TEKAN DENGAN UMUR BETON



GRAFIK HUBUNGAN KUAT TEKAN DENGAN UMUR BETON

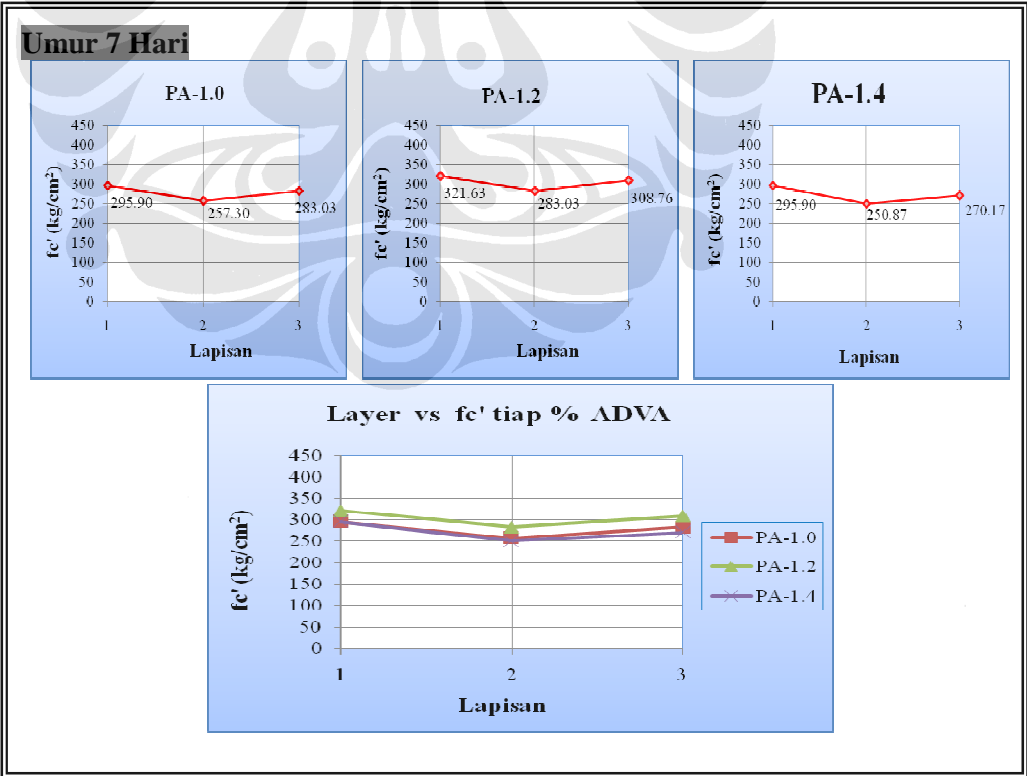
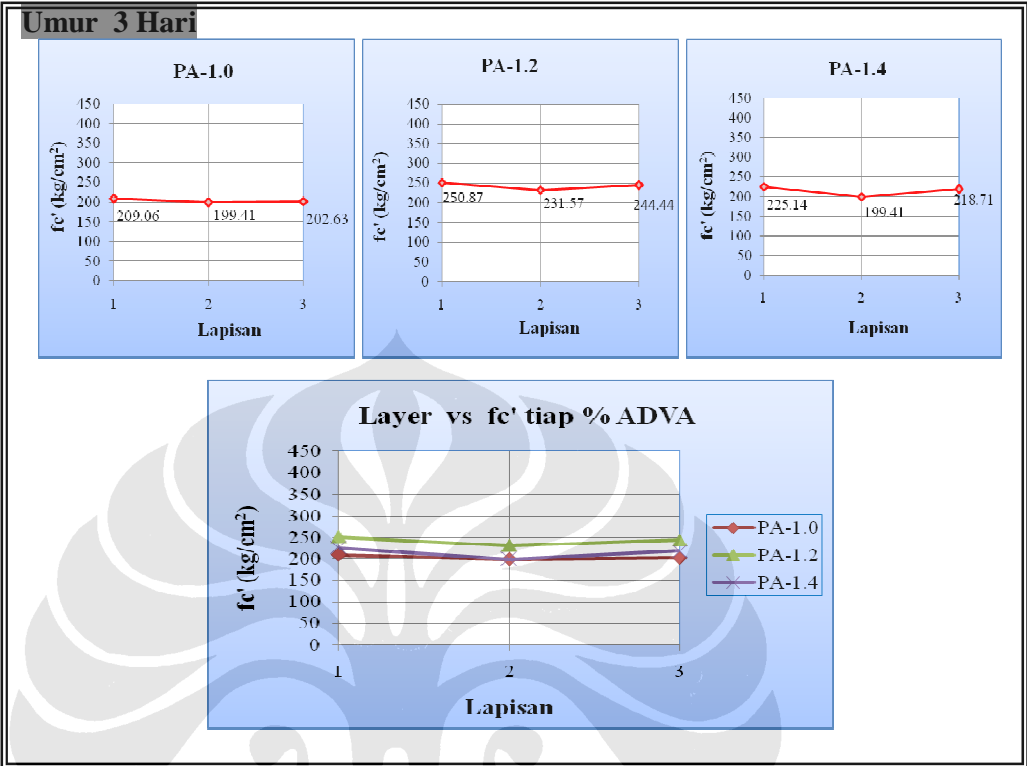


GRAFIK HUBUNGAN KUAT TEKAN DENGAN UMUR BETON

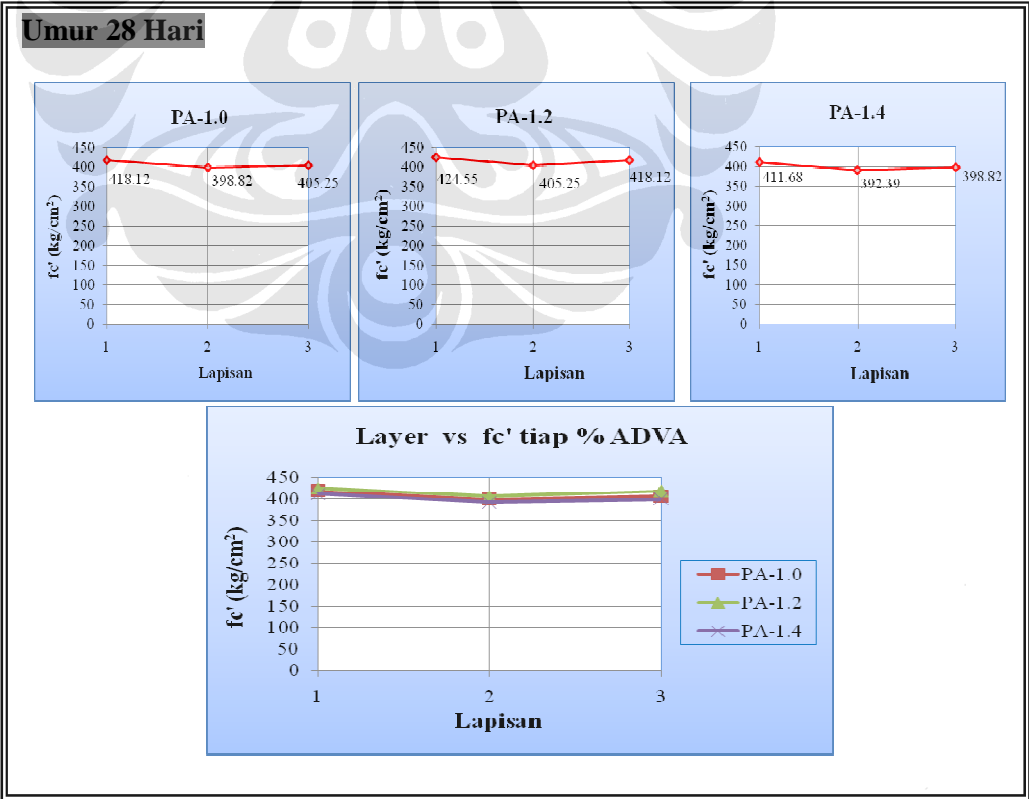
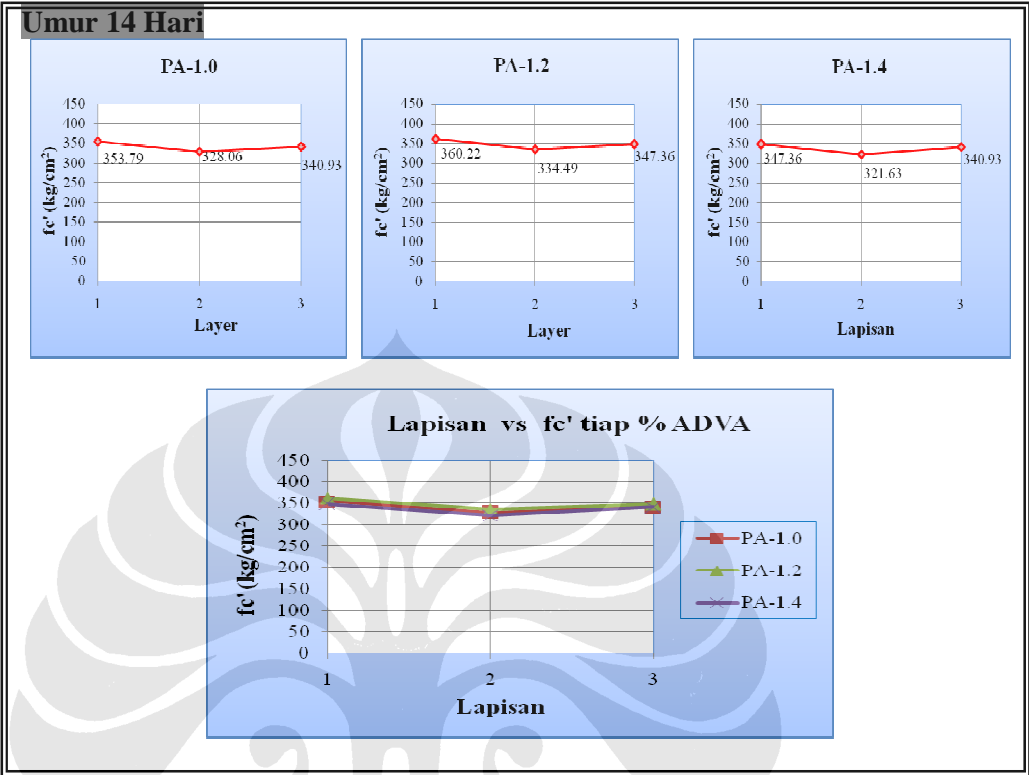




GRAFIK HUBUNGAN KUAT TEKAN DI TIAP LAPISAN



GRAFIK HUBUNGAN KUAT TEKAN DI TIAP LAPISAN





TEST FOR FLEXURAL STRENGTH

Code : A-0.0
Concrete Grade : K- 400 kg/cm² Date Tested : 1 Februari 2008
Tested by : Afifa Cindika Time : 13.25

No	Tgl Test	Umur	Luas Penampang	Bentang L	Dimensi		Beban P	W 1/6.b.h ² cm ³	M 1/6.P.L kg/cm	Tegangan Lentur M/W kg/cm ²
			A		b	h				
			cm ²		cm	cm				
1	29/02/2008	28-1	100	45	10	10	650	166,67	4875	29,25
2		28-2	100	45	10	10	700	166,67	5250	31,50
3		28-3	100	45	10	10	800	166,67	6000	36,00
Rata-Rata								166,67	5375	32,25

Code : A-1.0
Concrete Grade : K- 400 kg/cm² Date Tested : 8 Februari 2008
Tested by : Afifa Cindika Time : 11.12

No	Tgl Test	Umur	Luas Penampang	Bentang L	Dimensi		Beban P	W 1/6.b.h ² cm ³	M 1/6.P.L kg/cm	Tegangan Lentur M/W kg/cm ²
			A		b	h				
			cm ²		cm	cm				
1	07/03/2008	28-1	100	45	10	10	1050	166,67	7875	47,25
2		28-2	100	45	10	10	1100	166,67	8250	49,50
3		28-3	100	45	10	10	1000	166,67	7500	45,00
Rata-Rata								166,67	7875	47,25

Code : A-1.2
Concrete Grade : K- 400 kg/cm² Date Tested : 19 Januari 2008
Tested by : Afifa Cindika Time : 11.05

No	Tgl Test	Umur	Luas Penampang	Bentang L	Dimensi		Beban P	W 1/6.b.h ² cm ³	M 1/6.P.L kg/cm	Tegangan Lentur M/W kg/cm ²
			A		b	h				
			cm ²		cm	cm				
1	16/02/2008	28-1	100	45	10	10	950	166,67	7125	42,75
2		28-2	100	45	10	10	950	166,67	7125	42,75
3		28-3	100	45	10	10	1000	166,67	7500	45,00
Rata-Rata								166,67	7250	43,50

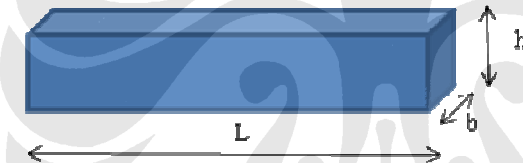


TEST FOR FLEXURAL STRENGTH

Code : A-1.4
Concrete Grade : K- 400 kg/cm²
Tested by : Afifa Cindika
Date Tested : 3 Februari 2008
Time : 10.20

No	Tgl Test	Umur	Luas Penampang A cm ²	Bentang L cm	Dimensi		Beban P kg	W 1/6.b.h ² cm ³	M 1/6.P.L kg/cm	Tegangan Lentur M/W kg/cm ²
					b cm	h cm				
1	02/03/2008	28-1	100	45	10	10	900	166,67	6750	40,50
2		28-2	100	45	10	10	1000	166,67	7500	45,00
3		28-3	100	45	10	10	900	166,67	6750	40,50
Rata-Rata								166,67	7000	42,00

Keterangan :



W = Berat beton
M = Momen Lentur

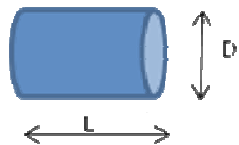


TEST FOR SHEAR STRENGTH

Code : A-0.0
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 7 Januari 2008
 Time : 11.40

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			BETON NORMAL			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			-			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	Kg	Kg	Kg/cm ²	Kg/cm ²
3 Days	10/2/2008	200	3645	6000	30,000	28,846
3 Days			3660	6100	30,500	29,327
3 Days			3650	6000	30,000	28,846
Average 3 Days					30,167	29,006
7 Days	14/2/2008	200	3678	7800	39,000	37,500
7 Days			3673	7800	39,000	37,500
7 Days			3680	8500	42,500	40,865
Average 7 Days					40,167	38,622
28 Days	6/3/2008	200	3733	10500	52,500	50,481
28 Days			3736	11000	55,000	52,885
28 Days			3720	10500	52,500	50,481
Average 28 Days					53,750	51,282

Keterangan :



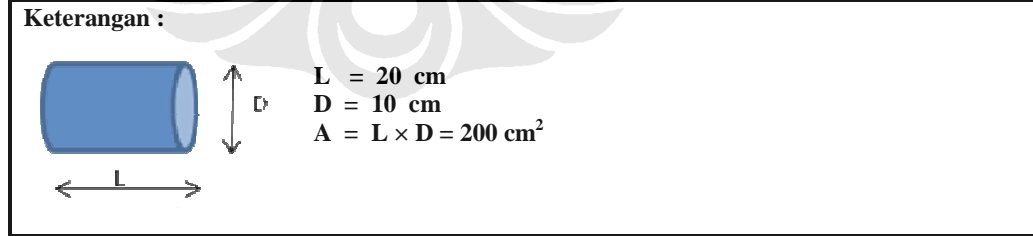
L = 20 cm
D = 10 cm
A = L × D = 200 cm²



TEST FOR SHEAR STRENGTH

Code : A-1.0
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 8 Februari 2008
 Time : 11.12

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete With ADVA 1,0%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	Kg	Kg	Kg/cm ²	Kg/cm ²
3 Days	11/2/2008	200	3658	7500	37,500	36,058
3 Days			3658	8000	40,000	38,462
3 Days			3655	8000	40,000	38,462
Average 3 Days					39,167	37,660
7 Days	15/2/2008	200	3663	9500	47,500	45,673
7 Days			3665	9600	48,000	46,154
7 Days			3675	9800	49,000	47,115
Average 7 Days					48,167	46,314
28 Days	7/3/2008	200	3713	11500	57,500	55,288
28 Days			3725	12000	60,000	57,692
28 Days			3751	13000	65,000	62,500
Average 28 Days					60,833	58,494

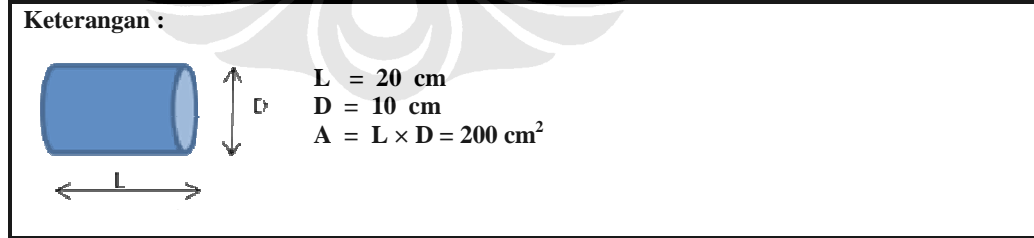




TEST FOR SHEAR STRENGTH

Code : A-1.2
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 22 Januari 2008
 Time : 10.40

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete With ADVA 1,2%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	Kg	Kg	Kg/cm ²	Kg/cm ²
3 Days	25/1/2008	200	3660	7500	37,500	36,058
3 Days			3656	7000	35,000	33,654
3 Days			3652	6500	32,500	31,250
Average 3 Days					35,000	33,654
7 Days	29/1/2008	200	3666	9000	45,000	43,269
7 Days			3706	9200	46,000	44,231
7 Days			3733	9500	47,500	45,673
Average 7 Days					46,167	44,391
28 Days	19/2/2008	200	3766	11000	55,000	52,885
28 Days			3786	11500	57,500	55,288
28 Days			3760	11000	55,000	52,885
Average 28 Days					55,833	53,686

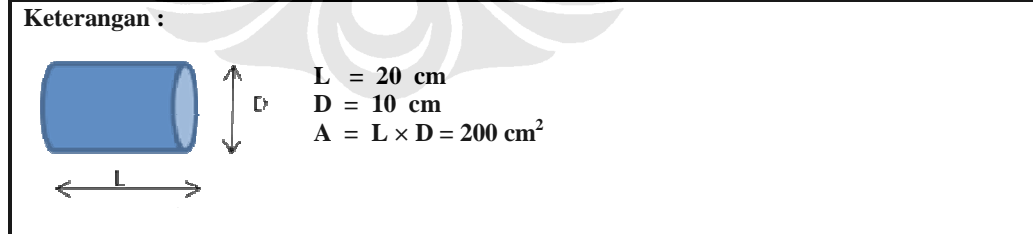




TEST FOR SHEAR STRENGTH

Code : A-1.4
 Concrete Grade : K- 400 kg/cm²
 Tested by : Afifa Cindika
 Date Tested : 30 Januari 2008
 Time : 10.55

Project			SKRIPSI SELF COMPACTING CONCRETE			
Test Mix Series			Concrete With ADVA 1,4%			
Aggregate Proportion			40 % Split 1 + 60 % Split 2			
Superplasticizer			ADVA 181			
Age	DATE	Section Area	Weight	Load	Strength Ø3"	Conversion Strength Ø6"
	Tgl/Bln/Thn	cm ²	Kg	Kg	Kg/cm ²	Kg/cm ²
3 Days	2/2/2008	200	3700	6500	32,500	31,250
3 Days			3669	6200	31,000	29,808
3 Days			3665	6000	30,000	28,846
Average 3 Days					31,167	29,968
7 Days	6/2/2008	200	3705	8950	44,750	43,029
7 Days			3719	9000	45,000	43,269
7 Days			3720	9000	45,000	43,269
Average 7 Days					44,917	43,189
28 Days	27/2/2008	200	3727	10500	52,500	50,481
28 Days			3735	11000	55,000	52,885
28 Days			3730	11000	55,000	52,885
Average 28 Days					54,167	52,083



PENGUJIAN SLUMP TEST, SLUMP FLOW DAN L-BOX

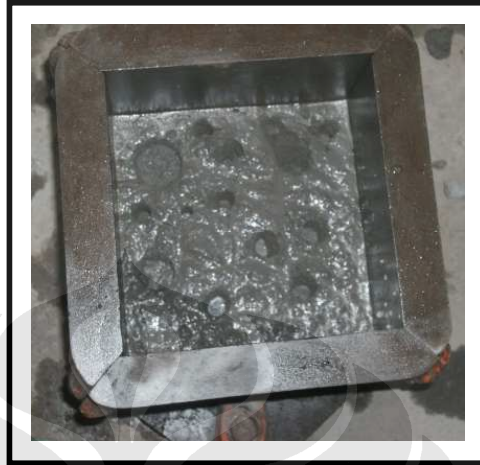


Gambar 1. Slump Test Beton Normal dan Slump Flow Beton SCC

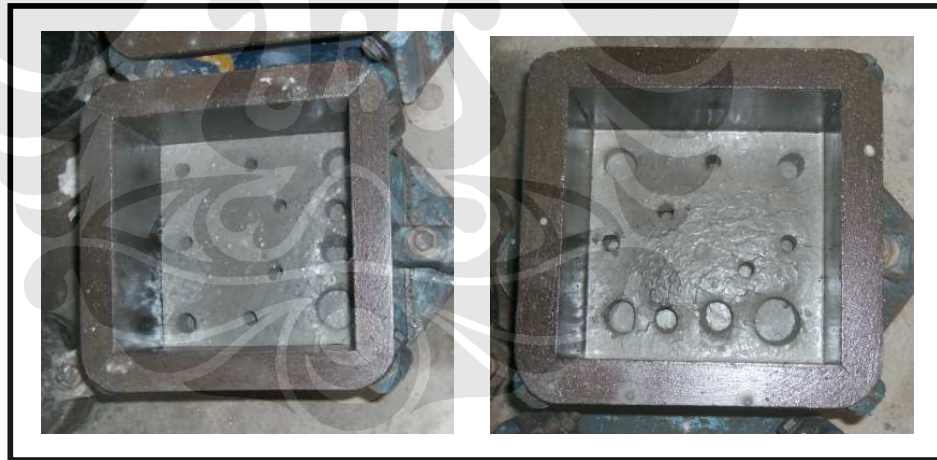


Gambar 2 Pengujian L-Box

PENGUJIAN SETTING TIME



Gambar 3. Beton Normal



Gambar 4. Setting Time Beton SCC

CORE DRILL



Gambar 5. Pengeboran dengan alat Core Drill



Gambar 6. Sampel Core drill sebelum dan setelah dicaping



Gambar 7. Proses dan Hasil pengujian kuat tekan pada sample core drill

PENGUJIAN KUAT TEKAN



Gambar 8. Alat Pengujian Kuat tekan



Gambar 9. Proses pengujian kuat tekan dan sample hasil pengujian.

PENGUJIAN KUAT LENTUR



Gambar 10. Sampel Balok dan Alat pengujian Kuat Lentur



Gambar 11. Proses pengujian Kuat Lentur



Gambar 12. Sampel Hasil Pengujian Kuat lentur

PENGUJIAN KUAT GESER



Gambar 13. Sampel silinder dan Alat Pengujian Kuat Geser



Gambar 14. Proses pengujian Kuat geser



Gambar 15. Sampel Hasil Pengujian Kuat Geser