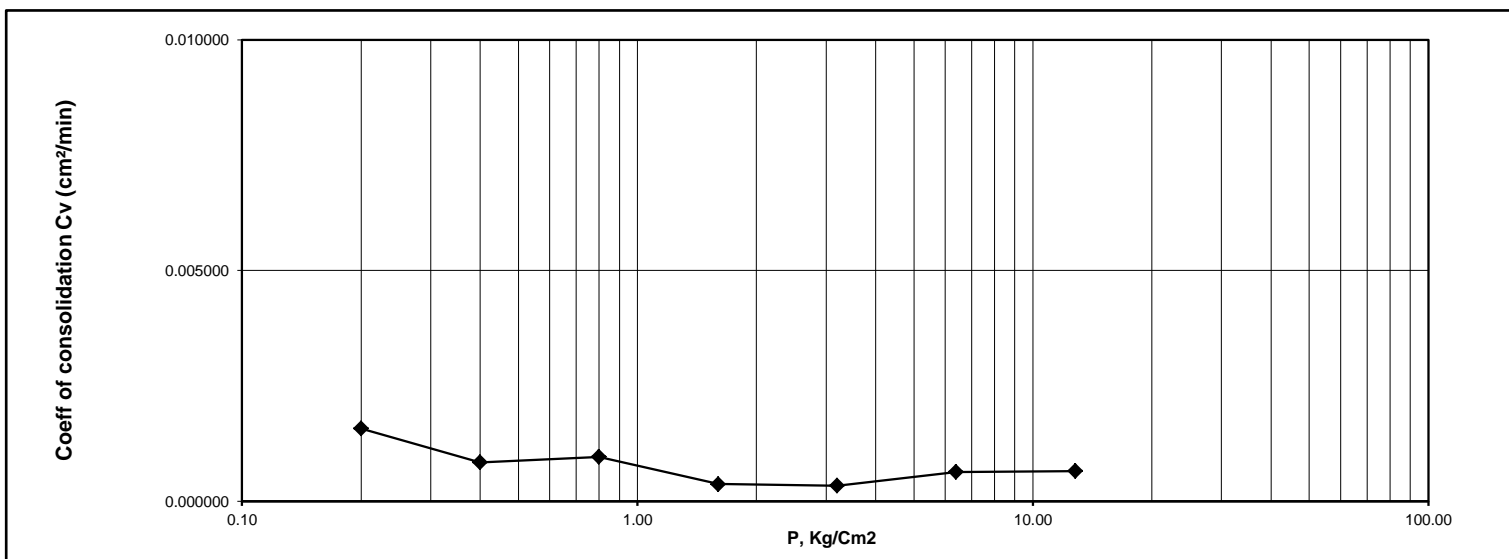
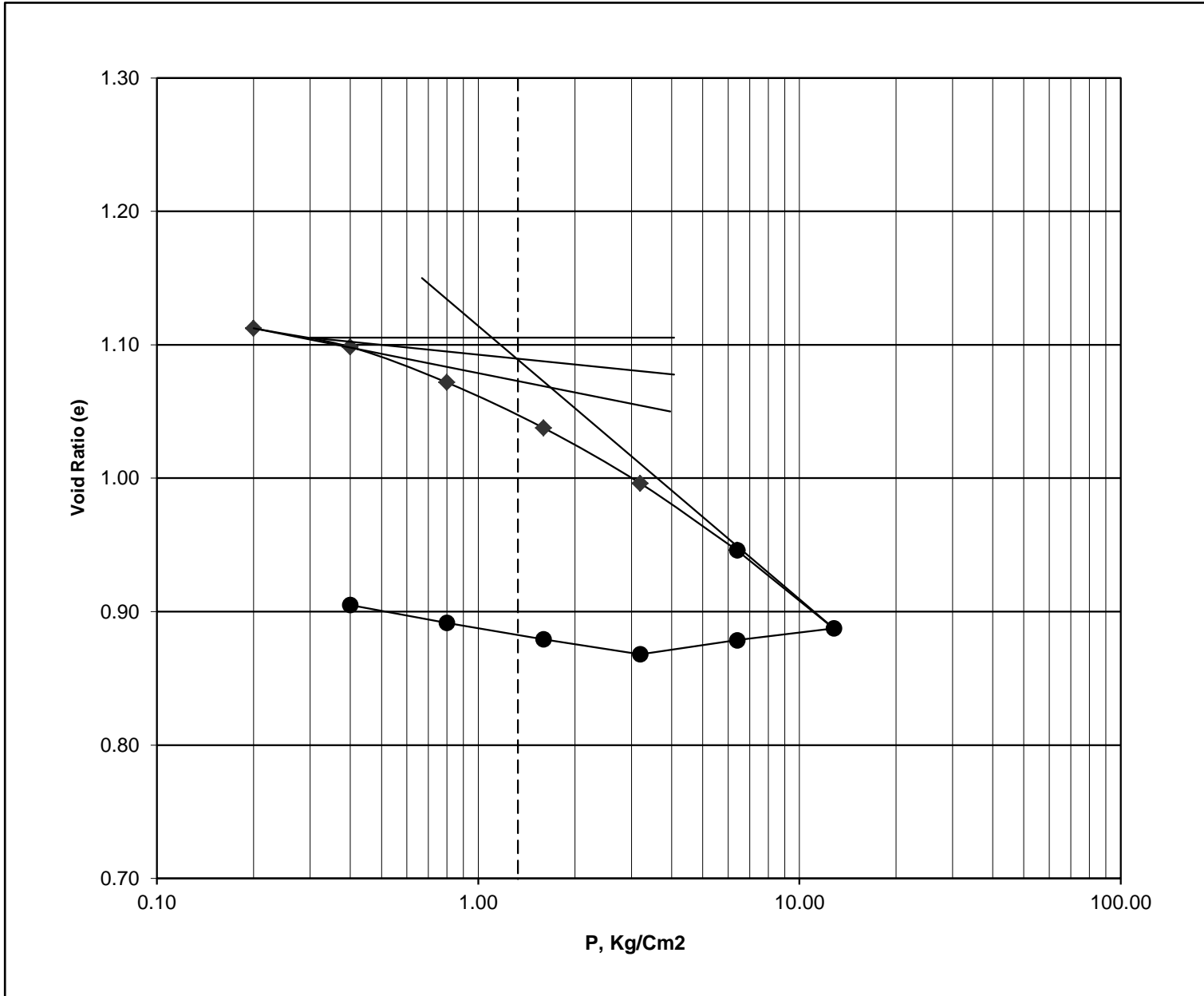


**CONSOLIDATION TEST (Computation sheet for Mv, Cv and k)**

Project		Penyelidikan Geoteknik										
Sample No.		BH-2							Date of testing		September 2015	
Depth of Sample		14.50 - 15.00 Meter							Location		Kab. Demak	
Type of Soil	Lempung		Ring area	A (Cm)	28.26	Initial water content	Wo (%)	44.18	Compression			
Specific gravity	Gs	2.52	Initial height of soil	ho (Cm)	2.00	Initial Volumetric ratio	fo	2.122	Index	<b>Cc</b>	<b>0.5518</b>	
Liquid limit	Wl (%)	59	Weight of dry soil	Wd (g)	67.12	Initial Void ratio	eo	1.122				
Plastic limit	Wp (%)	37	Height of solids	Hs (Cm)	0.942	Initial Degree of saturation	Sro (%)					
Lood step	Applied pressure		Compression for lood	Void ratio	Coef of ratio volume	t90 min	h	h	Primary Compression	cv	Coef of Permeability	
	P kg/Cm <sup>2</sup>	Δ P kg/Cm <sup>2</sup>	incr d x 10 <sup>-3</sup> Cm	e h/Hs - 1	Compr Mv Cm <sup>2</sup> /kg	t50 min	(Cm)	(Cm)	ratio r Δd/ Δd'	r 0.848 (h/2) <sup>2</sup> /t90	k Cm/min	
0	-	0		1.122			2.000					
1	0.20	0.20	9.12	1.112	0.023	784.00	1.991	1.995	1.468	0.001580	3.61E-08	
2	0.40	0.20	13.23	1.098	0.033	676.00	1.978	1.984	0.686	0.000847	2.82E-08	
3	0.80	0.40	25.12	1.072	0.032	576.00	1.953	1.965	0.677	0.000963	3.08E-08	
4	1.60	0.80	32.12	1.038	0.021	676.00	1.920	1.936	0.318	0.000374	7.75E-09	
5	3.20	1.60	39.13	0.996	0.013	625.00	1.881	1.901	0.275	0.000337	4.33E-09	
6	6.40	3.20	47.25	0.946	0.008	576.00	1.834	1.858	0.500	0.000635	5.05E-09	
7	12.80	6.40	55.14	0.887	0.005	529.00	1.779	1.806	0.504	0.000660	3.15E-09	
8	6.40		-8.36	0.879			1.771					
9	3.20		-9.87	0.868			1.761					
10	1.60		-10.45	0.879			1.771					
11	0.80		-11.61	0.891			1.783					
12	0.40		-12.72	0.905			1.795					

## CONSOLIDATION TEST RESULT

Project	Penyelidikan Geoteknik
Sample No.	BH-2
Depth of Sample	14.50 - 15.00 Meter



**RESULT OF TEST :**

**$C_c$  = 0.551757**

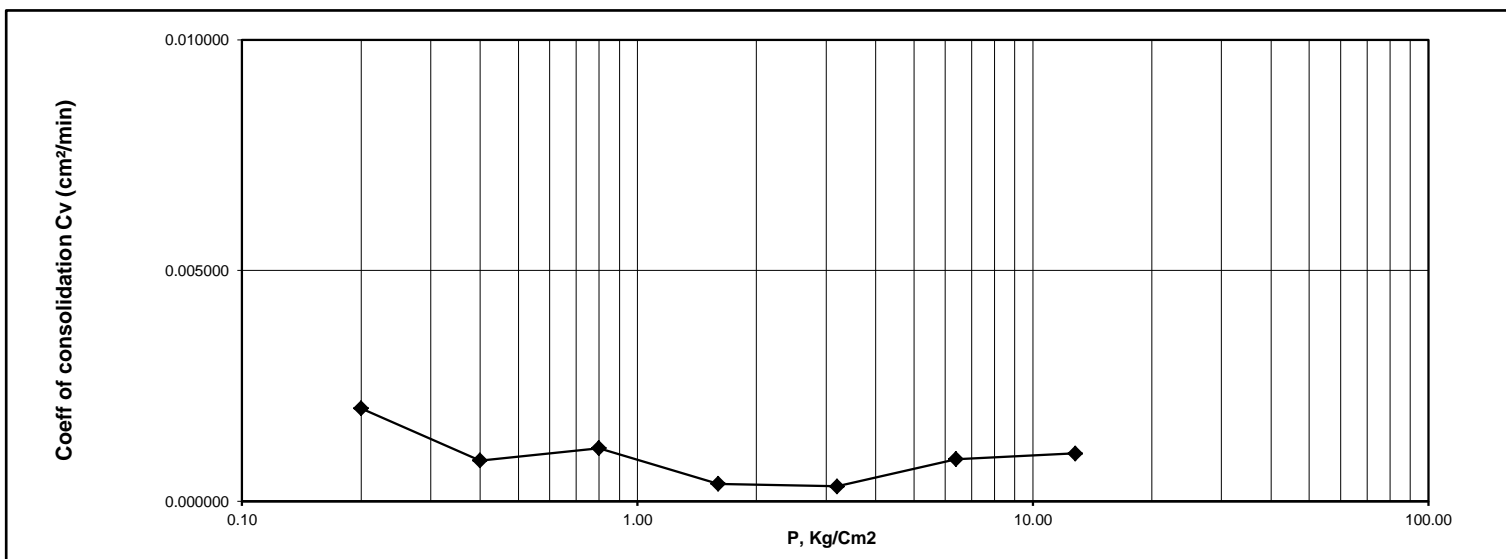
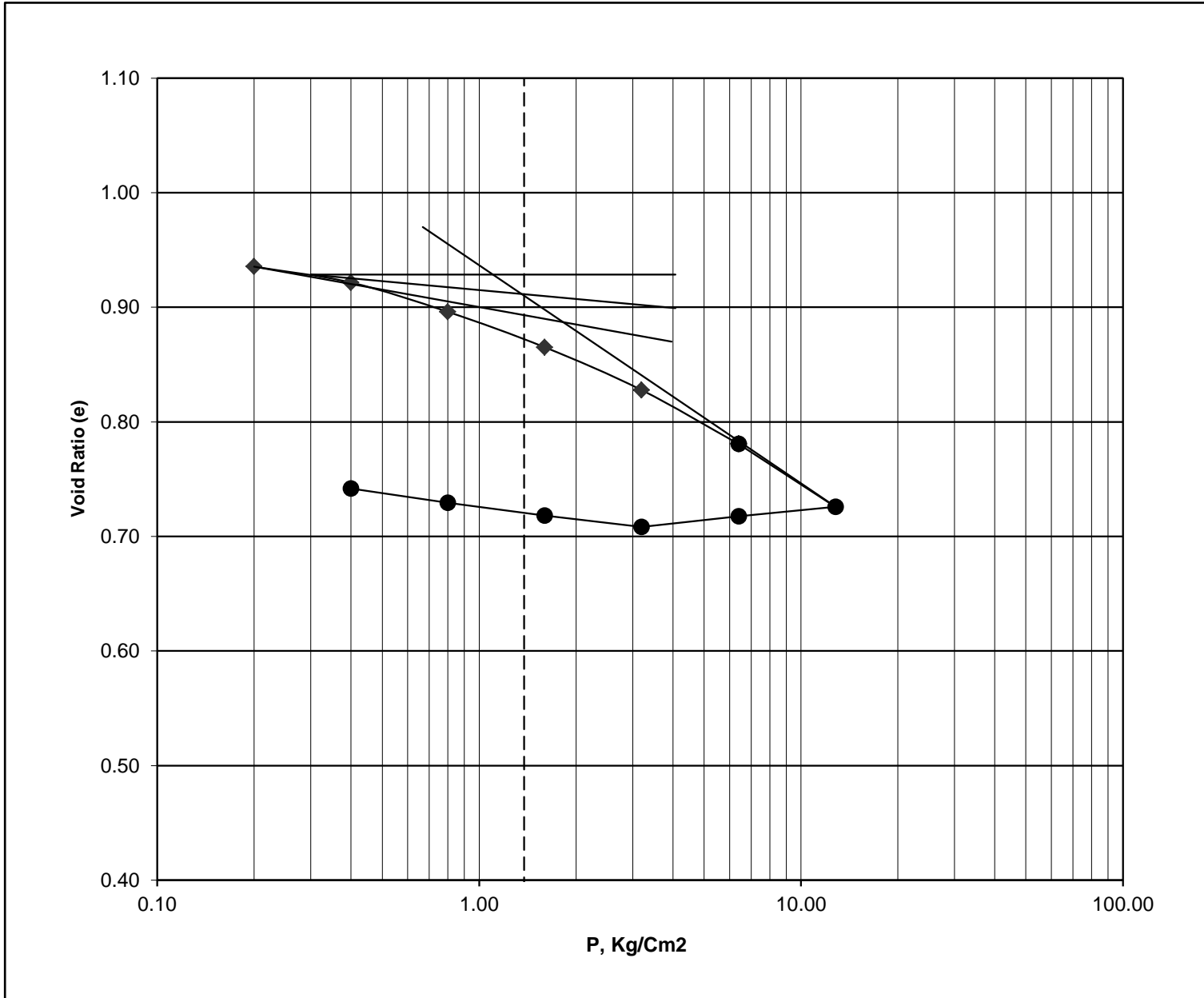
**$C_v$  = 0.000771 Cm<sup>2</sup>/Min**

**CONSOLIDATION TEST (Computation sheet for Mv, Cv and k)**

Project		Penyelidikan Geoteknik										
Sample No.		BH-2							Date of testing		September 2016	
Depth of Sample		7.50 - 8.00 Meter							Location		Kab. Demak	
Type of Soil	Lempung		Ring area	A (Cm)	28.26	Initial water content	Wo (%)	43.2	Compression			
Specific gravity	Gs	2.54	Initial height of soil	ho (Cm)	2.00	Initial Volumetric ratio	fo	1.944	Index	<b>Cc</b>	<b>0.5211</b>	
Liquid limit	Wl (%)	60	Weight of dry soil	Wd (g)	73.83	Initial Void ratio	eo	0.944				
Plastic limit	Wp (%)	40	Height of solids	Hs (Cm)	1.029	Initial Degree of saturation	Sro (%)					
Lood step	Applied pressure P kg/Cm <sup>2</sup> Δ P kg/Cm <sup>2</sup>		Compression for lood incr d x 10 <sup>-3</sup> Cm	Void ratio e h/Hs - 1	Coef of ratio volume Compr Mv Cm <sup>2</sup> /kg	t90 min t50 min	h (Cm)	h (Cm)	Primary Compression ratio r Δd/ Δd'	cv r 0.848 (h/2) <sup>2</sup> /t90	Coef of Permeability k Cm/min	
0	-	0		0.944			2.000					
1	0.20	0.20	9.28	0.935	0.023	625.00	1.991	1.995	1.494	0.002017	4.69E-08	
2	0.40	0.20	14.29	0.922	0.036	625.00	1.976	1.984	0.662	0.000884	3.18E-08	
3	0.80	0.40	26.32	0.896	0.034	441.00	1.950	1.963	0.621	0.001151	3.86E-08	
4	1.60	0.80	31.79	0.865	0.021	729.00	1.918	1.934	0.347	0.000377	7.75E-09	
5	3.20	1.60	38.43	0.828	0.013	529.00	1.880	1.899	0.225	0.000325	4.11E-09	
6	6.40	3.20	48.35	0.781	0.008	361.00	1.832	1.856	0.453	0.000915	7.45E-09	
7	12.80	6.40	56.29	0.726	0.005	324.00	1.775	1.803	0.488	0.001038	5.06E-09	
8	6.40		-8.56	0.718			1.767					
9	3.20		-9.67	0.708			1.757					
10	1.60		-10.15	0.718			1.767					
11	0.80		-11.65	0.729			1.779					
12	0.40		-12.62	0.742			1.791					

## CONSOLIDATION TEST RESULT

Project	Penyelidikan Geoteknik
Sample No.	BH-2
Depth of Sample	7.50 - 8.00 Meter



**RESULT OF TEST :**

**Cc = 0.521055**

**Cv = 0.000958 Cm<sup>2</sup>/Min**



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA**  
**STASIUN METEOROLOGI AHMAD YANI SEMARANG**  
**DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2006**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	7	360	17	330	19	320	10	350	14	200	12	110	11	100	12	120	15	340	15	310	15	360	12	330
2	10	330	13	330	15	330	8	350	8	90	8	310	11	100	18	100	13	140	12	300	14	10	12	330
3	21	330	15	340	10	330	10	350	10	80	12	340	15	100	17	110	15	360	17	130	16	10	12	330
4	10	30	12	320	11	340	16	310	12	200	10	130	12	100	13	130	13	350	16	350	11	110	13	330
5	8	350	10	350	10	330	15	320	18	260	8	110	12	130	15	100	11	340	18	10	14	350	12	350
6	8	340	15	350	18	320	14	330	10	10	15	110	10	320	12	120	17	360	13	90	15	320	14	330
7	15	320	12	360	13	320	14	240	8	100	8	120	12	330	11	360	18	130	13	330	12	350	12	350
8	10	10	11	320	14	340	13	350	10	10	11	130	11	110	12	350	14	100	14	350	15	350	12	160
9	12	320	14	310	9	360	9	350	11	350	12	160	15	100	12	360	20	120	13	50	15	350	8	340
10	10	330	10	320	10	320	11	350	9	120	11	330	12	110	10	100	15	100	19	330	12	340	14	330
11	10	20	9	350	12	320	16	350	10	330	12	120	11	340	9	150	17	350	15	350	12	340	10	160
12	11	340	13	350	10	350	9	190	9	340	9	340	15	90	12	110	12	110	15	30	14	40	12	150
13	11	200	12	360	10	330	17	60	8	330	12	40	10	150	9	80	15	350	14	20	16	10	23	20
14	10	300	10	340	11	330	30	360	8	100	10	120	14	110	12	90	13	350	15	320	12	20	12	20
15	9	35	11	320	18	310	9	340	8	80	12	100	13	120	18	100	12	310	15	10	16	350	15	350
16	15	310	15	320	18	330	10	330	12	120	12	30	14	130	12	110	15	10	14	340	15	40	9	350
17	14	310	14	90	14	330	12	330	13	90	12	10	13	350	15	110	16	120	15	10	12	350	9	340
18	13	320	12	320	19	340	9	350	12	100	12	90	16	70	12	20	18	350	13	350	14	40	13	320
19	12	310	20	330	12	320	10	350	10	330	12	130	11	350	14	330	18	120	13	350	14	120	9	340
20	17	300	16	220	13	300	8	100	10	20	12	120	12	330	13	350	15	110	15	90	14	50	11	330
21	18	320	14	320	12	350	10	320	9	340	11	30	14	340	16	10	14	340	12	340	18	350	14	240
22	21	330	9	210	18	320	10	360	7	350	14	110	15	10	12	120	12	330	17	10	14	350	11	350
23	26	310	14	330	12	310	12	350	10	340	10	340	13	110	17	330	15	110	16	360	10	130	13	240
24	20	310	16	310	13	320	12	210	12	40	13	130	14	10	14	360	15	340	18	30	16	10	10	360
25	24	300	12	300	13	300	11	10	12	340	9	340	12	100	15	100	17	340	20	350	13	360	17	30
26	15	310	20	310	14	310	8	340	12	10	12	110	13	110	17	130	15	350	12	350	12	360	13	330
27	12	330	22	330	15	330	10	350	10	350	12	340	15	340	12	340	15	340	16	10	10	360	12	20
28	12	340	14	340	17	340	11	310	8	130	11	340	14	10	14	10	13	340	15	320	9	340	15	330
29	15	320			14	300	8	350	9	10	11	70	12	340	17	90	18	80	15	30	14	350	17	310
30	14	330			10	340	9	160	11	20	15	110	12	340	14	350	12	340	13	350	14	20	15	300
31	14	320			14	310			12	10			13	280	15	100			19	30			14	290

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA**  
**STASIUN METEOROLOGI AHMAD YANI SEMARANG**  
**DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2007**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	18	315	20	315	12	360	10	360	12	90	14	90	9	360	13	90	13	90	17	360	12	315	12	360
2	13	315	20	315	23	315	10	360	12	360	13	360	12	90	18	135	15	360	14	360	8	180	12	315
3	18	315	16	315	18	315	10	360	12	360	17	135	11	90	10	45	14	315	16	360	10	270	11	315
4	12	315	15	315	18	315	10	315	11	135	15	135	11	135	12	90	10	315	17	90	13	270	12	315
5	10	360	19	315	18	315	13	90	12	360	14	90	13	315	11	135	13	315	11	360	10	315	11	315
6	10	360	19	315	17	315	16	90	10	360	12	360	10	360	17	90	16	360	17	360	10	315	12	270
7	10	360	16	315	20	315	15	360	15	90	23	45	8	315	12	90	15	360	15	360	12	315	10	315
8	12	360	13	315	21	315	15	360	12	90	15	135	16	90	11	90	16	90	22	180	10	360	12	360
9	12	360	14	315	19	315	13	135	14	135	10	135	18	135	13	90	11	360	15	315	13	360	10	360
10	14	360	17	315	19	315	12	135	12	90	12	180	14	135	12	90	14	360	12	315	25	45	8	360
11	10	360	15	360	18	315	12	315	15	135	13	135	14	135	16	90	12	360	12	315	16	360	10	315
12	11	360	12	315	11	360	12	315	13	90	12	135	13	135	14	90	12	315	13	360	20	180	10	360
13	12	315	12	315	15	360	13	315	12	135	12	135	13	360	11	315	12	90	18	90	13	360	16	360
14	14	315	13	360	8	360	10	270	11	135	12	135	14	90	16	135	12	360	21	45	20	90	14	360
15	12	360	13	360	12	360	10	360	13	135	9	315	14	90	13	315	10	315	17	45	10	315	11	360
16	10	360	12	360	10	360	10	315	7	135	11	315	14	90	15	135	14	315	13	315	10	315	14	315
17	10	360	10	360	9	360	11	360	15	180	12	45	16	90	10	315	14	315	13	315	8	360	14	315
18	12	315	12	360	13	315	11	360	12	360	8	360	15	90	16	90	15	135	13	360	10	360	17	315
19	12	315	14	315	15	315	9	360	11	45	10	315	15	90	13	90	18	360	12	360	10	315	8	315
20	13	360	17	315	11	315	13	360	11	90	11	360	16	90	21	180	15	90	11	135	9	315	8	315
21	15	315	15	315	16	315	8	360	11	90	10	315	18	90	11	315	16	90	13	315	10	315	15	315
22	15	360	14	360	15	315	10	360	14	135	9	315	15	135	13	360	14	90	12	90	8	315	12	315
23	16	315	12	360	9	225	10	360	20	135	9	135	13	90	12	315	11	90	12	360	13	315	12	270
24	11	360	12	315	8	360	8	180	11	90	10	315	12	90	12	360	14	90	13	315	8	315	15	315
25	11	360	16	315	8	360	11	360	15	135	10	315	9	90	10	315	15	135	12	315	12	360	18	270
26	10	360	14	225	15	360	13	360	10	90	13	90	11	360	10	360	14	360	15	315	11	315	12	270
27	12	360	16	315	9	360	14	360	10	90	12	180	11	315	15	315	14	360	12	360	12	315	19	270
28	12	360	12	360	11	315	12	360	10	90	12	360	12	90	13	90	14	360	12	360	12	315	24	270
29	10	270			12	360	11	360	10	90	12	360	14	90	14	90	13	360	12	360	12	315	11	180
30	16	315			10	360	11	360	13	90	11	315	10	360	15	90	10	360	7	315	11	360	20	315
31	19	315			12	360			13	135			12	90	16	360			14	360			15	315

Mengetahui :  
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 Stasiun Meteorologi A. Yani Semarang

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**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA**  
**STASIUN METEOROLOGI AHMAD YANI SEMARANG**  
**DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2008**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	17	270	17	315	9	315	8	270	8	360	10	360	12	90	18	360	14	360	17	315	14	360	9	360
2	17	315	20	315	12	315	11	360	11	90	11	90	11	90	15	360	15	90	13	360	17	90	12	360
3	17	315	16	315	10	315	11	315	10	360	12	315	11	90	14	360	15	315	15	360	12	360	10	360
4	13	270	16	315	10	360	12	315	12	360	10	315	10	315	14	315	14	315	12	315	20	90	12	360
5	16	315	14	315	8	360	8	360	10	360	11	315	16	90	14	90	13	315	14	315	14	360	12	315
6	12	315	20	315	8	315	12	315	15	180	10	315	12	90	16	315	11	315	14	360	11	360	10	315
7	14	315	30	270	14	90	10	360	15	90	9	315	12	90	16	90	10	315	12	315	10	360	8	360
8	11	315	22	315	15	315	10	360	11	90	13	90	20	90	18	90	10	315	17	315	10	360	10	360
9	10	315	27	315	13	315	14	360	12	135	10	315	16	90	15	90	17	90	11	135	9	135	12	90
10	10	315	30	315	9	315	13	90	11	135	9	315	14	45	12	90	14	180	15	135	12	45	10	360
11	10	315	22	315	14	315	14	45	10	315	9	135	11	135	11	90	12	90	22	135	11	360	9	315
12	14	315	20	315	15	360	15	45	10	90	12	90	12	360	15	315	15	90	25	360	13	315	9	225
13	14	315	18	315	15	135	13	90	10	90	14	90	13	90	16	360	17	315	25	360	11	315	13	315
14	27	315	15	270	12	360	8	90	13	135	16	45	12	90	14	360	13	360	11	315	12	315	10	315
15	16	315	12	270	11	360	11	135	12	90	8	135	11	315	12	315	15	315	13	315	10	315	8	270
16	17	315	18	315	13	315	14	360	10	90	12	315	12	315	15	90	13	315	14	315	9	360	7	360
17	15	315	17	315	12	315	10	360	11	90	14	315	17	90	12	315	12	360	16	135	13	315	16	315
18	16	315	19	315	12	315	12	360	13	135	12	90	12	90	14	90	14	360	17	135	12	315	13	315
19	10	360	15	270	12	315	10	180	13	135	10	360	12	315	15	90	18	90	21	135	10	360	10	315
20	12	315	18	315	10	360	12	180	11	90	12	360	10	90	13	360	18	315	12	315	11	270	7	90
21	11	360	28	315	15	315	8	90	13	135	13	90	13	315	13	360	12	315	15	90	9	315	13	315
22	10	315	18	315	15	360	18	315	12	90	12	135	14	315	16	360	15	360	16	315	10	315	12	315
23	9	360	15	315	15	270	9	315	11	90	14	90	11	360	11	315	14	360	14	315	9	360	20	315
24	12	360	17	270	9	315	15	360	10	135	15	90	11	360	17	360	13	315	10	315	16	315	10	360
25	14	360	24	270	11	315	11	360	10	90	15	90	12	315	14	315	15	90	13	135	8	360	9	315
26	12	360	16	270	18	315	8	360	12	90	17	90	10	360	13	360	21	315	10	315	10	180	13	315
27	10	315	13	270	15	315	13	360	12	135	12	90	9	180	15	360	15	315	9	360	8	315	14	315
28	10	315	13	315	12	315	11	90	12	90	10	360	10	90	17	360	17	90	8	315	12	360	12	315
29	13	315			12	315	12	90	13	90	12	315	13	360	11	315	11	135	8	135	12	360	13	270
30	16	315			14	315	10	315	15	90	12	90	17	90	14	360	15	360	12	315	9	360	8	315
31	20	315			7	360			13	90			14	90	15	315			12	315			12	315

Mengetahui :  
 Kepala Seksi Observasi dan Informasi  
 Stasiun Meteorologi A. Yani Semarang

SUKARNO  
 NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA  
STASIUN METEOROLOGI AHMAD YANI SEMARANG  
DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2009**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	15	315	14	320	14	330	12	360	10	10	14	130	12	110	11	20	12	10	12	310	12	20	11	320
2	8	360	17	270	15	350	11	360	11	110	14	120	15	230	10	10	10	350	10	360	13	340	12	340
3	11	315	17	310	13	320	11	350	11	360	12	140	10	360	13	20	13	340	14	20	15	10	12	350
4	12	315	15	310	13	10	13	360	13	30	10	100	10	350	13	130	15	340	10	360	14	100	12	350
5	10	360	20	320	14	340	12	10	9	290	18	180	13	130	14	10	15	340	13	100	17	360	13	20
6	14	315	18	300	12	20	8	160	11	330	11	80	16	110	12	20	12	110	13	320	14	340	27	330
7	9	315	22	310	8	350	14	40	10	130	12	130	10	320	12	330	10	350	14	360	14	360	10	330
8	14	315	17	320	9	340	13	20	10	110	19	350	11	40	13	50	12	130	16	350	13	330	11	330
9	17	315	9	310	12	330	19	110	12	110	11	120	8	290	13	20	14	10	14	10	10	140	14	70
10	12	270	14	330	12	310	14	120	10	150	9	20	12	150	13	120	13	30	10	360	9	100	9	30
11	16	315	12	320	10	310	11	120	14	70	11	140	11	150	15	330	15	360	12	360	14	60	12	340
12	18	315	14	340	10	360	10	340	8	50	12	120	18	180	14	10	15	100	16	110	11	320	13	330
13	15	315	10	320	10	360	10	360	24	190	13	30	12	50	13	90	20	100	16	30	12	310	14	330
14	17	315	8	350	11	340	10	340	10	330	10	30	13	320	11	330	16	360	16	360	13	130	10	360
15	16	315	8	360	10	360	11	340	23	300	10	20	12	30	12	30	14	90	15	90	16	330	18	330
16	17	315	22	340	19	360	13	340	15	320	12	340	11	10	15	50	13	120	12	320	13	60	13	250
17	17	315	20	330	13	360	9	140	9	10	10	130	13	120	15	80	14	350	11	350	8	350	11	340
18	15	315	14	310	15	340	8	140	11	330	16	110	12	120	14	20	17	150	16	110	12	330	9	10
19	16	315	10	350	12	350	10	330	7	340	14	120	12	120	13	100	12	320	16	120	12	360	10	10
20	17	315	10	350	13	360	13	320	10	10	12	130	13	90	11	60	11	350	15	360	11	20	12	360
21	16	315	14	350	12	340	12	340	10	350	10	130	12	100	11	360	12	350	18	350	9	360	9	10
22	15	315	10	340	8	360	10	30	11	180	12	20	11	330	27	290	10	360	15	290	6	170	12	20
23	17	315	16	350	13	350	16	130	9	30	11	110	10	340	15	30	14	350	13	10	8	350	10	120
24	14	315	15	200	12	20	11	40	11	40	10	360	10	350	15	360	11	350	18	50	13	330	10	130
25	18	315	17	330	14	20	12	190	10	130	10	120	10	20	12	360	14	340	16	30	15	330	7	340
26	18	315	10	360	12	10	10	350	8	130	12	120	15	120	13	340	12	340	13	350	15	350	15	330
27	17	315	18	330	12	10	11	20	9	350	13	130	13	110	10	10	11	340	15	10	9	30	11	360
28	16	315	17	300	14	20	11	170	10	340	13	120	15	130	9	350	10	340	15	110	12	350	9	330
29	17	315			12	10	10	120	12	120	11	360	13	120	12	120	14	330	16	360	10	340	15	200
30	19	315			11	350	12	330	12	140	9	130	10	310	14	30	14	320	12	340	10	360	11	340
31	11	315			11	350			13	120			10	20	12	340			16	340			10	330

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001





**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA  
STASIUN METEOROLOGI AHMAD YANI SEMARANG  
DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2010**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	12	310	9	350	12	350	10	230	14	130	10	20	11	100	12	350	13	130	10	50	10	320	11	350
2	12	170	10	330	12	360	11	350	14	10	10	330	10	10	10	330	14	90	14	130	9	330	12	310
3	10	350	10	330	11	340	9	360	13	120	13	360	12	60	11	330	12	330	13	120	10	20	9	320
4	10	320	11	360	12	350	11	70	14	130	12	120	9	350	9	350	10	40	13	50	10	20	12	330
5	20	120	11	340	12	40	9	360	9	360	10	230	4	330	9	100	10	130	12	10	10	10	16	320
6	10	330	18	20	11	340	12	340	12	100	8	90	8	340	8	110	5	130	10	340	9	340	11	360
7	13	350	10	360	13	350	8	140	13	100	8	120	12	350	11	110	10	40	13	110	10	30	11	320
8	17	320	8	340	13	330	10	360	11	140	12	60	10	20	10	130	13	360	10	120	12	330	9	340
9	27	320	11	350	16	330	6	360	10	200	12	100	10	40	11	350	11	220	7	340	12	20	7	210
10	12	310	13	350	13	320	9	10	10	10	11	180	10	130	9	120	11	330	10	310	13	130	12	320
11	14	330	8	10	12	340	10	350	9	340	12	100	12	100	13	130	8	340	10	360	15	110	7	330
12	11	310	10	330	10	350	8	10	6	290	10	20	11	120	13	120	11	350	10	330	10	30	18	320
13	16	320	11	350	12	90	10	350	10	120	9	340	13	130	12	130	10	80	11	330	14	330	16	320
14	18	320	14	330	13	360	10	360	11	140	12	10	12	10	13	100	12	130	11	340	10	350	11	220
15	16	310	14	240	14	20	17	130	8	10	8	70	12	130	9	10	11	120	9	130	11	320	14	330
16	16	320	10	350	10	10	12	330	15	240	9	340	14	120	18	10	12	220	10	360	8	40	17	310
17	19	320	12	340	16	320	10	20	11	340	4	30	9	350	10	20	11	100	11	40	9	340	14	310
18	16	320	12	340	8	10	11	340	9	360	12	100	7	120	13	360	12	10	10	20	10	310	15	320
19	15	330	17	310	8	360	10	340	11	160	12	100	10	30	12	320	14	10	9	360	9	350	10	10
20	12	350	14	330	12	350	8	340	12	110	12	20	9	20	12	10	11	40	12	340	9	360	14	350
21	15	340	13	230	10	340	13	200	10	350	13	100	9	130	6	10	12	110	8	10	10	320	6	320
22	15	290	11	290	10	290	15	340	9	290	13	130	9	290	10	290	13	40	10	290	10	220	8	290
23	9	10	10	20	9	340	11	330	7	10	11	130	14	130	7	100	14	20	9	350	8	360	11	320
24	14	330	7	350	11	350	9	360	8	160	12	130	9	120	9	120	10	140	11	30	14	60	10	350
25	10	330	14	320	10	10	8	240	10	200	8	10	10	100	12	100	13	110	13	120	10	320	14	320
26	15	330	13	350	13	360	7	340	17	110	10	30	12	120	10	130	10	10	11	300	6	10	13	330
27	15	250	12	340	8	360	11	350	10	110	9	100	12	130	9	350	12	360	13	360	10	360	13	310
28	15	340	8	360	6	300	8	350	12	100	12	140	15	110	11	10	10	10	9	350	11	330	16	320
29	11	330			11	350	8	360	12	360	11	10	11	40	10	150	10	350	11	360	10	330	14	320
30	16	340			18	340	9	130	11	100	10	130	12	100	14	360	12	340	12	20	9	320	16	320
31	14	340			5	360			10	40			10	130	10	30			8	250			20	320

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA  
STASIUN METEOROLOGI AHMAD YANI SEMARANG  
DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2011**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	19	320	15	290	17	320	11	320	11	350	13	130	9	100	13	110	14	350	12	310	11	350	11	350
2	18	320	15	320	11	330	10	10	12	330	12	360	12	100	15	110	15	330	10	340	15	10	15	330
3	18	320	14	320	11	330	10	360	9	340	15	140	13	120	14	120	14	30	13	330	12	320	20	300
4	16	310	15	310	14	310	10	360	10	200	12	140	12	110	11	360	13	100	11	360	10	330	8	350
5	12	320	13	300	14	320	8	360	8	120	8	140	12	120	12	340	12	20	11	20	7	80	8	10
6	17	320	19	330	11	340	10	10	13	340	7	360	14	120	13	120	12	20	14	310	10	170	11	340
7	12	320	17	310	8	340	8	340	5	20	10	110	16	120	14	360	12	10	12	10	11	100	8	360
8	16	320	17	320	12	340	10	330	8	360	10	120	13	100	10	130	13	340	13	330	14	360	9	350
9	20	320	16	320	10	340	10	350	10	20	10	360	16	120	10	30	14	320	11	320	13	120	10	20
10	21	320	14	340	10	360	10	350	10	90	11	130	14	350	10	110	15	350	13	350	8	130	10	10
11	20	310	12	320	18	350	11	320	10	10	12	360	13	30	9	360	12	110	12	330	14	360	10	360
12	14	310	16	330	16	330	8	350	11	360	10	100	12	120	12	340	13	360	12	350	14	360	9	200
13	18	320	9	320	9	360	11	350	12	10	10	110	12	110	12	130	16	340	12	310	8	360	10	360
14	14	310	16	330	9	10	11	360	10	110	11	120	11	10	12	110	14	350	12	360	11	320	15	320
15	16	310	14	320	9	330	11	320	13	360	9	10	9	340	13	110	15	350	14	350	10	310	12	330
16	18	310	17	330	12	360	10	330	12	200	14	140	10	350	15	130	11	330	14	350	10	60	11	350
17	15	320	19	310	10	340	10	360	9	300	20	100	9	320	12	120	11	340	18	360	14	160	20	330
18	13	300	13	310	10	340	11	40	11	10	12	120	12	100	11	360	13	350	13	340	12	360	12	330
19	19	320	15	320	10	340	10	350	10	120	11	300	14	120	14	120	12	120	10	350	11	350	9	260
20	16	340	19	320	10	340	10	20	14	360	8	110	12	120	12	340	13	350	15	110	12	20	13	330
21	10	300	20	330	12	360	10	30	10	120	13	100	14	140	13	100	11	320	14	10	12	360	10	340
22	17	290	17	320	9	290	8	360	13	290	11	340	10	290	14	290	13	320	12	290	12	340	10	290
23	15	310	13	330	12	310	10	360	8	120	11	350	12	110	13	100	11	330	15	360	11	100	10	350
24	20	320	15	320	12	360	10	360	8	130	13	130	13	320	11	160	14	360	14	350	12	310	11	20
25	17	310	14	310	10	20	12	10	11	120	12	130	13	110	12	120	10	100	12	360	12	360	7	360
26	14	320	15	330	8	10	9	70	10	120	14	120	10	130	16	320	11	360	17	80	14	10	15	330
27	14	330	16	320	15	320	8	340	11	10	16	130	12	120	14	360	10	140	12	130	14	320	15	320
28	17	330	21	310	17	330	13	360	10	130	14	360	11	130	15	350	11	350	18	290	12	360	20	320
29	10	360			14	330	11	130	12	100	10	20	10	310	13	10	14	360	13	360	10	350	10	320
30	8	350			15	320	10	20	10	100	10	350	13	110	11	360	15	360	11	330	12	120	7	10
31	12	320			11	330			10	280			13	130	12	20			13	20			12	340

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA  
STASIUN METEOROLOGI AHMAD YANI SEMARANG  
DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2012**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	18	330	10	350	17	310	11	300	13	40	9	120	14	100	11	310	16	100	15	360	12	350	11	130
2	9	360	12	320	16	320	12	60	8	10	9	110	14	110	14	330	15	360	13	350	15	350	16	40
3	14	320	17	330	11	320	26	60	10	30	11	110	13	100	11	320	13	360	12	350	12	350	9	360
4	11	320	22	310	12	360	12	10	10	120	12	40	11	80	13	360	12	120	13	320	11	340	9	20
5	8	350	11	340	17	340	17	30	14	60	12	90	13	100	12	90	14	360	12	350	11	320	9	10
6	17	310	16	330	18	330	10	360	11	140	12	90	8	330	13	330	15	350	14	20	9	80	12	20
7	19	310	12	340	10	320	9	330	12	130	13	10	11	30	11	330	15	360	13	150	11	350	8	360
8	11	270	8	350	11	300	15	30	8	100	15	130	11	350	15	100	12	350	16	90	15	120	21	30
9	17	300	9	330	15	340	16	160	12	30	12	110	8	350	12	120	13	340	16	340	10	330	11	330
10	16	310	9	340	15	310	17	100	8	30	8	120	10	90	17	80	15	340	12	340	13	310	12	150
11	18	300	11	350	15	310	10	110	10	330	9	110	14	110	11	10	13	330	14	340	9	330	11	320
12	17	320	14	340	20	320	12	90	10	360	9	10	12	310	13	350	13	110	15	360	12	90	15	40
13	13	320	22	40	26	290	12	90	14	10	12	110	10	310	13	90	16	360	15	360	9	310	8	310
14	9	350	12	20	21	320	10	120	12	110	11	30	13	90	12	10	14	310	14	340	17	110	7	350
15	14	360	13	320	27	310	10	150	13	120	9	70	11	330	11	40	13	10	15	20	10	330	8	10
16	10	10	13	320	25	330	12	90	12	350	10	150	10	310	15	80	12	110	15	330	12	350	13	330
17	11	350	10	360	14	320	12	110	11	360	13	100	10	130	14	100	15	360	15	120	8	100	11	360
18	10	330	8	10	17	300	14	360	11	130	16	130	10	360	14	30	13	330	15	360	15	50	20	240
19	11	360	14	320	14	300	15	50	16	120	13	130	12	110	15	360	11	360	14	10	10	120	7	360
20	9	20	13	360	8	10	13	340	12	110	13	80	12	100	11	360	14	340	13	340	10	330	11	170
21	18	320	9	310	12	10	8	360	12	130	9	100	12	90	12	360	17	360	12	320	10	330	12	330
22	16	290	10	350	10	290	11	330	16	290	12	330	12	290	12	290	13	340	12	290	13	40	10	290
23	17	310	12	330	12	360	10	10	10	360	11	100	11	320	11	360	13	340	11	340	23	340	8	10
24	23	320	9	360	9	360	12	20	10	130	11	120	10	90	11	260	15	340	16	340	10	130	10	340
25	15	300	9	360	8	30	12	30	11	80	12	120	18	100	15	350	14	320	14	340	10	290	9	340
26	23	310	11	60	8	360	8	360	14	120	12	80	10	100	14	70	13	310	15	360	11	340	11	200
27	22	310	11	360	10	350	9	350	15	100	11	310	12	350	13	90	11	320	13	350	11	360	14	320
28	18	310	11	10	13	330	11	80	16	40	11	320	16	120	11	10	12	330	12	10	9	350	12	340
29	17	300	17	360	11	10	12	10	15	40	9	330	16	110	12	340	14	320	13	350	10	360	12	300
30	14	350			10	10	26	350	18	360	11	100	13	320	12	10	12	10	10	120	12	20	12	310
31	4	100			10	10			10	100			10	320	10	340			12	340			15	340

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA  
STASIUN METEOROLOGI AHMAD YANI SEMARANG  
DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2013**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	10	350	12	330	17	310	12	10	17	120	14	320	10	20	14	150	14	140	11	350	12	20	12	330
2	18	330	13	340	18	330	13	360	8	140	12	350	14	100	10	330	13	10	15	320	12	110	14	320
3	13	330	8	360	18	320	14	20	14	110	7	270	12	110	12	120	13	320	12	350	14	100	10	20
4	16	320	10	360	20	300	14	350	18	360	8	350	15	120	13	120	12	340	16	320	13	360	8	360
5	17	330	14	10	14	300	12	350	12	110	11	340	10	140	10	140	20	70	12	360	11	330	14	40
6	14	270	14	340	12	330	12	360	15	90	15	320	12	350	10	110	12	330	12	340	13	360	10	310
7	11	350	13	360	14	330	8	350	13	100	9	30	9	330	13	90	12	300	14	320	12	300	12	120
8	14	310	18	360	18	340	8	340	7	360	6	320	13	130	11	360	11	110	14	20	12	10	14	320
9	10	300	12	300	15	330	16	320	9	130	10	10	10	320	8	360	12	360	15	340	17	100	6	320
10	18	310	11	20	14	320	11	350	9	350	7	320	14	10	10	350	11	140	15	330	12	360	8	330
11	22	300	9	100	10	10	12	320	15	360	12	120	12	350	10	310	12	10	12	330	13	80	12	340
12	23	300	12	190	14	340	11	330	13	20	9	120	12	110	12	150	12	120	12	360	14	340	10	360
13	15	330	12	360	12	220	10	10	12	140	11	120	11	100	18	130	14	320	13	330	11	110	11	330
14	17	300	14	320	15	340	10	10	11	90	13	130	8	80	15	130	13	330	12	310	11	340	9	350
15	14	320	13	320	12	350	10	10	10	10	11	160	7	100	13	100	16	160	14	90	9	350	9	330
16	16	300	13	350	8	10	9	330	13	300	10	30	10	90	15	130	11	350	12	140	5	340	12	350
17	11	300	14	300	8	10	11	90	12	340	9	20	12	130	12	320	12	320	14	350	18	310	10	340
18	18	320	14	310	10	350	15	300	12	340	11	360	13	120	15	130	13	320	17	100	17	320	9	320
19	17	320	12	240	13	100	9	120	11	10	12	320	11	120	15	130	12	120	15	350	9	320	8	130
20	15	310	18	310	11	120	11	360	11	330	11	360	11	10	11	350	12	10	13	340	8	350	6	40
21	20	320	19	300	10	340	12	30	11	10	11	340	14	10	12	270	12	310	10	70	9	360	7	10
22	23	290	21	300	15	290	11	290	9	290	10	290	13	290	12	290	15	290	10	290	11	290	7	290
23	19	310	21	280	20	320	10	140	12	20	10	30	16	100	15	150	16	360	10	350	9	340	11	290
24	15	290	18	320	9	350	9	110	7	330	13	360	16	100	18	120	14	100	12	330	10	340	14	310
25	18	330	16	320	12	320	10	360	12	340	10	30	16	50	14	110	13	340	9	30	12	340	7	40
26	18	310	14	340	11	340	13	90	11	350	10	360	16	130	16	120	13	320	14	120	12	340	10	330
27	13	340	21	320	9	340	13	80	8	90	11	20	10	340	13	120	12	340	13	320	10	330	10	340
28	21	330	19	320	12	350	16	120	10	330	12	60	12	320	11	100	15	310	15	20	9	360	14	340
29	12	330			14	330	14	100	14	10	9	190	9	10	15	10	13	320	14	350	10	330	15	310
30	16	320			8	320	13	90	12	330	12	80	9	10	10	340	15	310	10	360	12	330	12	300
31	12	340			8	10			14	310			12	120	14	100			13	110			12	300

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA  
STASIUN METEOROLOGI AHMAD YANI SEMARANG  
DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2014**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	16	300	14	290	12	320	12	20	10	20	10	100	11	90	10	110	12	120	14	320	14	320	10	360
2	14	330	12	290	14	310	13	360	9	340	11	350	11	100	12	80	12	90	14	310	15	310	13	330
3	8	340	15	300	14	340	13	340	9	100	13	340	11	90	11	100	12	330	12	350	13	320	11	20
4	15	330	12	300	13	350	11	360	13	30	15	110	15	90	13	120	10	90	12	320	18	90	9	330
5	9	320	14	320	14	340	11	310	14	120	12	100	13	120	15	110	11	350	13	310	13	350	7	340
6	12	320	7	300	10	10	12	340	14	140	8	90	11	110	16	90	10	110	12	320	13	330	10	10
7	11	320	15	320	11	350	9	360	10	70	9	350	11	90	12	110	12	90	12	110	13	320	12	340
8	12	320	14	300	11	320	12	330	11	340	9	110	11	110	14	100	12	310	13	90	11	310	10	320
9	9	340	12	310	13	300	8	340	8	340	11	90	12	110	11	320	13	350	13	100	14	350	16	330
10	10	20	14	300	12	310	10	350	12	60	10	80	10	360	19	110	16	100	14	340	12	10	14	320
11	9	10	18	330	15	330	9	290	11	90	7	360	13	100	12	120	15	90	14	320	12	10	7	290
12	9	340	16	320	17	310	12	10	11	100	7	340	11	350	10	110	14	340	13	300	10	20	6	10
13	23	320	17	310	20	330	10	200	10	300	12	350	7	330	13	80	13	110	12	310	17	310	14	320
14	11	300	12	310	15	310	13	320	9	120	12	110	13	110	12	110	14	110	15	350	11	20	15	320
15	11	300	14	340	12	320	8	340	11	60	9	110	8	290	14	100	13	100	13	340	12	40	15	320
16	13	310	14	320	14	330	10	330	12	130	13	110	9	350	12	100	15	60	15	340	10	340	13	350
17	12	300	12	340	9	330	11	360	12	10	10	110	10	330	10	320	14	90	15	330	15	120	11	320
18	13	270	15	320	11	360	10	340	10	90	9	130	8	110	12	100	12	110	14	100	15	10	14	340
19	17	310	12	320	10	320	12	340	11	80	10	100	10	120	11	100	13	110	14	100	16	30	8	330
20	22	310	11	340	11	310	9	330	9	360	15	100	11	140	11	320	12	300	15	90	17	20	9	360
21	17	290	14	300	7	330	10	330	10	80	10	110	11	120	12	100	16	80	14	80	11	350	13	360
22	23	290	18	320	9	290	9	290	11	290	9	290	8	290	13	290	15	290	14	290	13	290	10	290
23	12	300	16	290	12	310	8	350	12	100	8	100	9	260	12	100	13	90	13	320	11	320	9	340
24	17	290	16	310	14	310	8	330	11	90	13	120	11	90	12	100	13	90	12	340	12	180	8	330
25	16	310	17	320	10	310	9	320	12	100	11	100	10	100	12	100	14	310	13	100	12	320	11	350
26	17	320	13	340	11	340	11	330	15	100	13	80	13	110	11	330	12	330	15	350	9	10	11	280
27	18	320	14	330	11	310	10	320	10	110	9	120	9	110	15	340	12	110	14	310	11	350	8	350
28	10	290	14	340	10	130	9	310	10	310	10	270	13	90	13	100	11	350	12	320	8	10	9	280
29	16	300			13	360	11	360	10	110	14	90	12	100	11	320	13	350	11	330	12	320	8	350
30	16	300			10	330	10	10	8	90	11	130	13	100	12	100	14	340	12	330	10	80	9	330
31	18	300			11	110			13	360			12	110	13	330			16	360			7	350

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

SUKARNO  
NIP. 196012101982031001



**BADAN METEOROLOGI KLIMATOLOGI DAN GEOFISIKA**  
**STASIUN METEOROLOGI AHMAD YANI SEMARANG**  
**DATA ARAH DAN KECEPATAN ANGIN MAKSIMUM HARIAN TAHUN 2015**

TGL	January		February		March		April		May		June		July		August		September		October		November		December	
	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)	Speed (knot)	Dirrection (derajat)
1	12	320	14	300	16	310	10	310	10	310	12	100	12	360	11	330	10	100	15	080	14	330	11	310
2	16	310	16	310	13	320	10	320	06	350	10	070	13	310	13	110	17	110	17	090	14	320	11	320
3	10	320	17	320	18	320	14	260	08	320	13	090	11	020	12	010	13	350	15	090	12	320	10	350
4	13	290	15	310	15	310	19	100	08	010	14	100	11	350	14	320	13	350	16	100	15	340	12	320
5	07	350	14	330	14	300	11	340	11	120	13	110	11	340	12	090	14	330	15	340	13	350	12	320
6	08	330	13	310	19	300	09	350	12	120	11	120	12	010	13	010	17	360	12	320	15	340	08	180
7	08	360	13	310	15	310	12	100	10	110	14	110	14	110	14	120	15	090	15	340	15	340	09	310
8	11	320	11	300	12	320	10	270	15	080	10	060	11	090	13	020	14	120	14	320	13	300	11	330
9	09	310	15	320	16	300	10	310	12	090	10	330	10	360	12	120	14	340	15	340	14	340	09	290
10	13	310	18	290	17	300	12	360	14	110	10	350	12	120	14	100	11	310	18	350	14	320	13	090
11	16	310	20	300	17	300	14	310	15	080	10	100	14	100	14	070	10	300	16	330	15	090	13	320
12	15	300	16	310	19	300	11	130	14	090	11	140	15	100	15	350	14	030	17	330	12	350	14	340
13	17	310	17	300	12	330	09	340	11	060	13	070	19	110	14	360	16	110	14	350	14	110	11	320
14	13	300	12	310	12	300	13	300	12	120	09	100	17	100	15	020	12	300	13	310	13	020	08	350
15	08	330	12	320	11	330	18	020	15	120	10	030	15	110	14	120	11	350	16	350	12	140	11	330
16	18	300	11	320	11	320	11	360	11	350	09	100	14	110	14	100	14	090	17	130	13	320	10	330
17	30	300	16	310	11	310	08	010	11	110	11	100	13	120	14	010	15	120	15	330	12	310	10	260
18	15	300	13	310	10	330	10	330	11	090	11	070	15	090	13	010	15	140	14	310	12	360	12	290
19	16	310	17	300	10	300	10	350	11	130	10	100	10	110	10	090	16	090	10	350	15	010	12	290
20	10	310	10	300	10	120	11	320	11	120	11	110	14	100	12	320	14	340	14	120	14	040	18	300
21	10	310	13	320	09	310	10	330	10	120	10	150	13	090	10	090	14	340	17	090	11	340	12	300
22	15	290	15	320	10	290	10	290	12	290	12	290	14	290	14	290	15	290	16	290	16	290	11	290
23	13	300	16	300	09	330	11	320	14	110	15	090	15	080	15	130	14	350	13	100	13	090	17	310
24	23	100	17	310	12	310	15	310	11	110	09	050	14	100	14	310	12	310	18	340	11	320	13	310
25	16	320	09	340	13	020	06	110	12	090	09	350	14	340	14	300	15	070	14	010	12	340	11	320
26	09	290	09	360	09	320	09	330	12	080	12	100	14	350	14	050	14	350	18	120	10	320	14	310
27	20	310	09	350	10	350	08	350	14	330	13	110	16	070	14	040	17	330	17	340	11	330	10	320
28	14	310	10	330	10	330	08	350	11	090	15	330	13	080	12	350	17	330	14	330	13	350	12	330
29	14	310			11	360	09	360	12	070	10	340	12	110	11	090	13	110	17	340	14	360	13	310
30	16	310			10	310	09	320	09	080	12	340	13	320	12	090	14	340	20	010	09	320	13	310
31	18	310			10	360			11	090			12	100	14	100			14	360			13	310

Mengetahui :  
Kepala Seksi Observasi dan Informasi  
Stasiun Meteorologi A. Yani Semarang

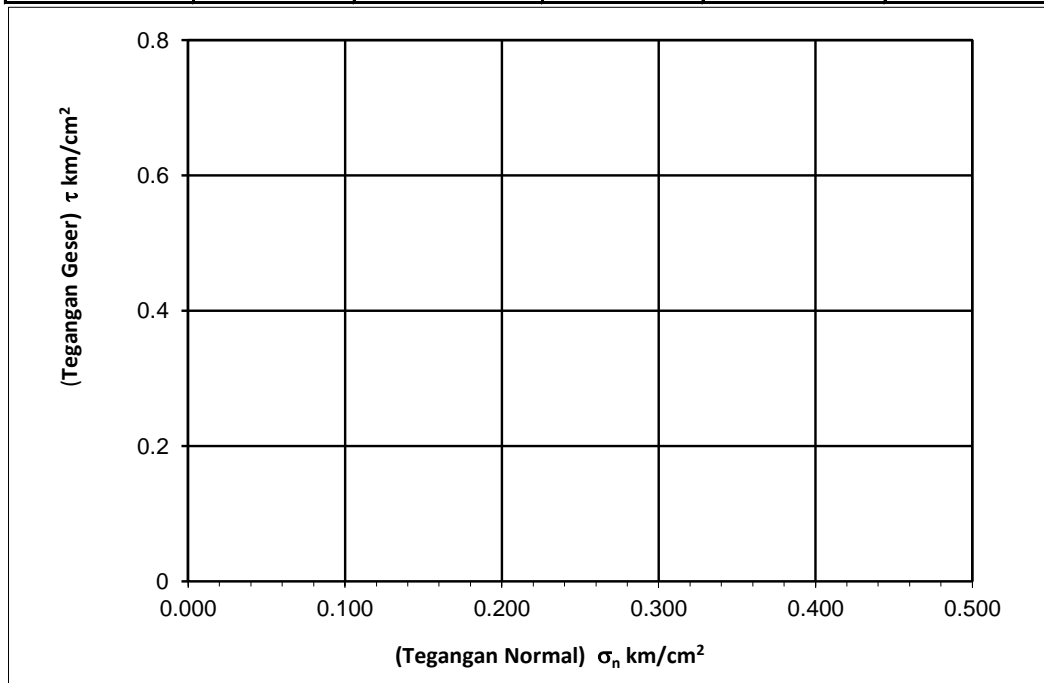
SUKARNO  
NIP. 196012101982031001

## DIRECT SHEAR TEST

Proyek : Penyelidikan Geoteknik  
 Lokasi : Pantai timur Semarang/Demak  
 No. Bor : BH-2  
 Kedalaman : 07.50 - 08.00 meter

Test By : Rohmadi  
 Checked By : Adytya Tulus R, ST  
 Tanggal : September 2016

Gaya Normal	P <sub>1</sub> 3.167 kg	P <sub>2</sub> 6.334 kg	P <sub>3</sub> 12.668 kg
Tegangan Normal	$\sigma_{n1}$ 0.10 kg/cm <sup>2</sup>	$\sigma_{n2}$ 0.21 kg/cm <sup>2</sup>	$\sigma_{n3}$ 0.41 kg/cm <sup>2</sup>
Dial Reading	Tegangan Geser $\tau_1$	Dial Reading	Tegangan Geser $\tau_2$
14.00	0.142	14.00	0.142
		Dial Reading	Tegangan Geser $\tau_3$
		16.00	0.162



Contoh	Diameter 6.256 cm	Tinggi : 2.00 cm	Luas : 30.72 cm <sup>2</sup>
Alat	Kalibrasi Proving Ring : 0.312		
Hasil	c = 0.132 kg/cm <sup>2</sup>	$\phi$ = 4.03 °	

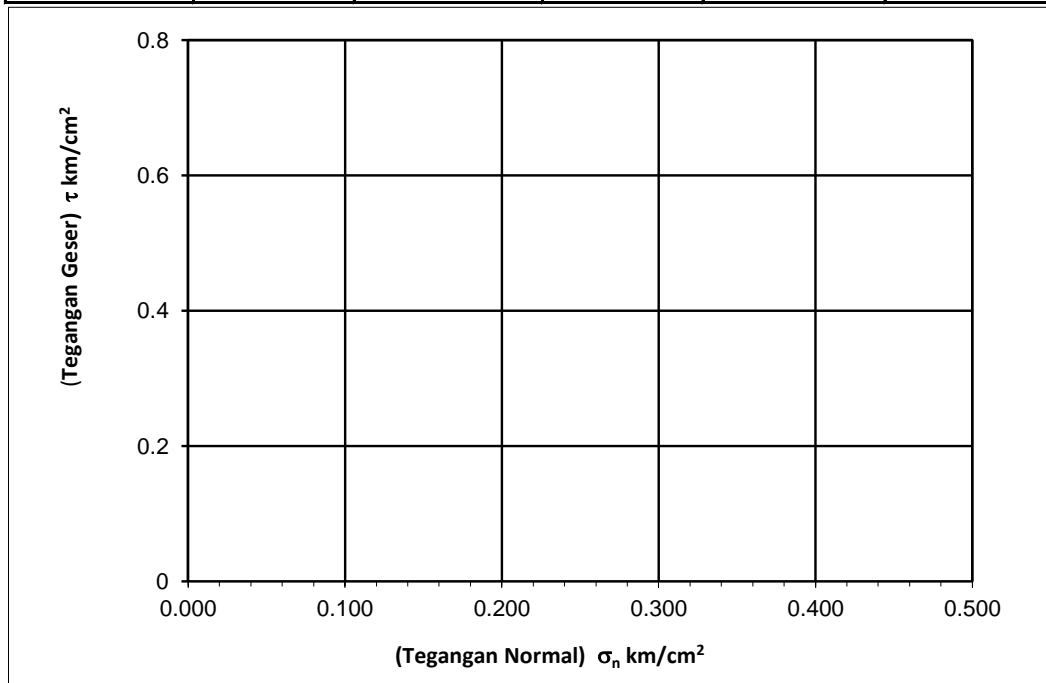
**Keterangan :**

$\sigma_n$  : Tegangan Normal  
 $\tau$  : Tegangan Geser

## DIRECT SHEAR TEST

Proyek	: Penyelidikan Geoteknik	Test By	: Rohmadi
Lokasi	: Pantai timur Semarang/Demak	Checked By	: Adytya Tulus R, ST
No. Bor	: BH-2	Tanggal	: September 2016
Kedalaman	: 14.50 - 15.00 meter		

Gaya Normal	P <sub>1</sub>	3.167 kg	P <sub>2</sub>	6.334 kg	P <sub>3</sub>	12.668 kg
Tegangan Normal	σ <sub>n1</sub>	0.10 kg/cm <sup>2</sup>	σ <sub>n2</sub>	0.21 kg/cm <sup>2</sup>	σ <sub>n3</sub>	0.41 kg/cm <sup>2</sup>
	Dial Reading	Tegangan Geser τ <sub>1</sub>	Dial Reading	Tegangan Geser τ <sub>2</sub>	Dial Reading	Tegangan Geser τ <sub>3</sub>
	14.00	0.142	17.00	0.173	18.00	0.183



Contoh	Diameter	6.256 cm	Tinggi	: 2.00 cm	Luas	: 30.72 cm <sup>2</sup>
Alat	Kalibrasi Proving Ring	:	0.312			
Hasil	c =	0.137 kg/cm <sup>2</sup>	φ =	6.82 °		

**Keterangan :**

σ<sub>n</sub> : Tegangan Normal  
 τ : Tegangan Geser



<b>INDEX PROPERTIES OF SOIL</b>		
<b>PROJECT</b> : Penyelidikan Geoteknik	<b>DATE</b> : #####	
<b>LOCATION</b> : Pantai timur Semarang /Demak	<b>TESTED BY</b> : Rohmadi	
<b>DEPTH</b> : 07.50 - 08.00	<b>CHECKED BY</b> : Adytya Tulus R, ST	
	<b>SAMPLE NO</b> : BH-2	
<b>WATER CONTENT DETERMINATION</b>		
Container no.	A10	A6
Wt of cup + wet soil	74.86	87.32
Wt of cup + dry soil	49.79	60.47
Wt of cup	6.20	14.00
Wt of dry soil	43.59	46.47
Wt of water	25.07	26.85
Water content, $\omega\%$	57.51	57.78
Average water content, $\omega\%$	57.65	
<b>UNIT WEIGHT OF SOIL</b>		
Height (cm)	2.06	2.06
Diameter (cm)	6.35	6.35
Volume of soil (cm <sup>3</sup> )	65.21	65.21
Wt, of wet soil (gr)	104.02	104.66
Wet Density (gr/cm <sup>3</sup> )	1.60	1.61
Average Wet Density (gr/cm <sup>3</sup> )	1.60	
Water Content $\omega$ ( % )	57.65	
Average Dry Density (gr/cm <sup>3</sup> )	1.02	
<b>SPECIFIC GRAVITY OF SOIL</b>		
Method of air removal	Vacuum	Vacuum
Wt. of Pyc	183.30	183.30
Temperatur	28.00	28.00
Wt, Pyc+ water = Wbw	819.50	819.50
Temperatur corection (a)	0.998	0.998
Wt of evapdish	54.17	54.17
Wt. of evapdish + dry soil	140.00	140.00
Wt of dry soil = Ws	85.83	85.83
Wt. Pyc+water+ soil = Wbms	872.06	872.02
Ww = Ws+Wbw-Wbws	33.27	33.31
Gs = a Ws /Ww (for 15° C)	2.57	2.57
Average of Specific Gravity	2.57	
<b>SUMMARY</b>		
Water content, $\omega\%$	<b>57.65</b>	
Wet Density (gr/cm <sup>3</sup> )	<b>1.60</b>	
Dry Density (gr/cm <sup>3</sup> )	<b>1.02</b>	
Saturated Density (gr/cm <sup>3</sup> )	<b>1.62</b>	
Specific gravity (Gs)	<b>2.57</b>	
Void Ratio	<b>1.53</b>	
Porosity (%)	<b>60.55</b>	
Degree of Saturation	<b>96.63</b>	

<b>INDEX PROPERTIES OF SOIL</b>		
<b>PROJECT</b> : Penyelidikan Geoteknik	<b>DATE</b> : #####	
<b>LOCATION</b> : Pantai timur Semarang /Demak	<b>TESTED BY</b> : Rohmadi	
<b>DEPTH</b> : 14.50 - 15.00	<b>CHECKED BY</b> : Adytya Tulus R, ST	
	<b>SAMPLE NO</b> : BH-2	
<b>WATER CONTENT DETERMINATION</b>		
Container no.	A9	8
Wt of cup + wet soil	74.66	83.51
Wt of cup + dry soil	49.42	58.71
Wt of cup	6.31	16.16
Wt of dry soil	43.11	42.55
Wt of water	25.24	24.80
Water content, $\omega\%$	58.55	58.28
Average water content, $\omega\%$	58.42	
<b>UNIT WEIGHT OF SOIL</b>		
Height (cm)	2.06	2.06
Diameter (cm)	6.35	6.35
Volume of soil (cm <sup>3</sup> )	65.21	65.21
Wt, of wet soil (gr)	105.40	104.48
Wet Density (gr/cm <sup>3</sup> )	1.62	1.60
Average Wet Density (gr/cm <sup>3</sup> )	1.61	
Water Content $\omega$ ( % )	58.42	
Average Dry Density (gr/cm <sup>3</sup> )	1.02	
<b>SPECIFIC GRAVITY OF SOIL</b>		
Method of air removal	Vacuum	Vacuum
Wt. of Pyc	183.30	183.30
Temperatur	28.00	28.00
Wt, Pyc+ water = Wbw	819.50	819.50
Temperatur corection (a)	0.998	0.998
Wt of evapdish	54.17	54.17
Wt. of evapdish + dry soil	140.00	140.00
Wt of dry soil = Ws	85.83	85.83
Wt. Pyc+water+ soil = Wbms	872.08	872.12
Ww = Ws+Wbw-Wbws	33.25	33.21
Gs = a Ws /Ww (for 15° C)	2.58	2.58
Average of Specific Gravity	2.58	
<b>SUMMARY</b>		
Water content, $\omega\%$	<b>58.42</b>	
Wet Density (gr/cm <sup>3</sup> )	<b>1.61</b>	
Dry Density (gr/cm <sup>3</sup> )	<b>1.02</b>	
Saturated Density (gr/cm <sup>3</sup> )	<b>1.62</b>	
Specific gravity (Gs)	<b>2.58</b>	
Void Ratio	<b>1.54</b>	
Porosity (%)	<b>60.59</b>	
Degree of Saturation	<b>97.95</b>	