

CHAPTER VI

CONCLUSION AND SUGGESTION

6.1 Conclusion

Based on the result and discussion of experiments conducted by the author, the results can be concluded as below:

1. The use of materials of all fine aggregate in concrete making especially with super fine grain size will lead to failure in the concrete making in because of its lack of bonding capability with the paste and water and also by its behavior which sunk and compacted at the bottom of the mold so the water will rise up which not suitable in the field usage
2. The use of super fine grains in concrete making made difficulty in the water controlling since its behavior which sunk and compacted at the bottom of the mold so the water will rise up and couldn't achieve the maximum result on compressive strength especially in later age since the evaporation happens much faster so the concrete lose its moisture on early age and makes the silica fume not working in optimum result which not suitable in the field usage
3. The fresh properties of the concrete fulfill the workability requirements of SCC. It is indicated by the number of slump flow of 688 mm in 1 day specimens, 670 mm in 3 days specimens, 660 mm in 7 days specimens, 693 mm in 14 days specimens, 723 mm in 21 days specimens, and 660

mm in 28 days specimens. And also, it is indicated in the number of blocking ratio by L-Box test with the number of 0.83 in 1 day specimen, 0.86 in 3 days specimens, 0.842 in 7 days specimens, 0.87 in 14 days specimens, 0.82 in 21 days specimens, and 0.86 in 28 days specimens

4. Good early strength obtained in the concrete even though in 1 day we couldn't achieve the expected strength since the quality of the raw quartz in the concrete making was not as good as the author's experience before and with super fine grains size, it will lead to lack of matrix bonding even we got the packing density. The 1 day specimens have the average of 10 MPa of compressive strength, 27.16 MPa average on 3 days age and 36.41 MPa average on 7 days age
5. In the further strength development, the strength increased but not as significant as the expectation. In the age of 21 days, the concrete stop the hydration process with the indicator there are no significant growth of strength in the age of 28 days due to high rate of evaporation so the concrete lose its moisture and stop the hydration process. The result was 40.93 MPa average on the 14 days age, 50.36 MPa average on the 21 days age, and 48.66 MPa on the 28 days average.

6.2 Recommendation

1. To make the fully fine aggregates UHPC, it is still preferably try to use the more variation of grain size of quartz from the macro size to nano size
2. The larger grain size of fine aggregates are recommended if we want to use the specific quartz size as the main component of fine aggregates to keep the rate of evaporation comes in proper rate so the hydration process takes in optimum rate with accordance to the work of silica fume
3. Processed quartz preferable to be used in construction industry



REFERENCES

- ASTM C39 M-18, 2018, “Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens”
- ASTM C 1240, 2004, “Standard Specification for Silica Fume Used in Cementitious Mixtures”
- ASTM C-9, 1956, “Significance of Test and Properties of Concrete and Concrete-Making Materials”
- Efnarc Association, 2002, “Specification and Guideline for Self Compacting Concrete”, Efnarc Association, UK.
- Federal Highway Administration, 2001, “PCC Pavement Evaluation and Rehabilitation”, Federal Highway Administration, Washington DC.
- Han, S. J., Kim, H. R., & Yun, H. D., 2013. “Effects of Shrinkage Reducing Admixture (SRA) on the Tensile Behavior of Strain-Hardening Cement Composite (SHCC)”, *Applied Mechanics and Materials*, 372, 203–206.
- Hariato, H., 2010, “Ultra High Performance Concrete – Beton Generasi Baru Berbasis Teknologi Nano”, Universitas Pelita Harapan, Tangerang.
- Hassan and Moncef, N., 2016, ”Effect of Mixture Design Parameters on Segregation of Self-Consolidating Concrete”, *ACI Materials Journal* no. 103-M42.
- Kamal R., Shamsai, A., Saghafian, B. and Peroti, S., 2012, “ Effect of Water and Cement Ratio on Compressive Strength and Abrasion of Micro silica Cement ” , *Middle- East Journal of Scientific Research* 12(8).

Kirkbridge T.W., 1988, “Condensed Silica Fume in Concrete, FIP State of Art Report”, FIP Commission Thomas Telford, London.

Laura D., Diana B., Ina P., Laura V., 2016, “Effect of Pozzolanic Additives on the Strength Development of High Performance Concrete”, *Procedia Engineering* 172 (2017) 202 – 210.

Ma, Jianxin and Dietz, Jörg, 2017, “Ultra High Performance Self Compacting Concrete”, Universitat Leipzig, German.

Manmohan, D., and Mehta, P. K., 1981. “Influence of pozzolanic, slag, and chemical admixtures on pore size distribution and permeability of hardened cement pastes.” *Cem. Concr. Aggregates*, 3(1), 63–67.

R. Bornermann, M. Schmidt, E. Fehling and B. Middendorf, , 2001, “Ultra Hocheistungsbeton UHPC—Herstellung, Eigenschaften und Anwendungsmöglichkeiten Beton- und Stahlbetonbau 96”, Heft 7, Ernst & Sohn

Research and Development Department of Products Application PT Semen Indonesia (persero) Tbk, 2015, "Rapid Strength Concrete," Research and Development Department of Products Application PT Semen Indonesia (persero) Tbk, Gresik.

Shamsai, A., Rahmani, K., Peroti, S. and Rahemi, L., 2012, “The Effect of Water-Cement Ratio in Compressive and Abrasion Strength of the Nano Silica Concretes”, *World Applied Sciences Journal* 17 (4): 540-545.

Sika Services AG, 2013, “*Sika Concrete Handbook*”, Sika Services AG, Zurich.

SK SNI T-15-1990-03, 1990, “Tata Cara Pembuatan Rencana Campuran Beton Normal”, Badan Standardisasi Nasional BSN, Indonesia.

SNI 03-2049-2004, 2004, “Semen Portland”, Badan Standardisasi Nasional BSN, Indonesia.

SNI 15-0302-2004, 2004, “Semen Portland Pozolan”, Badan Standardisasi Nasional BSN, Indonesia.

SNI 1974-2011, 2011, “Cara Uji Kuat Tekan Beton dengan Benda Uji Silinder”, Badan Standardisasi Nasional BSN, Indonesia.

Yasin A K, Bayuaji R, Susanto T E, 2017, “A Review in High Early Strength Concrete and Local Materials Potential”, Department of Civil Infrastructure Engineering, Institut Teknologi Sepuluh November, Surabaya

Yogie, R., 2010, “Penerapan Self Compacting Concrete (SCC) Pada Beton Mutu Normal”, Jurnal Teknik WAKTU Volume 08 Nomor 02 Juli 2010 – ISSN : 1412 – 1467.

APPENDIX



A.1 MUD INVESTIGATION IN THE SAND

I. Tested : 22 April 2019

II. Materials:

Sand From : Bangka Belitung

Water From : Laboratory of CV. Jati Kencana Beton

III. Tools

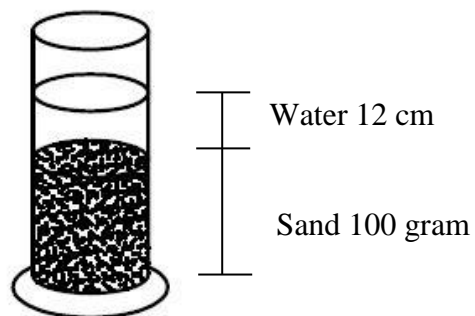
- Measurement Glass 250 cc

- Digital Scale

- Oven

- Sand

IV. Sketch



V. Result

After Sand+Plate taken out form oven

a. Weight of sand+plate = 158.45 gram

b. Weight of plate = 61.9 gram

c. Weight of sand = 96.55 gram

$$\text{Mud} = \frac{100-96.55}{100} \times 100\% = 3.55\%$$



A.2 MUD INVESTIGATION IN THE COARSE AGGREGATE

I. Tested : 22 April 2019

II. Materials:

Split From : Merapi

Water From : Laboratory of CV. Jati Kencana Beton

III. Tools

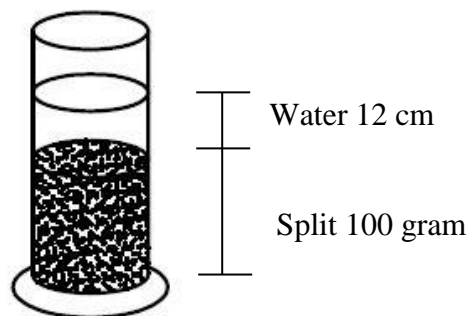
- Measurement Glass 250 cc

- Digital Scale

- Oven

- Sand

IV. Sketch



V. Result

After Sand+Plate taken out form oven

a. Weight of sand+plate = 159.55 gram

b. Weight of plate = 61.6 gram

c. Weight of sand = 97.95 gram

$$\text{Mud} = \frac{100-97.95}{100} \times 100\% = 2.05\%$$



A.3 THE DENSITY AND ABSORPTION TEST OF SPLIT

Material : Split

From : Merapi

	Test	I
A	Dry Weight	500 Gram
B	Weight of SSD Sample	505 Gram
C	Weight in the Water	294.6 Gram
D	Bulk Specific Gravity = $\frac{(A)}{(B-C)}$	2.3764
E	Bulk Specific Gravity SSD = $\frac{(B)}{(B-C)}$	2.4001
F	Apparent Specific Gravity = $\frac{(A)}{(A-C)}$	2.4342
G	Absorption = $\frac{(B-A)}{(A)} \times 100\%$	1%



UNIVERSITAS ATMA JAYA YOGYAKARTA

Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp.+62-274-487711 (hunting) Fax. +62-274-487748

A.4 WATER CONTENT IN COARSE AGGREGATE

Material : Split

From : Merapi

	Test	H1	H2
1	Weight of wet split	73.476	73.373
2	Weight of dry split	72.692	72.521
3	Weight of water = (1)-(2)	0.784	0.852
4	Water content (w) = (3)/(2)*100%	1.07	1.174
	Average	1.122	



UNIVERSITAS ATMA JAYA YOGYAKARTA

Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp.+62-274-487711 (hunting) Fax. +62-274-487748

B.1 THE MIX DESIGN OF 1M³ UHPSCC WITH QUARTZ

Trial Mix

Total volume : 1 m³

Cementitious Material

Cement : 510 kg/m³

Silica Fume : 76.5 kg/m³

Total Cementitious Material : 586.5 kg/m³

W/C Ratio : 0.35

Water Used : 178.5 kg/m³

Fine Aggregate

Quartz (0.3mm – 0.8mm) : 485.52 kg/m³

Quartz Flour (200 mesh) : 208.08 kg/m³

Coarse Aggregate

Merapi Split : 749.7 kg/m³

Retarder

Sika Viscocrete 1003 : 10.2 kg/m³ (2% from C)



UNIVERSITAS ATMA JAYA YOGYAKARTA

Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp.+62-274-487711 (hunting) Fax. +62-274-487748

B.2 THE MIX DESIGN OF 0.0159 M³ UHPSCC WITH QUARTZ

Trial Mix For 1 Times Mixing (3 Molds)

Total volume : 0.0159 m³

Cementitious Material

Cement : 8.111 kg

Silica Fume : 1.217 kg

Total Cementitious Material : 9.328 kg

W/C Ratio : 0.35

Water Used : 2.83 kg

Fine Aggregate

Quartz (0.3mm – 0.8mm) : 7.722 kg

Quartz Flour (200 mesh) : 3.31 kg

Coarse Aggregate

Merapi Split : 11.923 kg

Retarder

Sika Viscocrete 1003 : 0.162 kg (2% from C)



C. MODULUS OF ELASTICITY DATA

Cylinder JB28-A

Compressive Strength : 44.71 MPa

A = 17974

Po = 200.2

fp = 11.0378

ep = 0.0006

Correction = 3.7871

Modulus = 17512.8675

Mod Theory = 31426.8022

Load		Strainometer	Stress (f)	Strain (ε)	Correction
Kgf	N		Mpa	×10 ⁻⁵	
0	0	0	0.0000	0.0000	
500	4903.355	0	0.2728	0.0000	3.7871
1000	9806.71	0	0.5456	0.0000	3.7871
1500	14710.07	1	0.8184	0.2498	4.0369
2000	19613.42	4	1.0912	0.9990	4.7861
2500	24516.78	9	1.3640	2.2478	6.0349
3000	29420.13	13	1.6368	3.2468	7.0339
3500	34323.49	17	1.9096	4.2458	8.0329
4000	39226.84	22	2.1824	5.4945	9.2816
4500	44130.2	26	2.4552	6.4935	10.2806
5000	49033.55	33	2.7280	8.2418	12.0289
5500	53936.91	38	3.0008	9.4905	13.2776
6000	58840.26	42	3.2736	10.4895	14.2766
6500	63743.62	46	3.5464	11.4885	15.2756
7000	68646.97	50	3.8192	12.4875	16.2746
7500	73550.33	55	4.0920	13.7363	17.5234
8000	78453.68	63	4.3648	15.7343	19.5214
8500	83357.04	66	4.6376	16.4835	20.2706
9000	88260.39	72	4.9104	17.9820	21.7691
9500	93163.75	80	5.1833	19.9800	23.7671
10000	98067.1	84	5.4561	20.9790	24.7661
10500	102970.5	91	5.7289	22.7273	26.5144



UNIVERSITAS ATMA JAYA YOGYAKARTA

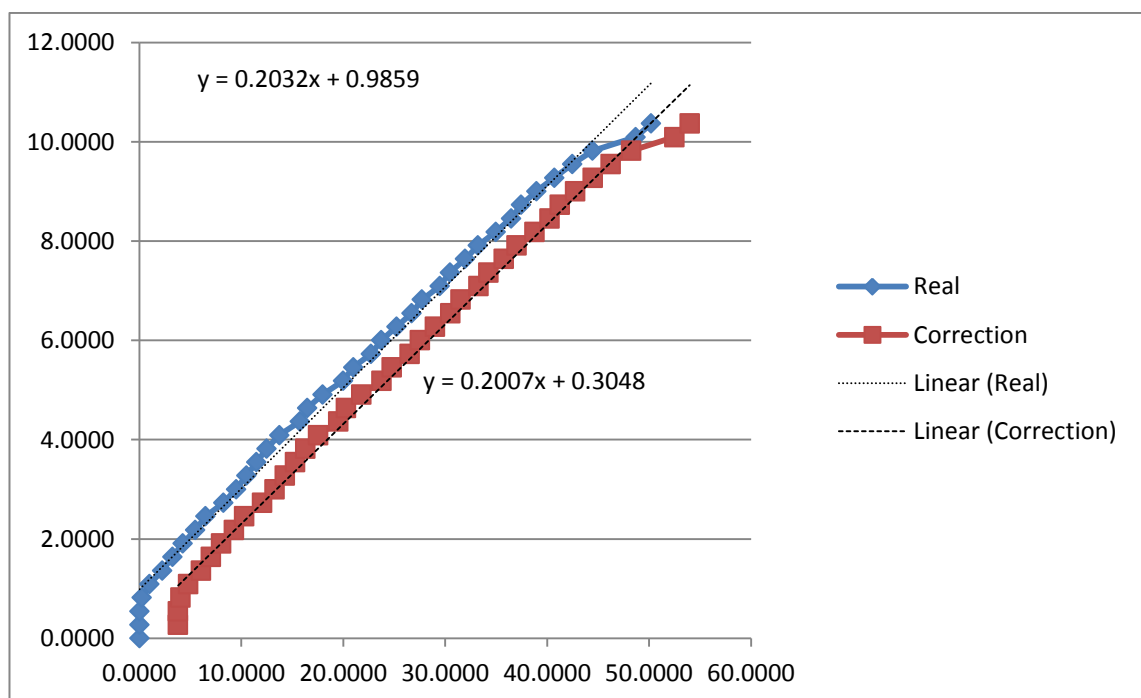
Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp.+62-274-487711 (hunting) Fax. +62-274-487748

11000	107873.8	95	6.0017	23.7263	27.5134
11500	112777.2	101	6.2745	25.2248	29.0119
12000	117680.5	107	6.5473	26.7233	30.5104
12500	122583.9	111	6.8201	27.7223	31.5094
13000	127487.2	118	7.0929	29.4705	33.2576
13500	132390.6	122	7.3657	30.4695	34.2566
14000	137293.9	128	7.6385	31.9680	35.7551
14500	142197.3	133	7.9113	33.2168	37.0039
15000	147100.7	140	8.1841	34.9650	38.7521
15500	152004	146	8.4569	36.4635	40.2506
16000	156907.4	150	8.7297	37.4625	41.2496
16500	161810.7	156	9.0025	38.9610	42.7481
17000	166714.1	163	9.2753	40.7093	44.4964
17500	171617.4	170	9.5481	42.4575	46.2446
18000	176520.8	178	9.8209	44.4555	48.2426
18500	181424.1	195	10.0937	48.7013	52.4884
19000	186327.5	201	10.3665	50.1998	53.9869
19500	191230.8	211	10.6393	52.6973	56.4844
20000	196134.2	229	10.9121	57.1928	60.9799





UNIVERSITAS ATMA JAYA YOGYAKARTA

Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp.+62-274-487711 (hunting) Fax. +62-274-487748

Cylinder JB28-B

Compressive Strength : 49.88 MPa

A = 17987

Po = 200.3

fp = 11.9498

ep = 0.0006

Correction = 4.7923

Modulus = 19525.817

Mod Theory = 33194.1139

Load		Strainometer	Stress	Strain	Correction
Kgf	N		(f)	(ε)	
			Mpa	×10 ⁻⁵	×10 ⁻⁵
0	0	0	0.0000	0.0000	
500	4903.355	0	0.2726	0.0000	4.7923
1000	9806.71	0	0.5452	0.0000	4.7923
1500	14710.07	3	0.8178	0.7489	5.5412
2000	19613.42	6	1.0904	1.4978	6.2901
2500	24516.78	11	1.3630	2.7459	7.5382
3000	29420.13	15	1.6356	3.7444	8.5367
3500	34323.49	19	1.9082	4.7429	9.5352
4000	39226.84	24	2.1808	5.9910	10.7833
4500	44130.2	28	2.4534	6.9895	11.7818
5000	49033.55	35	2.7261	8.7369	13.5292
5500	53936.91	40	2.9987	9.9850	14.7773
6000	58840.26	44	3.2713	10.9835	15.7758
6500	63743.62	48	3.5439	11.9820	16.7743
7000	68646.97	52	3.8165	12.9805	17.7728
7500	73550.33	57	4.0891	14.2287	19.0210
8000	78453.68	65	4.3617	16.2257	21.0180
8500	83357.04	69	4.6343	17.2242	22.0165
9000	88260.39	73	4.9069	18.2227	23.0150
9500	93163.75	82	5.1795	20.4693	25.2616
10000	98067.1	87	5.4521	21.7174	26.5097
10500	102970.5	94	5.7247	23.4648	28.2571



UNIVERSITAS ATMA JAYA YOGYAKARTA

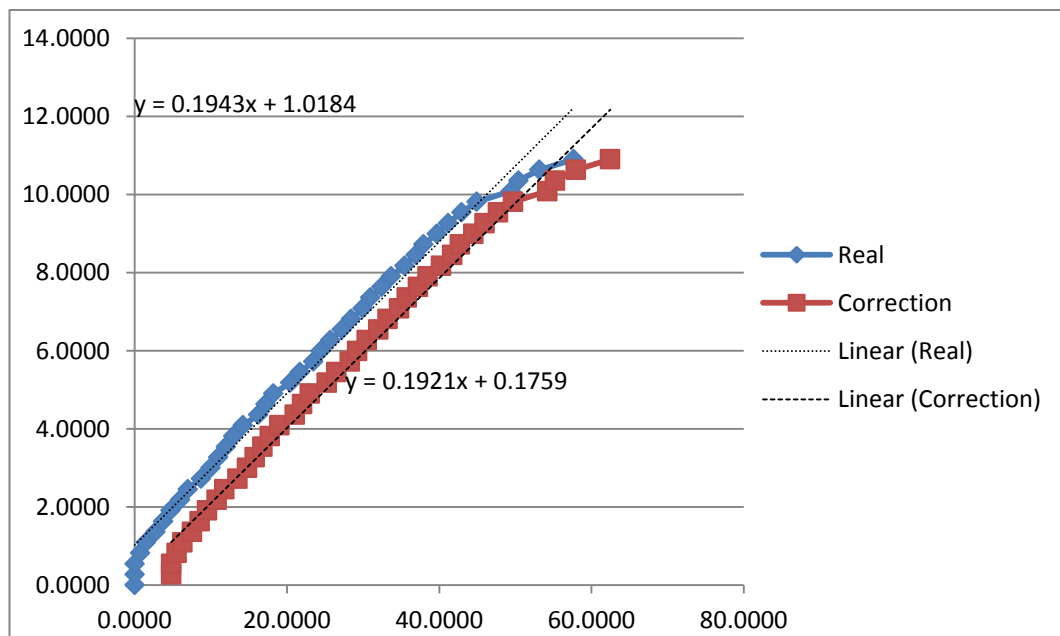
Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp. +62-274-487711 (hunting) Fax. +62-274-487748

11000	107873.8	98	5.9973	24.4633	29.2556
11500	112777.2	103	6.2699	25.7114	30.5037
12000	117680.5	109	6.5425	27.2092	32.0015
12500	122583.9	114	6.8151	28.4573	33.2496
13000	127487.2	120	7.0877	29.9551	34.7474
13500	132390.6	124	7.3603	30.9536	35.7459
14000	137293.9	130	7.6330	32.4513	37.2436
14500	142197.3	135	7.9056	33.6995	38.4918
15000	147100.7	142	8.1782	35.4468	40.2391
15500	152004	148	8.4508	36.9446	41.7369
16000	156907.4	152	8.7234	37.9431	42.7354
16500	161810.7	159	8.9960	39.6905	44.4828
17000	166714.1	165	9.2686	41.1882	45.9805
17500	171617.4	172	9.5412	42.9356	47.7279
18000	176520.8	180	9.8138	44.9326	49.7249
18500	181424.1	198	10.0864	49.4259	54.2182
19000	186327.5	202	10.3590	50.4244	55.2167
19500	191230.8	213	10.6316	53.1702	57.9625
20000	196134.2	231	10.9042	57.6635	62.4558





UNIVERSITAS ATMA JAYA YOGYAKARTA

Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp.+62-274-487711 (hunting) Fax. +62-274-487748

Cylinder JB28-C

Compressive Strength : 51.49 MPa

A = 17981

Po = 200.3

fp = 11.9198

ep = 0.0006

Correction = 3.9723

Modulus = 19071.68

Mod Theory = 33725.5704

Load		Strainometer	Stress	Strain	Correction
Kgf	N		(f)	(ε)	
			Mpa	×10 ⁻⁵	×10 ⁻⁵
0	0	0	0.0000	0.0000	
500	4903.355	0	0.2727	0.0000	4.7923
1000	9806.71	0	0.5454	0.0000	3.7871
1500	14710.07	6	0.8181	1.4978	5.2849
2000	19613.42	9	1.0908	2.2466	6.0337
2500	24516.78	14	1.3635	3.4948	7.2819
3000	29420.13	18	1.6362	4.4933	8.2804
3500	34323.49	23	1.9089	5.7414	9.5285
4000	39226.84	27	2.1816	6.7399	10.5270
4500	44130.2	30	2.4543	7.4888	11.2759
5000	49033.55	38	2.7270	9.4858	13.2729
5500	53936.91	43	2.9997	10.7339	14.5210
6000	58840.26	47	3.2724	11.7324	15.5195
6500	63743.62	51	3.5451	12.7309	16.5180
7000	68646.97	54	3.8178	13.4798	17.2669
7500	73550.33	60	4.0904	14.9775	18.7646
8000	78453.68	63	4.3631	15.7264	19.5135
8500	83357.04	72	4.6358	17.9730	21.7601
9000	88260.39	76	4.9085	18.9715	22.7586
9500	93163.75	85	5.1812	21.2182	25.0053
10000	98067.1	90	5.4539	22.4663	26.2534
10500	102970.5	97	5.7266	24.2137	28.0008



UNIVERSITAS ATMA JAYA YOGYAKARTA

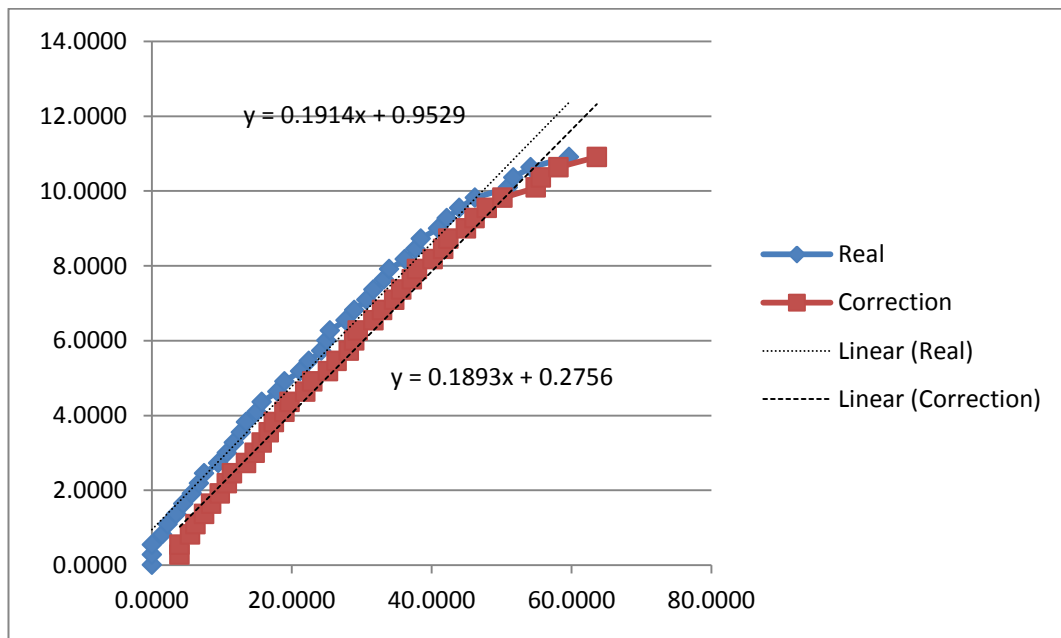
Faculty of Engineering, International Civil Engineering

Program, Construction Material Technology Laboratory

Jl. Babarsari No.44 Yogyakarta 55281 Indonesia Kotak Pos 1086

Telp. +62-274-487711 (hunting) Fax. +62-274-487748

11000	107873.8	100	5.9993	24.9626	28.7497
11500	112777.2	102	6.2720	25.4618	29.2489
12000	117680.5	111	6.5447	27.7084	31.4955
12500	122583.9	116	6.8174	28.9566	32.7437
13000	127487.2	123	7.0901	30.7039	34.4910
13500	132390.6	127	7.3628	31.7024	35.4895
14000	137293.9	133	7.6355	33.2002	36.9873
14500	142197.3	136	7.9082	33.9491	37.7362
15000	147100.7	145	8.1809	36.1957	39.9828
15500	152004	151	8.4536	37.6935	41.4806
16000	156907.4	154	8.7263	38.4423	42.2294
16500	161810.7	164	8.9990	40.9386	44.7257
17000	166714.1	169	9.2717	42.1867	45.9738
17500	171617.4	176	9.5444	43.9341	47.7212
18000	176520.8	185	9.8171	46.1807	49.9678
18500	181424.1	204	10.0898	50.9236	54.7107
19000	186327.5	207	10.3625	51.6725	55.4596
19500	191230.8	217	10.6352	54.1687	57.9558
20000	196134.2	239	10.9079	59.6605	63.4476





Jl. Raya Jogja - Magelang Km. 23 Jumoyo Salam Magelang
 Telp : 0293 - 3287007 Fax : 3287006 ; 0811 255 407
 Email : jkbmtl@yahoo.co.id

CV. JATI KENCANA BETON

Ready Mix Concrete - Concrete Pump Supplier - Material

LAPORAN HASIL PENGUJIAN KUAT TEKAN BETON

No. : 00816/CV.JKB/LAB/V/2019
 Customer : Universitas Atma Jaya Yogyakarta
 Project : Trial Beton UHPSCC
 Nama : Joshua Bernard Susanto

DATA - DATA BENDA UJI

	Kode Benda Uji	Tgl. Dibuat	Tgl. Diuji	Tinggi (mm)	Dia (mm)	Berat (Kg)	Brt Jenis (Kg/m ³)	Umur (hari)	Beban Maks (KN)	Kuat Tekan (MPa)	(**) Perkiraan Umur 28 Hari (MPa)	Kuat Tekan (Kg/Cm ²)	Kuat Tekan Rata2 (Mpa)
1.	JB-1A	16/05/2019	17/05/2019	300	150	12,13	2288,25	1	120	6,791		83,43	9,997
2.	JB-1B	16/05/2019	17/05/2019	300	150	12,15	2292,02	1	200	11,318		139,05	
3.	JB-1C	16/05/2019	17/05/2019	300	150	12,15	2292,02	1	210	11,884		146,00	

Keterangan :

Pemeriksaan, Pembuatan dan Perawatan
 Benda Uji Sesuai Dengan ASTM C 143, C 31, C 39
 Kuat tekan silinder beton = 0,83 Kuat tekan kubus

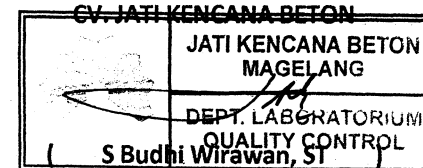
Magelang, 17 Mei 2019

Pengawas

KONSULTAN

KONTRAKTOR

READY MIX



()
Direksi

()
Lab Technical / QC

()
Lab Technical / QC



Jl. Raya Jogja - Magelang Km. 23 Jumoyo Salam Magelang
 Telp : 0293 - 3287007 Fax : 3287006 ; 0811 255 407
 Email : jkbmtl@yahoo.co.id

CV. JATI KENCANA BETON

Ready Mix Concrete - Concrete Pump Supplier - Material

LAPORAN HASIL PENGUJIAN KUAT TEKAN BETON

No. : 00817/CV.JKB/LAB/V/2019
 Customer : Universitas Atma Jaya Yogyakarta
 Project : Trial Beton UHPSCC
 Nama : Joshua Bernard Susanto

DATA - DATA BENDA UJI

	Kode Benda Uji	Tgl. Dibuat	Tgl. Diuji	Tinggi (mm)	Dia (mm)	Berat (Kg)	Brk Jenis (Kg/m ³)	Umur (hari)	Beban Maks (KN)	Kuat Tekan (MPa)	(**) Perkiraan Umur 28 Hari (MPa)	Kuat Tekan (Kg/Cm ²)	Kuat Tekan Rata2 (Mpa)
1.	JB-3A	17/05/2019	20/05/2019	300	150	12,09	2280,70	3	450	25,465		312,85	
2.	JB-3B	17/05/2019	20/05/2019	300	150	11,90	2244,86	3	510	28,860		354,57	27,162
3.	JB-3C	17/05/2019	20/05/2019	300	150	12,00	2263,72	3	480	27,162		333,71	

Keterangan :

Pemeriksaan, Pembuatan dan Perawatan
 Benda Uji Sesuai Dengan ASTM C 143, C 31, C 39
 Kuat tekan silinder beton = 0,83 Kuat tekan kubus

Magelang, 20 Mei 2019

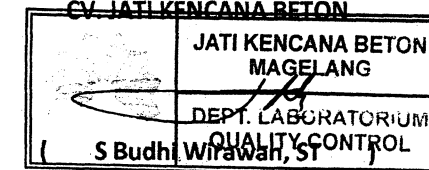
Pengawas

KONSULTAN

KONTRAKTOR

READY MIX

CV. JATI KENCANA BETON



Direksi

Lab Technical/QC

Lab Technical/QC



Jl. Raya Jogja - Magelang Km. 23 Jumoyo Salam Magelang
Telp : 0293 - 3287007 Fax : 3287006 ; 0811 255 407
Email : jkbmtl@yahoo.co.id

CV. JATI KENCANA BETON

Ready Mix Concrete - Concrete Pump Supplier - Material

LAPORAN HASIL PENGUJIAN KUAT TEKAN BETON

No. : 00818/CV.JKB/LAB/V/2019
Customer : Universitas Atma Jaya Yogyakarta
Project : Trial Beton UHPSCC
Nama : Joshua Bernard Susanto

DATA - DATA BENDA UJI

	Kode Benda Uji	Tgl. Dibuat	Tgl. Diuji	Tinggi (mm)	Dia (mm)	Berat (Kg)	Brt Jenis (Kg/m ³)	Umur (hari)	Beban Maks (KN)	Kuat Tekan (MPa)	(**) Perkiraan Umur 28 Hari (MPa)	Kuat Tekan (Kg/Cm ²)	Kuat Tekan Rata2 (Mpa)
1.	JB-7A	13/05/2019	20/05/2019	300	150	12,16	2293,91	7	650	36,782		451,90	36,405
2.	JB-7B	13/05/2019	20/05/2019	300	150	12,14	2290,13	7	590	33,387		410,18	
3.	JB-7C	13/05/2019	20/05/2019	300	150	12,27	2314,66	7	690	39,046		479,71	

Keterangan :

Pemeriksaan, Pembuatan dan Perawatan
Benda Uji Sesuai Dengan ASTM C 143, C 31, C 39
Kuat tekan silinder beton = 0,83 Kuat tekan kubus

Magelang, 20 Mei 2019

Pengawas

KONSULTAN

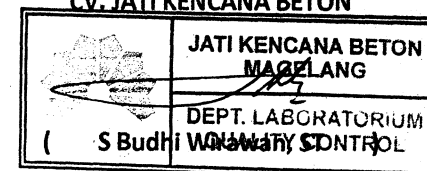
KONTRAKTOR

READY MIX
CV. JATI KENCANA BETON

Direksi

Lab Technical / QC

Lab Technical / QC





Jl. Raya Jogja - Magelang Km. 23 Jumoyo Salam Magelang
 Telp : 0293 - 3287007 Fax : 3287006 ; 0811 255 407
 Email : jkbmtl@yahoo.co.id

CV. JATI KENCANA BETON

Ready Mix Concrete - Concrete Pump Supplier - Material

LAPORAN HASIL PENGUJIAN KUAT TEKAN BETON

No. : 00819/CV.JKB/LAB/V/2019
 Customer : Universitas Atma Jaya Yogyakarta
 Project : Trial Beton UHPSCC
 Nama : Joshua Bernard Susanto

DATA - DATA BENDA UJI

	Kode Benda Uji	Tgl. Dibuat	Tgl. Diuji	Tinggi (mm)	Dia (mm)	Berat (Kg)	Brt Jenis (Kg/m ³)	Umur (hari)	Beban Maks (KN)	Kuat Tekan (MPa)	(**) Perkiraan Umur 28 Hari (MPa)	Kuat Tekan (Kg/Cm ²)	Kuat Tekan Rata2 (Mpa)
1.	JB-14A	10/05/2019	24/05/2019	300	150	12,13	2288,25	14	680	38,480		472,75	40,932
2.	JB-14B	10/05/2019	24/05/2019	300	150	12,13	2288,25	14	700	39,612		486,66	
3.	JB-14C	10/05/2019	24/05/2019	300	150	12,39	2337,29	14	790	44,705		549,23	

Keterangan :

Pemeriksaan, Pembuatan dan Perawatan
 Benda Uji Sesuai Dengan ASTM C 143, C 31, C 39
 Kuat tekan silinder beton = 0,83 Kuat tekan kubus

Magelang, 24 Mei 2019

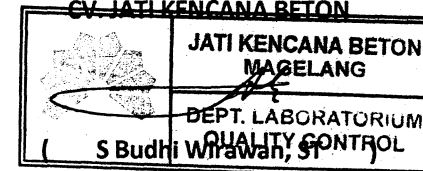
Pengawas

KONSULTAN

KONTRAKTOR

READY MIX

CV. JATI KENCANA BETON



()
Direksi

()
Lab Technical / QC

()
Lab Technical / QC

LAPORAN HASIL PENGUJIAN KUAT TEKAN BETON

No. : 00820/CV.JKB/LAB/V/2019
 Customer : Universitas Atma Jaya Yogyakarta
 Project : Trial Beton UHPSCC
 Nama : Joshua Bernard Susanto

DATA - DATA BENDA UJI

	Kode Benda Uji	Tgl. Dibuat	Tgl. Diuji	Tinggi (mm)	Dia (mm)	Berat (Kg)	Brt Jenis (Kg/m ³)	Umur (hari)	Beban Maks (KN)	Kuat Tekan (MPa)	(**) Perkiraan Umur 28 Hari (MPa)	Kuat Tekan (Kg/Cm ²)	Kuat Tekan Rata2 (Mpa)
1.	JB-21A	30/04/2019	21/05/2019	300	150	12,16	2293,91	21	820	46,403		570,09	
2.	JB-21B	30/04/2019	21/05/2019	300	150	12,18	2297,68	21	920	52,061		639,61	49,421
3.	JB-21C	30/04/2019	21/05/2019	300	150	11,98	2259,95	21	880	49,798		611,80	

Keterangan :

Pemeriksaan, Pembuatan dan Perawatan
 Benda Uji Sesuai Dengan ASTM C 143, C 31, C 39
 Kuat tekan silinder beton = 0,83 Kuat tekan kubus

Magelang, 21 Mei 2019

Pengawas

KONSULTAN

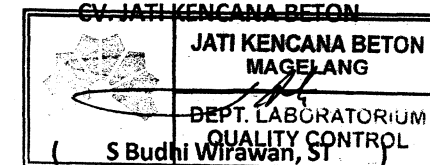
KONTRAKTOR

READY MIX

(_____)
 Direksi

(_____)
 Lab Technical / QC

(_____)
 Lab Technical / QC





Jl. Raya Jogja - Magelang Km. 23 Jumoyo Salam Magelang
Telp : 0293 - 3287007 Fax : 3287006 ; 0811 255 407
Email : jkbmtl@yahoo.co.id

CV. JATI KENCANA BETON

Ready Mix Concrete - Concrete Pump Supplier - Material

LAPORAN HASIL PENGUJIAN KUAT TEKAN BETON

No. : 00821/CV.JKB/LAB/V/2019
Customer : Universitas Atma Jaya Yogyakarta
Project : Trial Beton UHPSCC
Nama : Joshua Bernard Susanto

DATA - DATA BENDA UJI

	Kode Benda Uji	Tgl. Dibuat	Tgl. Diuji	Tinggi (mm)	Dia (mm)	Berat (Kg)	Brk Jenis (Kg/m ³)	Umur (hari)	Beban Maks (KN)	Kuat Tekan (MPa)	(**) Perkiraan Umur 28 Hari (MPa)	Kuat Tekan (Kg/Cm ²)	Kuat Tekan Rata2 (Mpa)
1.	JB-28A	21/04/2019	19/05/2019	300	150	12,10	2282,59	28	790	44,705		549,23	
2.	JB-28B	21/04/2019	19/05/2019	300	150	12,15	2292,02	28	880	49,798		611,80	48,666
3.	JB-28C	21/04/2019	19/05/2019	300	150	12,37	2333,52	28	910	51,495		632,66	

Keterangan :

Pemeriksaan, Pembuatan dan Perawatan
Benda Uji Sesuai Dengan ASTM C 143, C 31, C 39
Kuat tekan silinder beton = 0,83 Kuat tekan kubus

Magelang, 19 Mei 2019

Pengawas

KONSULTAN

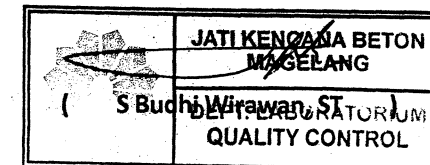
KONTRAKTOR

READY MIX
CV. JATI KENCANA BETON

(_____)
Direksi

(_____)
Lab Technical / QC

(_____)
Lab Technical / QC





REPORT OF ANALYSIS

KURVA GRANULOMETRI

Sample : **SILICA SAND**
 Principal : **PT. PAM LIONNAISE JAYA**
 Order Number : **35.2502**
 Code : -

ANALISA UKURAN BUTIR

Saringan No.	Diameter [mm]	Berat tertahan [gram]	%Tertahan	% Lolos Kumulatif
8	2.360	0.00	0.00	100.00
10	2.000	0.00	0.00	100.00
14	1.410	0.00	0.00	100.00
16	1.180	18.50	18.50	81.50
18	1.000	58.30	58.30	23.20
20	0.850	17.20	17.20	6.00
25	0.710	5.20	5.20	0.80
30	0.590	0.80	0.80	0.00
50	0.297	0.00	0.00	0.00
		100.00	100.00	

