

DAFTAR PUSTAKA

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Jalan Perpustakaan No. 19 Kampus USU Medan 20155 - Telp. (061) 8215526

No : 005/LB-A/IX/2003

Lamp : 1(satu) berkas

Hal : Keterangan selesainya kegiatan penelitian

Kepada Yth,

Bapak Ketua Jurusan Sipil Universitas Medan Area

Di Tempat,

Dengan Hormat,

Sehubungan dengan surat saudara dengan No. 306/FI/1.1.c/2003 tanggal 10 Juli 2003 mengenai permohonan riset dan pengambilan data untuk tugas akhir mahasiswa sebagai berikut :

Nama : Junaidi Abdillah Ilham
NIM : 98.811.0004
Jurusan : Teknik Sipil

Maka disini kami terangkan bahwa mahasiswa yang tersebut diatas benar telah melakukan riset dan pengambilan data untuk melengkapi tugas akhirnya dari tanggal 13 Juli s.d 27 September 2003 dengan hasil seperti terlampir.

Demikian surat ini kami sampaikan atas perhatian dan kerjasama yang baik kami ucapkan terimakasih.

Medan, 27 September 2003

Kepala Lab. Beton FT-USU, U
LABORATORIUM
BETON
DR. Ir. Bachran Lubis, MSc

NIP 130 810 777

**UNIT WEIGHT OF AGGREGATE
FOR CONCRETE MATERIAL
ASTM C 29/C 29M - 98**

Nama : Junaidi
 Nim : 988110004
 Judul : Pengaruh Bahan Tambahan Scrap Mesin Bubutan
 Keretakan Beton
 Mat rial : Natural Sand
 Asal : Binjai
 Tested by : Indr Jaya

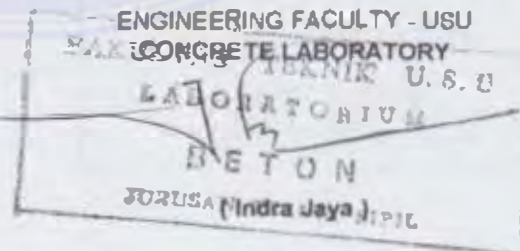
1. Calibration of Measure

Room Temperature	(°C)	30.00
Water Temperature	(°C)	28.00
Mass of the Measure	(kg)	0.50
Mass of the Water (A)	(kg)	1.95
Unit Weight of the Water (B)	(kg/m ³)	996.22
Correction Factor C=(B/A)		510.88
Maximum diameter of Aggregate	(mm)	5.00

2. Result of Testing

	Weight	
	Rodding Procedure	Shoveling Procedure
Sample I	3.30	3.05
Sample II	3.35	3.10
Total	6.65	6.15
Average	3.33	3.0
Net Weight (G)	2.83	2.58
Unit Weight (G*K) (kg/m ³)	1443.25	1315.53

Medan, June 23, 2003



**SIEVE ANALYSIS OF FINE AGGREGATE
FOR CONCRETE MATERIAL
(ASTM C 136 - 84a)**

Nama : Junaidi
 Nim : 988110004
 Judul : Pengaruh Bahan Tambahan Scrap Mesin Bubutan Keretakan Beton
 Material : Natural Sand
 Asaf : Binjai
 Tested by : Indra Jaya

Sieve Dia. (mm) (No.)	Retained Fraction				Cumulative	
	Sample 1 Weight (gram)	Sample 2 Weight (gram)	Total Weight (gram)	(%)	Retained (%)	Passing (%)
9.50 (3/8 - in)	0.0	0.0	0.0	0.00	0.00	100.00
4.75 (No. 4)	5.0	4.5	9.5	0.48	0.48	99.53
2.36 (No. 8)	50.0	48.2	98.2	4.91	5.39	94.62
1.18 (No. 16)	147.0	148.0	295.0	14.75	20.14	79.87
0.60 (No. 30)	306.0	305.0	611.0	30.55	50.69	49.32
0.30 (No. 50)	302.0	303.0	605.0	30.25	80.94	19.07
0.15 (No. 100)	134.0	133.0	267.0	13.35	94.29	5.71
Pan	56.0	58.3	114.3	5.72	100.00	0.00
Total	1000	1000	2000	100		

Fineness Modulus (FM) = $\frac{251.90}{100} = 2.52$

Good gradation class

fine 2.2 < FM < 2.6
 medium 2.6 < FM < 2.9
 coarse 2.9 < FM < 3.2

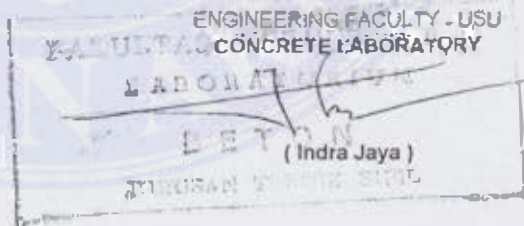
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 CONCRETE LABORATORY
 LABORATORIUM
 BETON
 (Indra Jaya)
 JURUSAN TEKNIK SIPIL

**SPECIFIC GRAVITY AND ABSORPTION OF FINE AGGREGATE
FOR CONCRETE MATERIAL
(ASTM C 128 - 99)**

Nama : Junaldi
Nim : 988110004
Judul : Pengaruh Bahan Tambahan Scrap Mesin Bubutan Keretakan Beton
Material : Natural Sand
Asal : Binjai
Tested by : Indra Jaya

	Sample I	Sample II	Average
Weight of saturated-surface-dry test specimen, g (S)	500.0	500.0	500.0
Weight of pycnometer with specimen and water to calibration mark, g (C)	990.0	989.5	989.8
Weight of oven-dry test specimen in air, g (A)	489.5	489.0	489.3
Weight of pycnometer filled with water, g (B)	678.0	678.0	678.0
Bulk Specific Gravity = $\frac{A}{(B + S - C)}$	2.60	2.59	2.60
Bulk Specific Gravity (Saturated-Surface-Dry) = $\frac{S}{(B + S - C)}$	2.66	2.65	2.66
Apparent Specific Gravity = $\frac{A}{(B + A - C)}$	2.76	2.75	2.76
Absorption, % = $\frac{(S - A) \times 100}{A}$	2.15	2.25	2.20

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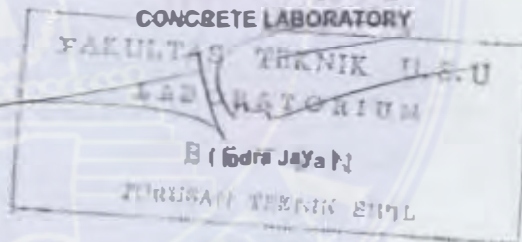


FOR CONCRETE MATERIAL
ASTM C 40 - 84

Nama : Junaidi
Nim : 988110004
Judul : Pengaruh Bahan Tambahan Scrap Mesin Bubutan
Keretakan Beton
Material : Natural Sand
Asal : Binjai
Tested by : Indra Jaya

Colorimetric Test	Comparison	Sample I	Sample II
Comparison the color with the reference standard color solution (Gardner No. 3)	Lighter	-	-
	Equal	No.3	no.3
	Darker	-	-

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**MATERIAL FINER THAN 75- μ m (No. 200) IN MINERAL AGGREGAT
BY WASHING
FOR CONCRETE MATERIAL
ASTM C 117 - 90**

Nama : Junaidi
Nim : 988110004
Judul : Pengaruh Bahan Tambahan Scrap Mesin Bubutan
 Keretakan Beton
Material : Natural Sand
Asal : Binjai
Tested by : Indra Jaya

	Sample I	Sample II	Average
Original dry mass of sample, g	500	500	500
Dry mass of sample after washing, g	485	486	485.5
Mass of material finer than 75- μ m (No. 200) sieve by washing, g	15	14	14.5
Percentage of material finer than 75- μ m (No. 200) sieve by washing, %	3	2.8	2.9

Medan, June 23, 2003

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LABORATORIUM

BETON

(Indra Jaya) SIPPL