BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY (BUET)

DEPARTMENT OF CIVIL ENGINEERING

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http://brtc.ce.buet.ac.bd/#/home

TRANSPORTATION ENGINEERING LABORATORY

BRTC Bureau of Research, Testing & Consultation

BRTC No. : **1102-91414 /CE /22-23 ; Dt: 17/5/2023**

Sent by : Engineer Md Obaidullah , General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur

Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023

Project : Different Tests of MGMCL Stone and Imported Stones.

Sample : **Crushed Stone (Stone Chips)** **MGMCL**

Test : **Specific Gravity and Water Absorption (ASTM C127)**

Date of Test : 12/6/2023

TEST REPORT

Sample Designation	Weight of oven dry sample (gm)	Weight of SSD sample (gm)	Weight of saturated sample in water (gm)	Bulk Specific Gravity (OD) (Relative Density)	Absorption Capacity (%)
Crushed Stone (Stone Chips)	3102.7	3114.1	1999.9	**2.78**	**0.40**

Notes: Samples were not properly sealed.

19
bFXKdd43R

Department of Civil Engineering, BUET, Dhaka-1000, Bangladesh

Countersigned *by*:

Dr. Hasib Mohammed Ahsan
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed *by*:

12/06/23

Dr. Md. Mizanur Rahman
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Important Notes: Samples as supplied to us have been tested in our laboratory. BRTC does not have any responsibility as to the representative character of the samples required to be tested. It is recommended that samples are sent in a secure and sealed cover/packet/container under signature of the competent authority. In order to avoid fraudulent fabrication of test results, it is recommended that all test reports are collected by duly authorized person, and not by the Contractor/Supplier.

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Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023

Project : Different Tests of MGMCL Stone and Imported Stones.

Sample : **Crushed Stone (Stone Chips)** **MGMCL**

Test : **Ten Percent Fines Value [BS 812-111:1990]**

Date of Test : 12/6/2023

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry) (gm)	Applied Load (KN)	Weight of material passing 3.35 mm sieve (gm)	Ten Percent Fines Value
Crushed Stone (Stone Chips)	20 mm to 14 mm	2831	180	327	**160 KN**

Notes: Samples were not properly sealed.

20
5fR8R9b4g

Countersigned *by*:

Dr. Hasib Mohammed Ahsan
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Test Performed *by*:

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12/07/23

Dr. Md. Mizanur Rahman
Professor
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BUET, Dhaka-1000, Bangladesh

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Sent by : Engineer Md Obaidullah , General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur
Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023

Project : Different Tests of MGMCL Stone and Imported Stones.

Sample : **Crushed Stone (Stone Chips)** **MGMCL**
Test : **Aggregate Impact Value [BS 812 (part 3) 1975]**
Date of Test : 12/6/2023

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry) (gm)	Weight of material passing 2.36 mm sieve (gm)	Aggregate Impact Value %
Crushed Stone (Stone Chips)	14 mm to 10 mm	348	99	**28**

Notes: Samples were not properly sealed.

21
3tjhS8b88

Countersigned *by*:

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Test Performed *by*:

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12/6/23

Dr. Md. Mizanur Rahman
Professor
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Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023

Project : Different Tests of MGMCL Stone and Imported Stones.

Sample : **Crushed Stone (Stone Chips)** **MGMCL**

Test : **Aggregate Crushing Value [BS 812 (part 3) 1975]**

Date of Test : 12/6/2023

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry)	Weight of material passing 3.35 mm sieve	Aggregate Crushing Value
		(gm)	(gm)	%
Crushed Stone (Stone Chips)	20 mm to 14 mm	2831	612	**22**

Notes: Samples were not properly sealed.

22
gKB4Egr54

Countersigned *by*:

Dr. Hasib Mohammed Ahsan
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Test Performed *by*:

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Sent by : Engineer Md Obaidullah , General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur

Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023

Project : Different Tests of MGMCL Stone and Imported Stones.

Sample : **Crushed Stone (Stone Chips)** **MGMCL**

Test : **Unit Weight/Bulk Density & Voids in Aggregate [ASTM C 29]**

Date of Test : 12/6/2023

TEST REPORT

Unit weight/Bulk Density (kg/m3) =	1560 kg/ m3
Voids in Aggregate, compacted by Rodding(%) =	

Notes: Samples were not properly sealed.

23

5dPm5CXee

Countersigned *by*:

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Test Performed *by*:

Department of Civil Engineering BUET, Dhaka-1000, Bangladesh

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Dr. Md. Mizanur Rahman
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BUETCE 044954

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BRTC No. : **1102-91414 /CE /22-23 ; Dt: 17/5/2023**
Sent by : Engineer Md Obaidullah , General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur
Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023

Project : Different Tests of MGMCL Stone and Imported Stones.

Sample : **Crushed Stone (Stone Chips)** Sample ID: **MGMCL**
Test : **Los Angeles Abrasion Value [ASTM C-131]**
Date of Test : 12/6/2023

TEST REPORT

Type of Aggregate	Grading Type	Total Weight of Aggregate	Aggregate Passing 1.70 mm Sieve	Los Angeles Abrasion Value
		gm	gm	%
Crushed Stone (Stone Chips)	B	5000	1528	**31**

Notes: Samples were not properly sealed.

24
emmR6mRm4

Countersigned *by*:

Dr. Hasib Mohammed Ahsan
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed *by*:

Department of Civil Engineering * BUET, Dhaka-1000, Bangladesh *

12/06/23

Dr. Md. Mizanur Rahman
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

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BRTC No. : **1102-91414 /22-23/CE; Dt: 17/5/2023**
Sent by : Engineer Md Obaidullah , General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur
-
Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023
Project : Different Tests of MGMCL Stone and Imported Stones.
Sample : **Concrete Cylinder** [Aggregate Type: Stone chips (MGMCL)]
Cement : AKIJ (OPC) w/c = 0.45 [Mix proportion(as quoted): 1:2:4]
[Admixture Added (as per letter): Not mentioned]
Test : **Compressive Strength Test of Concrete Cylinder [ASTM C39]**
Date of Test : 15/6/2023

TEST REPORT

SL No.	Date of Casting as per the letter	Specimen Designation/ Frog Mark	Specimen Area	Maximum Load	Crushing Strength	Average Crushing Strength	Mode of Failure
			(sq. in)	(lb)	(psi)		
1	8/6/2023	MGMCL	12.67	41,843	3,303	**3410 psi**	Combined *
2	(7 days test)	MGMCL	12.67	44,572	3,518	(23.5 MPa)	Combined *
3		MGMCL	12.55	42,753	3,407	(240 kg/cm²)	Combined *

* Combined = Mortar and Aggregate Failure.

Note: Samples were received in unsealed condition.

39
CRKAmE9XB

Countersigned *by*:

Prof. Dr. Hasib Mohammed Ahsan
Test-In-Charge
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed *by*:

Department of Civil Engineering BUET, Dhaka-1000, Bangladesh

12/06/23

Dr. Md. Mizanur Rahman
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

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BUETCE 044938

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BRTC No. : **1102-91414 /22-23/CE; Dt: 17/5/2023**
Sent by : Engineer Md Obaidullah , General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur
-
Ref. No. : 28.17.0000.311.48.001.23/687; Dt: 16/5/2023
Project : Different Tests of MGMCL Stone and Imported Stones.
Sample : **Concrete Cylinder** [Aggregate Type: Stone chips (MGMCL)]
Cement : AKIJ (OPC) w/c = 0.45 [Mix proportion(as quoted): 1:2:4]
[Admixture Added (as per letter): Not mentioned]
Test : **Compressive Strength Test of Concrete Cylinder [ASTM C39]**
Date of Test : 6/7/2023

TEST REPORT

SL No.	Date of Casting *as per the letter*	Specimen Designation/ Frog Mark	Specimen Area	Maximum Load	Crushing Strength	Average Crushing Strength	Mode of Failure
			(sq. in)	(lb)	(psi)		
1	8/6/2023	MGMCL	12.67	54,580	4,308	**4490 psi**	Combined *
2	**(28 days test)**	MGMCL	12.67	56,400	4,451	(31 MPa)	Combined *
3		MGMCL	12.55	59,129	4,711	(316 kg/cm²)	Combined *

* Combined = Mortar and Aggregate Failure.

Note: Samples were received in unsealed condition.

40
9EF6tWg7g

Countersigned *by*:

Prof. Dr. Hasib Mohammed Ahsan
Test-In-Charge
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed *by*:

Department of Civil Engineering BUET, Dhaka-1000, Bangladesh

12/07/23

Dr. Md. Mizanur Rahman
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

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TRANSPORTATION ENGINEERING LABORATORY

BRTC Bureau of Research, Testing & Consultation

BRTC NO : 1102-91414/CE/22-23 Dated: 17/05/2023

Ref. No. : 28.17.0000.311.48.001.23/687 Dated: 16/05/2023

Sent by : Engineer Md Obaidullah, General Manager, (UGO&M), MGMCL, Maddhapara, Dinajpur

Project : Different Tests of MGMCL Stone and Imported Stones.

SUMMARY OF TEST RESULTS

Name of the Test	*MGMCL*	*India-Pakur*	*Bhutan-Stone*	*India-Stone*	*Panchagarh Stone*
Water Absorption (%)	0.40	1.40	0.60	*0.50*	*0.80*
Unit Weight (kg/m^3)	1560	1680	1570	*1620*	*1640*
Los Angeles Abrasion Value (%)	31	10	25	*35*	*36*
Aggregate Impact Value (AIV %)	28	17	26	*34*	*30*
Aggregate Crushing Value (ACV %)	22	18	18	*26*	*25*
Ten Percent Fines Value (KN)	160	190	240	*130*	*140*
7 days Compressive Strength (psi) 1:2:4 (w/c = 0.45)	3410	2610	3510	*3060*	*2790*
28 days Compressive Strength (psi) 1:2:4 (w/c = 0.45)	4490	4190	4290	*4120*	*3810*

1

hQF45bmeF

Countersigned by:

Dr. Hasib Mohammed Ahsan
Test-In-Charge
Civil Engineering Department, BUET

Test Performed by:

15/07/23

Dr. Md Mizanur Rahman
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