

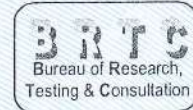
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DEPARTMENT OF CIVIL ENGINEERING

Mobile: 01819 557964; PABX: 966 5650-80 Ext. 7226

TRANSPORTATION ENGINEERING LABORATORY



BRTC No. : **1101-86544 /CE /18-19 ; Dt: 2/5/2018**

Sent by : Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite Mining Company Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Kha); Dt: 25/4/2018

Project : —

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

Sample ID: **05-20 mm**

Test : **Salinity/Chloride Content Test**

Date of Test : 10/5/2018

TEST REPORT

Test	Result
Water Soluble Chloride (%) =	0.0018

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil

Professor

Department of Civil Engineering

BUET, Dhaka-1000, Bangladesh



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Test Performed by:



Dr. Md. Haduzzaman

Associate Professor

Department of Civil Engineering

BUET, Dhaka-1000, Bangladesh

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Ref. No. : 28.17.0000.300.48.001.19/60(Kha); Dt: 25/4/2018

Project : -

Sample : Crushed Stone (Stone Chips)

Sample ID: 05-20 mm

Test : Sulphate Content Test

Date of Test : 10/5/2018

TEST REPORT

Test	Result
Water Soluble Sulphate (%) =	0.0032 %

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Dr. Md. Hadiuzzaman
Associate Professor
Department of Civil Engineering
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Ref. No. : 28.17.0000.300.48.001.19/60(Kha); Dt: 25/4/2019

Sample ID : 05-20 mm

Sample : Stone Chips: Samples were received in sealed condition.

Test : COATING AND STRIPPING TEST [ASTM / AASHTO]

Date of : 10/5/2019 - 13/5/2019
Test

TEST REPORT

Test Sl. No.	Name of the Test	Test Condition (If Any)	AASHTO Test Designation	Result
1.	Coating and Striping	-	T-182-84(93)	Above 95 (ninety five) percent

Countersigned by:

Dr. Abu Siddique.
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

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Test Performed by:

Dr. Md. Haduzzaman
Associate Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Ref. No. : 28.17.0000.300.48.001.19/60(Kha); Dt: 25/4/2018
Project : -
Sample : Crushed Stone (Stone Chips) Sample ID: 05-20 mm
Test : Clay Lumps and Friable Particles [ASTM C 142]
Date of Test : 10/5/2018

TEST REPORT

Clay Lump and Friable Particles (deleterious substance)	0.09 %
--	--------

Notes: Samples were received in sealed condition.

Countersigned by :

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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



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Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019
Project : —
Sample : Stone Chips Sample ID: 05-20 mm
Test : Aggregate Impact Value [BS 812 (part 3) 1975]
Date of Test : 10/5/2019

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry)	Weight of material passing 2.36 mm sieve	Aggregate Impact Value
		(gm)	(gm)	%
Stone Chips	14 mm to 10 mm	2775	686	25

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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BRTC No. : 1101-86544 /CE /18-19 ; Dt: 2/5/2019

Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite Mining

Sent by : Company Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : _

Sample : Stone Chips

Sample ID: 05-20 mm

Test : Specific Gravity and Water Absorption (ASTM C127)

Date of Test : 10/5/2019

TEST REPORT

Sample Designation	Weight of oven dry sample	Weight of SSD sample	Weight of saturated sample in water	Bulk Specific Gravity (OD)	Absorption Capacity
	(gm)	(gm)	(gm)	(Relative Density)	(%)
Stone Chips	3106.7	3117.0	2004.7	2.79	0.30

Notes: Samples were received in sealed condition.

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Countersigned by:

Dr. Md. Abdul Jalil

Professor

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BUET, Dhaka-1000, Bangladesh



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Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : _

Sample : Stone Chips

Sample ID: 05-20 mm

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

Date of Test : 10/5/2019

TEST REPORT

Unit weight/Bulk Density (kg/m ³) =	1540 kg/ m ³
Voids in Aggregate, compacted by Rodding(%) =	11 %

Notes: Samples were received in sealed condition.

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Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2018
Project : —
Sample : Crushed Stone (Stone Chips) Sample ID: 05-20 mm
Test : Materials Finer than No. 200 Sieve [ASTM C 117]
Date of Test : 10/5/2018

TEST REPORT

Materials Finer than # 200 Sieve (%) =

0.2 Percent

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



Test Performed by:

Dr. Md. Hadiuzzaman
Associate Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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BRTC No. : 1101-86544 /CE /18-19 ; Dt: 2/5/2019

Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite

Sent by : Mining Company Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : —

Sample : Crushed Stone (Stone Chips)

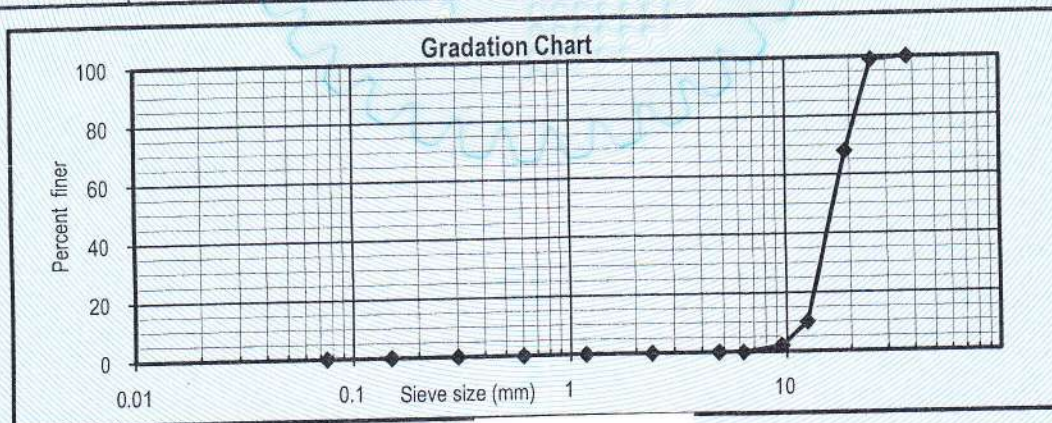
Sample ID: 05-20 mm

Test : Gradation of Aggregates [ASTM C136]

Date of Test : 10/5/2019

TEST REPORT

Sieve Size	Material Retained	Percent of Material Retained	Cumulative % Retained	Percent Finer	Fineness Modulus
mm	gm	%	%	%	
37.5	0.0	0	0	100	7.3 (Seven point three zero)
25.4	55.0	1	1	99	
19.05	3133.0	31	32	68	
12.5	5833.0	58	90	10	
9.5	806.0	8	98	2	
6.3	160.0	2	100	0	
4.75	0.0	0	100	0	
2.36	0.0	0	100	0	
1.18	0.0	0	100	0	
0.6	0.0	0	100	0	
0.3	0.0	0	100	0	
0.15	0.0	0	100	0	
0.075	0.0	0	100	0	
Pan	13.0	0	100	0	
Total	10000				



Notes: Samples were received in sealed condition.

Countersigned by:

(Signature)

Dr. Md. Abdul Jalil

Professor

Department of Civil Engineering

BUET, Dhaka-1000, Bangladesh



F7nAjm6bS

Test Performed by:

(Signature)

Dr. Md. Hadiuzzaman

Associate Professor

Department of Civil Engineering

BUET, Dhaka-1000, Bangladesh



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Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : -

Sample : Stone Chips Sample ID: 05-20 mm

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

Date of Test : 10/5/2019

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)	%
Stone Chips	20 mm to 14 mm	365	95	26

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Sent by : Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : --

Sample : Stone Chips

Sample ID: 05-20 mm

Test : FLAKINESS INDEX [BS812; Part1]

Date of Test : 10/5/2019

TEST REPORT

Sieve Size	Weight of material retained	Percent of material retained	Flaky Particles	Flakiness Index
mm	(gm)	%	(gm)	
63	---	---	---	28 %
50	0	0.0	---	
37.5	0	0.0	---	
28	0	0.0	---	
20	570	19.0	219	
14	1513	50.4	405	
10	731	24.4	175	
6.3	188	6.3	52	
Total	3002	100	851	

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : —

Sample : Stone Chips

Sample ID: 05-20 mm

Test : ELONGATION INDEX [BS812; Part1]

Date of Test : 10/5/2019

TEST REPORT

Sieve Size	Weight of material retained (gm)	Percent of material retained %	Elongated Particles (gm)	Elongation Index
mm	(gm)	%	(gm)	
63	---	---	---	43 %
50	---	---	---	
37.5	0	0.0	0	
28	0	0.0	0	
20	570	19.0	123	
14	1513	50.4	660	
10	731	24.4	418	
6.3	188	6.3	89	
Total	3002	100	1290	

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

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Ref. No. : 28.17.0000.300.48.001.19/60(Ka); Dt: 25/4/2019

Project : -

Sample : Stone Chips

Sample ID: 05-20 mm

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

Date of Test : 10/5/2019

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry)	Applied Load	Weight of material passing 3.35 mm sieve	Ten Percent Fines Value
		(gm)	(KN)	(gm)	
Stone Chips	20 mm to 14 mm	2775	160	345	140 KN

Notes: Samples were received in sealed condition.

Countersigned by :

Dr. Md. Abdul Jalil
Professor
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BUET, Dhaka-1000, Bangladesh



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Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite

Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : -

Sample : Stone Chips Sample ID: 40-60 mm

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

Date of Test : 10/5/2019

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry)	Weight of material passing 5.0 mm sieve	Aggregate Crushing Value
		(gm)	(gm)	%
Stone Chips	28 mm to 20 mm	2833	760	27

Notes: Samples were received in sealed condition.

Countersigned by :

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019
Project : -
Sample : **Stone Chips** Sample ID: 40-60 mm
Test : **Aggregate Impact Value [BS 812 (part 3) 1975]**
Date of Test : 10/5/2019

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry)	Weight of material passing 5.0 mm sieve	Aggregate Impact Value
		(gm)	(gm)	%
Stone Chips	28 mm to 20 mm	355	94	26

Notes: Samples were received in sealed condition.

Countersigned by:

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

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Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : _

Sample : Stone Chips

Sample ID: 40-60 mm

Test : Los Angeles Abrasion Value [ASTM C-535-03]

Date of Test : 10/5/2019

TEST REPORT

Type of Aggregate	Grading Type	Total Weight of Aggregate	Aggregate Passing 1.70 mm Sieve	Los Angeles Abrasion Value
		gm	gm	%
Stone Ballast	2	10000	2300	23

Notes: Samples were received in sealed condition.

Countersigned by :

Dr. Md. Abdul Jalil
Professor
Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh



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Test Performed by :

Dr. Md. Hadiuzzaman
Associate Professor
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DEPARTMENT OF CIVIL ENGINEERING
Mobile: 01819 557964; PABX: 966 5650-80 Ext. 7226



TRANSPORTATION ENGINEERING LABORATORY

BRTC No. : 1101-86544 /CE /18-19 ; Dt: 2/5/2019

Sent by : Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite Mining Company Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : —

Sample : Stone Chips

Sample ID: 40-60 mm

Test : Specific Gravity and Water Absorption (ASTM C127)

Date of Test : 10/5/2019

TEST REPORT

Sample Designation	Weight of oven dry sample	Weight of SSD sample	Weight of saturated sample in water	Bulk Specific Gravity (OD)	Absorption Capacity
	(gm)	(gm)	(gm)	(Relative Density)	(%)
Stone Chips	3107.3	3111.7	2007.5	2.81	0.10

Notes: Samples were received in sealed condition.

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Countersigned by:

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Test Performed by:

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Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : —

Sample : Stone Chips Sample ID: 40-60 mm

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

Date of Test : 10/5/2019

TEST REPORT

Unit weight/Bulk Density (kg/m ³) =	1570 kg/ m ³
Voids in Aggregate, compacted by Rodding(%) =	9 %

Notes: Samples were received in sealed condition.

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TRANSPORTATION ENGINEERING LABORATORY



BRTC No. : 1101-86544 /CE /18-19 ; Dt: 2/5/2018

Sent by : Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite Mining Company Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2018

Project : --

Sample : Crushed Stone (Stone Chips)

Sample ID: 40-60 mm

Test : Materials Finer than No. 200 Sieve [ASTM C 117]

Date of Test : 10/5/2018

TEST REPORT

Materials Finer than # 200 Sieve (%) =

0.07 Percent

Notes: Samples were received in sealed condition.

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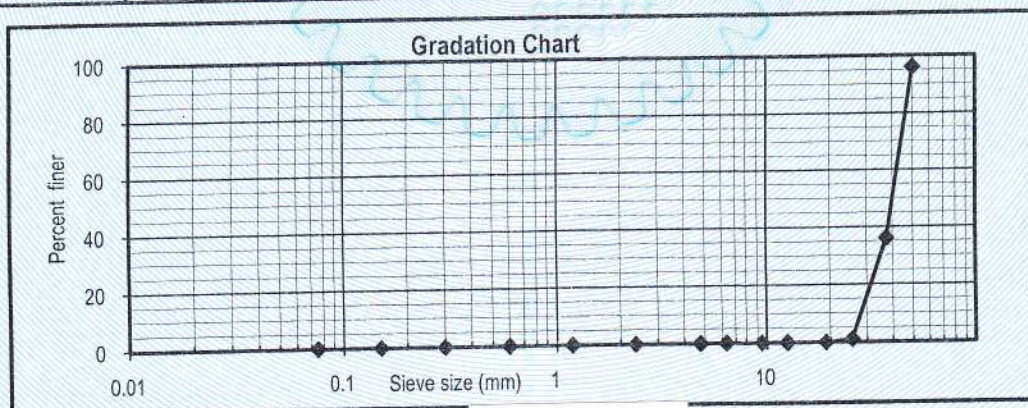
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BRTC No. : 1101-86544 /CE /18-19 ; Dt: 2/5/2019
 Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite
 Sent by : Mining Company Limited.
 Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019
 Project : -
 Sample : Crushed Stone (Stone Chips) Sample ID: 40-60 mm
 Test : Gradation of Aggregates [ASTM C136]
 Date of Test : 10/5/2019

TEST REPORT

Sieve Size	Material Retained	Percent of Material Retained	Cumulative % Retained	Percent Finer	Fineness Modulus
mm	gm	%	%	%	
50	428.0	4	4	96	8.64 (Eight point six four)
37.5	5997.0	60	64	36	
25.4	3522.0	35	99	1	
19.05	50.0	1	100	0	
12.5	0.0	0	100	0	
9.5	0.0	0	100	0	
6.3	0.0	0	100	0	
4.75	0.0	0	100	0	
2.36	0.0	0	100	0	
1.18	0.0	0	100	0	
0.6	0.0	0	100	0	
0.3	0.0	0	100	0	
0.15	0.0	0	100	0	
0.075	0.0	0	100	0	
Pan	3.0	0	100	0	
Total	10000				



Notes: Samples were received in sealed condition.

Countersigned by:

[Signature]

Dr. Md. Abdul Jalil
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Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : _

Sample : Stone Chips Sample ID: 40-60 mm

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

Date of Test : 10/5/2019

TEST REPORT

Type of Aggregate	Sample Size	Weight of sample (Surface Dry)	Applied Load	Weight of material passing 5.0 mm sieve	Ten Percent Fines Value
		(gm)	(KN)	(gm)	
Stone Chips	28 mm to 20 mm	2833	150	320	140 KN

Notes: Samples were received in sealed condition.

64



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Countersigned by:

Dr. Md. Abdul Jalil
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Department of Civil Engineering
BUET, Dhaka-1000, Bangladesh

Test Performed by:

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Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite Mining Company Limited.

Sent by :

Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : _

Sample : Stone Chips

Sample ID: 40-60 mm

Test : ELONGATION INDEX [BS812; Part1]

Date of Test : 10/5/2019

TEST REPORT

Sieve Size	Weight of material retained	Percent of material retained	Elongated Particles	Elongation Index
mm	(gm)	%	(gm)	
63	---	---	---	31 %
50	1922	38.4	0	
37.5	2561	51.2	1309	
28	500	10.0	251	
20	17	0.3	0	
14	0	0.0	0	
10	0	0.0	0	
6.3	0	0.0	0	
Total	5000	100	1560	

Notes: Samples were received in sealed condition.

Countersigned by:

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Manager (Sales & Marketing) on-behalf of General Manager (Operation), Maddhapara Granite Mining Company

Sent by : Limited.

Ref. No. : 28.17.0000.300.48.001.19/60(Ga); Dt: 25/4/2019

Project : —

Sample : Stone Chips

Sample ID: 40-60 mm

Test : FLAKINESS INDEX [BS812; Part1]

Date of Test : 10/5/2019

TEST REPORT

Sieve Size	Weight of material retained	Percent of material retained	Flaky Particles	Flakiness Index
mm	(gm)	%	(gm)	
63	---	---	---	31 %
50	1922	38.4	831	
37.5	2561	51.2	738	
28	500	10.0	0	
20	17	0.3	0	
14	0	0.0	0	
10	0	0.0	0	
6.3	0	0.0	0	
Total	5000	100	1569	

Notes: Samples were received in sealed condition.

Countersigned by:

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