



Certificate # 3512.05

**Construction Materials Testing Laboratory
Jubail Branch**P.O. Box 2165 – Tel.: (013) 341 2700
Dammam 31451 – Fax.: (013) 341 2701
Saudi Arabia – E-mail.: fsljubail@fugro-suhaimi.com

السحيمي - فيغرو

SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	14429
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	10 July 2016
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	20 July 2016

Properties:

Properties Tested	Test Method	Results	SCECO Specs.
Sieve analysis	ASTM C-136	See Attached	--
Material finer than No. 200 sieve %	ASTM C-117	0.5	5.0 Max.
Clay lumps & friable particles %	ASTM C-142	0.39	1.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		7.9	--
Loss at 500 revolutions %		33.0	35 Max.
Ratio 100/500 rev.		0.24	0.25 max
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	10.3	18 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.609	--
SSD basis		2.568	--
Dry basis		2.543	--
Absorption		1.0	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114		
(NaCl), %		0.018	0.03 max
Acid soluble sulphate (SO ₃), %	BS-812 Part 118		
(SO ₄), %		0.030	
Flakiness index	BS-812	8.0	30 Max.
Elongation index	BS-812	10.9	45 Max.
Coal & lignite	ASTM C-123	NIL	0.5 Max.

Remarks:Tested By: Thomas Reviewed By: Imran Ahmed
CTTA # : 0194 CTTA # : 0556Laboratory Manager
Muhammad Nawaz CTTA # 0037

The copyright of this document is owned by Fugro-Suhaimi Ltd. It may not be reproduced except with prior written approval from the company.



Certificate # 3512.05

**Construction Materials Testing Laboratory
Jubail Branch**

P.O. Box 2165 - Tel.: (013) 341 2700
Dammam 31451 - Fax.: (013) 341 2701

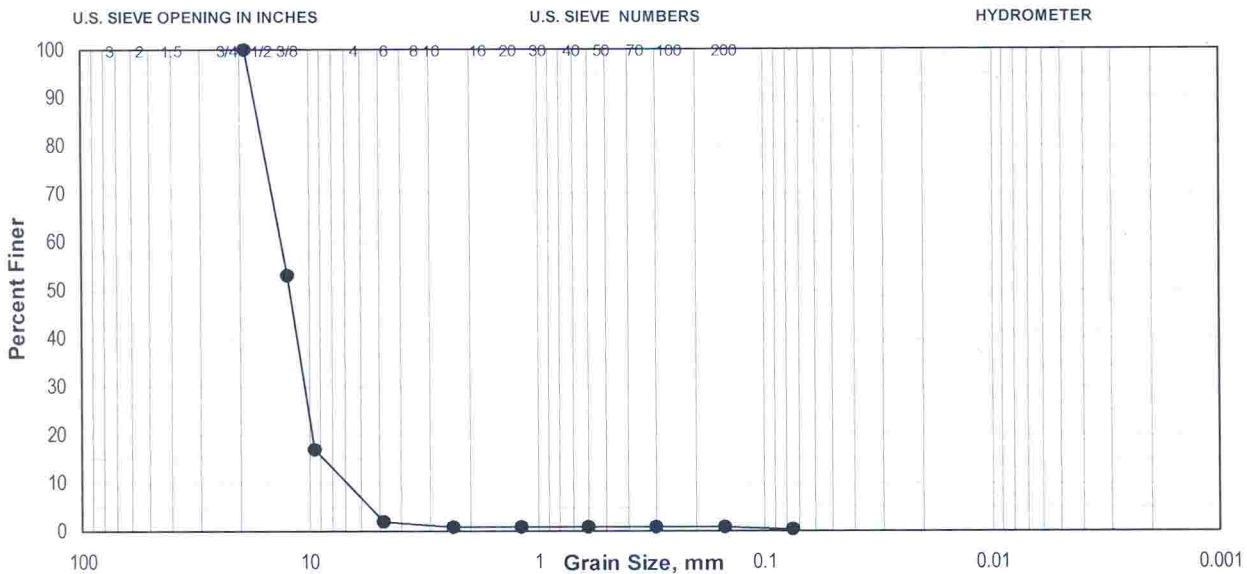
Saudi Arabia - E-mail: fsljubail@fugro-suhaimi.com



السحيمي - فيفرو

PARTICLE SIZE ANALYSIS TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	14429
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	10 July 2016
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Tested	11-12 July 2016
Method	ASTM C-136/117	Date Reported	20 July 2016



Gravel		Sand			Silt or Clay
Coarse	fine	Coarse	medium	fine	

Description of Sand / Gravel Particles:

Shape	Hardness	Specific Gravity

Sieve Size Inch(mm)	Passing %	Specification	Properties Tested		
			Item	Description	Result
1 (25.0 mm)					
3/4 (19 mm)	100				
1/2 (12.5 mm)	53				
3/8 (9.5 mm)	17				
#4 (4.75 mm)	2				
#8 (2.36 mm)	0.9				
#16 (1.18 mm)	0.9				
#30 (0.600 mm)	0.9				
#50 (0.300 mm)	0.9				
#100 (0.150 mm)	0.9				
#200 (0.075 mm)	0.5				

Remarks	
----------------	--

Tested By: Thomas [Signature] Reviewed By: Imran Ahmed
CTTA # : 0194 [Signature] CTTA # : 0556



Laboratory Manager
Muhammad Nawaz CTTA # 0037

The copyright of this document is owned by Fugro-Suhaimi Ltd. It may not be reproduced except with prior written approval from the company.

SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	14430
Material	3/8" (10- mm) Coarse Aggregate	Date Sampled	10 July 2016
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	20 July 2016

Properties:

Properties Tested	Test Method	Results	SCECO Specs.
Sieve analysis	ASTM C-136	See Attached	--
Material finer than No. 200 sieve %	ASTM C-117	0.6	5.0 Max.
Clay lumps & friable particles %	ASTM C-142	0.52	1.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		8.7	--
Loss at 500 revolutions %		36.2	35 Max.
Ratio 100/500 rev.		0.24	0.25 max
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	14.9	18 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.612	--
SSD basis		2.563	--
Dry basis		2.533	--
Absorption		1.2	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114		
(NaCl), %		0.011	0.03 max
Acid soluble sulphate (SO ₃), %	BS-812 Part 118		
(SO ₄), %		0.160	0.5 max
Flakiness index	BS-812	9.1	30 Max.
Elongation index	BS-812	15.3	45 Max.
Coal & lignite	ASTM C-123	NIL	0.5 Max.

Remarks:

Tested By: Thomas
CTTA # : 0194

Reviewed By: WN
CTTA # : -



Laboratory Manager
Muhammad Nawaz CTTA # 0037

The copyright of this document is owned by Fugro-Suhaimi Ltd. It may not be reproduced except with prior written approval from the company.

