



Certificate # 3512.05

Construction Materials Testing Laboratory **FUGRO - SUHAIMI**
Jubail Branch

P.O. Box 2165 - Tel.: (013) 341 2700
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السحيمي - فيغرو

SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	13842
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	05 May 2016
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	17 May 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	0.74	5.0 Max.
Clay lumps & friable particles %	ASTM C-142	0.35	1.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		8.2	--
Loss at 500 revolutions %		32.8	35 Max.
Ratio 100/500 rev.		0.25	0.25 max
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	10.4	18 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.613	--
SSD basis		2.572	--
Dry basis		2.542	--
Absorption		1.0	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114		
(NaCl), %		0.015	0.03 max
		0.025	
Acid soluble sulphate (SO ₃), %	BS-812 Part 118		
(SO ₄), %		0.127	
		0.127	0.5 max
Flakiness index	BS-812	10.9	30 Max.
Elongation index	BS-812	14.4	45 Max.
Coal & lignite	ASTM C-123	NIL	0.5 Max.

Remarks:

Tested By: Thomas Reviewed By: Imran Ahmed
CTTA # : 0194 . CTTA # : 0556



Laboratory Manager
Muhammad Nawaz CTTA # 0037

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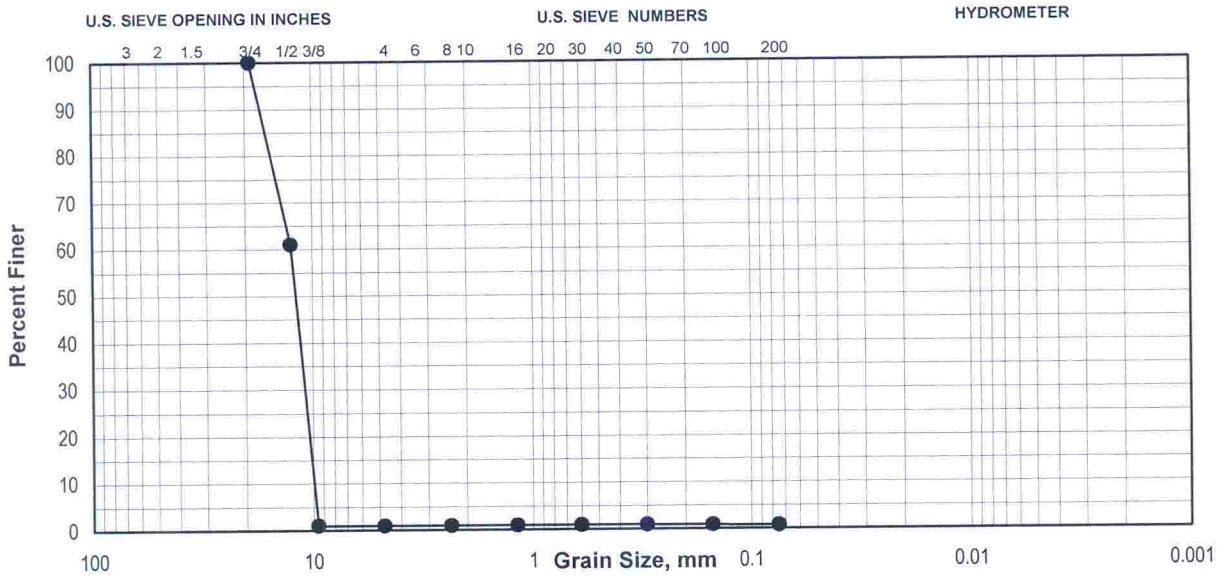
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السحيمي - فيفرو

PARTICLE SIZE ANALYSIS TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	13842
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	05 May 2016
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Tested	07-08 May 2016
Method	ASTM C-136/117	Date Reported	17 May 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)	100				
3/4 (19 mm)	61				
1/2 (12.5 mm)	16				
3/8 (9.5 mm)	1				
#4 (4.75 mm)	0.92				
#8 (2.36 mm)	0.92				
#16 (1.18 mm)	0.92				
#30 (0.600 mm)	0.92				
#50 (0.300 mm)	0.87				
#100 (0.150 mm)	0.74				
#200 (0.075 mm)					

Remarks

Tested By: Thomas Reviewed By: Imran Ahmed
CTTA # : 0194 CTTA # : 0556



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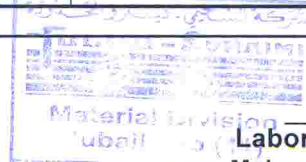
السحيمي - فيغرو

SUMMARY OF TEST REPORT

Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	13843
Material	3/8" (10- mm) Coarse Aggregate	Date Sampled	05 May 2016
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	17 May 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	0.85	5.0 Max.
Clay lumps & friable particles %	ASTM C-142	0.46	1.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		8.6	--
Loss at 500 revolutions %		34.4	35 Max.
Ratio 100/500 rev.		0.25	0.25 max
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	15.3	18 Max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.614	--
SSD basis		2.565	--
Dry basis		2.534	--
Absorption		1.2	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), %		0.161	0.5 max
Flakiness index	BS-812	10.2	30 Max.
Elongation index	BS-812	14.4	45 Max.
Coal & lignite	ASTM C-123	NIL	0.5 Max.

Remarks:Tested By: Thomas Reviewed By: WN
CTTA # : 0194 . CTTA # : -**Laboratory Manager**
Muhammad Nawaz CTTA # 0037

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