



Certificate # 3512.05

**Construction Materials Testing Laboratory  
Jubail Branch**P.O. Box 2165 – Tel.: (013) 341 2700  
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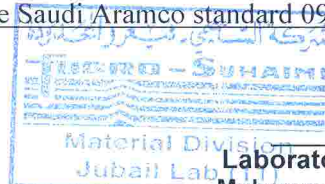
السحيمي - فيفرو

**SUMMARY OF TEST REPORT**

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

**Properties:**

Properties Tested	Test Method	Results	S. Aramco Specification
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	5.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		79	--
Loss at 500 revolutions %		33.0	40 max.
Ratio 100/500 rev.		0.24	--
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	10.3	25.0 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		
		0.018	0.03 max
Acid soluble sulphate (SO <sub>3</sub> ), %	BS-812 Part 118		
		0.172	0.40 Max
Flakiness index	BS-812	8.0	--
Elongation index	BS-812	10.9	--
Coal & lignite	ASTM C-123	Nil	--

**Remarks:** All test results indicate compliance with the Saudi Aramco standard 09-SAMSS-088.Tested By: Thomas  
CTTA # : 0194Reviewed By: Imran Ahmed  
CTTA # : 0556Laboratory Manager  
Muhammad Nawaz CTTA # 0037

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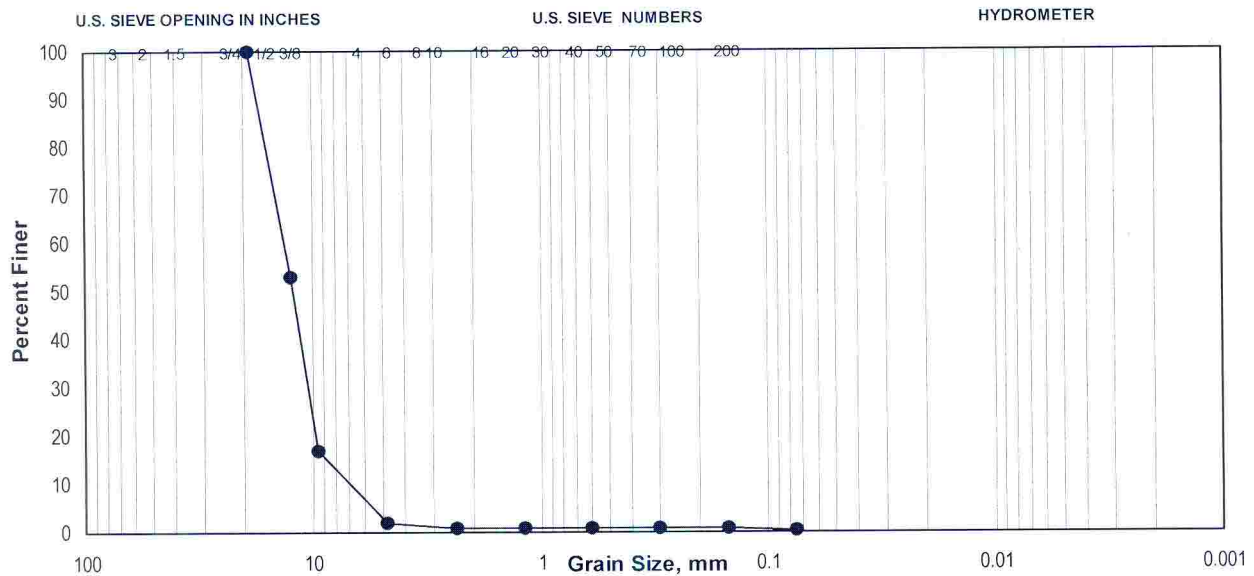
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السحيمي - فيغرو

**PARTICLE SIZE ANALYSIS TEST REPORT**

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



Gravel		Sand			Silt or Clay
Coarse	fine	Coarse	medium	fine	

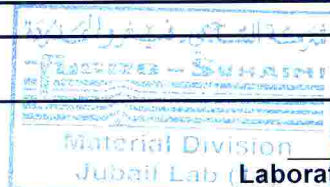
**Description of Sand / Gravel Particles:**

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



[Signature]  
Laboratory Manager  
Muhammad Nawaz CTTA # 0037

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السحيمي - فيغرو

**SUMMARY OF TEST REPORT**

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

**Properties:**

Properties Tested	Test Method	Results	S. Aramco Specification
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	5.0 max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		8.7	--
Loss at 500 revolutions %		36.2	40 max.
Ratio 100/500 rev.		0.24	--
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	14.9	25.0 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		
(Cl), %		0.011	0.03 max
Acid soluble sulphate (SO <sub>3</sub> ), %	BS-812 Part 118	0.160	0.40 Max
Flakiness index	BS-812	9.1	--
Elongation index	BS-812	15.3	--
Coal & lignite	ASTM C-123	Nil	--

**Remarks:** All test results indicate compliance with the Saudi Aramco standard 09-SAMSS-088.Tested By: Thomas [Signature] Reviewed By: Imran Ahmed  
CTTA # : 0194 [Signature] CTTA # : 0556Laboratory Manager  
Muhammad Nawaz CTTA # 0037

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