

### SUMMARY OF TEST REPORT

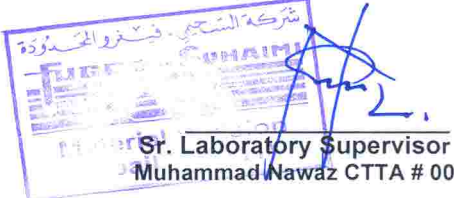
Client	A.H. Al Marhoon & Bros. Co.	Job No.	SA08-3012
Project	Concrete Batch Plant, Rahima	Lab No.	12257
Material	3/4" (20 mm) Coarse Aggregate	Date Sampled	02 Dec 2015
Source	Al Osais, Abuhadriya (Sampled by FSL)	Date Reported	16 Dec 2015

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	0.57	5.0 max.
Clay lumps & friable particles %	ASTM C-142	0.30	5.0 Max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		8.3	--
Loss at 500 revolutions %		32.2	40 max.
Ratio 100/500 rev.		0.26	--
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	8.9	25.0 max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.618	--
SSD basis		2.577	--
Dry basis		2.552	--
Absorption		1.0s	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114		
(Cl), %		0.012	0.03 max
Acid soluble sulphate (SO <sub>3</sub> ), %	BS-812 Part 118	0.197	0.40 Max
Flakiness index	BS-812	7.7	--
Elongation index	BS-812	9.3	--
Coal & lignite	ASTM C-123	NIL	--

Remarks: All test results indicate compliance with the Saudi Aramco standard 09-SAMSS-088.

Tested By: CBB Reviewed By: Imran Ahmed  
CTTA # : 0428 CTTA # : 0556



Sr. Laboratory Supervisor  
Muhammad Nawaz CTTA # 0037

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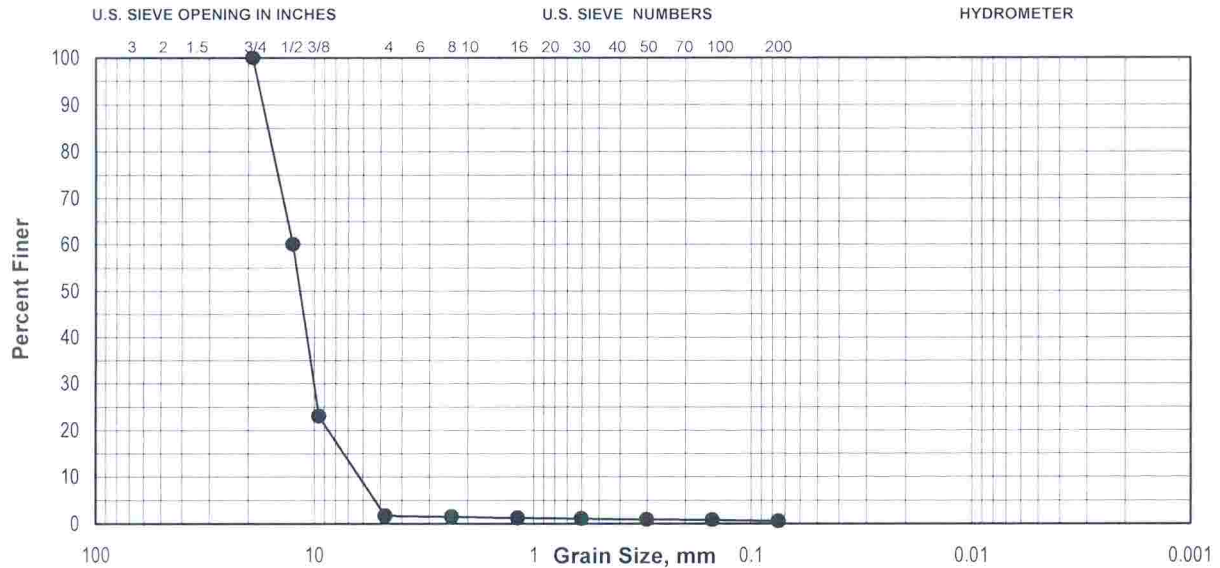
**Construction Materials Testing Laboratory**  
**Jubail Branch**

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**PARTICLE SIZE ANALYSIS TEST REPORT**

<b>Client</b>	<b>A.H. Al Marhoon &amp; Bros. Co.</b>	<b>Job No.</b>	SA08-3012
<b>Project</b>	Concrete Batch Plant, Rahima	<b>Lab No.</b>	12257
<b>Material</b>	3/4" (20 mm) Coarse Aggregate	<b>Date Sampled</b>	02 Dec 2015
<b>Source</b>	Al Osais, Abuhadriya (Sampled by FSL)	<b>Date Tested</b>	05-06 Dec 2015
<b>Method</b>	ASTM C-136/117	<b>Date Reported</b>	16 Dec . 2015



Gravel		Sand			Silt or Clay
Coarse	fine	Coarse	medium	fine	

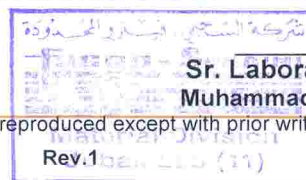
**Description of Sand / Gravel Particles:**

Shape	Hardness	Specific Gravity

Sieve Size Inch(mm)	Passing %	Specification	Properties Tested		
			Item	Description	Result
1 (25.0 mm)					
3/4 (19 mm)					
1/2 (12.5 mm)	100				
3/8 (9.5 mm)	60				
#4 (4.75 mm)	23				
#8 (2.36 mm)	1.7				
#16 (1.18 mm)	1.5				
#30 (0.600 mm)	1.2				
#50 (0.300 mm)	1.1				
#100 (0.150 mm)	0.9				
#200 (0.075 mm)	0.83				

**Remarks**

Tested By: CBB Reviewed By: Imran Ahmed  
 CTTA # : 0428 CTTA # : 0556



**Sr. Laboratory Supervisor**  
**Muhammad Nawaz CTTA # 0037**

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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>	12258
<b>Material</b>	3/8" (10- mm) Coarse Aggregate	<b>Date Sampled</b>	02 Dec 2015
<b>Source</b>	Al Osais, Abuhadriya (Sampled by FSL)	<b>Date Reported</b>	16 Dec. 2015

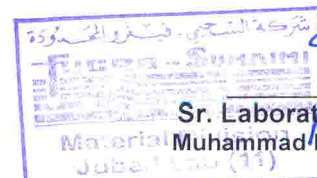
**Properties:**

Properties Tested	Test Method	Results	S. Aramco Specification
Sieve analysis	ASTM C-136	See Attached	--
Material finer than No. 200 sieve %	ASTM C-117	0.93	5.0 max.
Clay lumps & friable particles %	ASTM C-142	0.49	5.0 max.
Los Angeles Abrasion	ASTM C-131		
Loss at 100 revolutions %		8.35	--
Loss at 500 revolutions %		33.8	40 max.
Ratio 100/500 rev.		0.25	--
Magnesium sulfate soundness loss (5 cycles) %	ASTM C-88	13.4	25.0 max.
Specific gravity and absorption	ASTM C-127		
Apparent		2.627	--
SSD basis		2.568	--
Dry basis		2.532	--
Absorption		1.4	2.5 max
Acid soluble chloride, (Cl), %	ASTM C 114	0.016	0.03 max
Acid soluble sulphate (SO <sub>3</sub> ), %	BS-812 Part 118	0.289	0.40 Max
Flakiness index	BS-812	11.5	--
Elongation index	BS-812	15.7	--
Coal & lignite	ASTM C-123	NIL	--

**Remarks:** All test results indicate compliance with the Saudi Aramco standard 09-SAMSS-088.

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CTTA # : 0428

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