



**FROEHLING & ROBERTSON, INC**  
 GEOTECHNICAL • ENVIRONMENTAL • MATERIALS  
 ENGINEERS • LABORATORIES  
 “OVER ONE HUNDRED YEARS OF SERVICE”

3015 Dumbarton Road  
 Richmond, Virginia 23228  
 Telephone (804) 264-2701 Fax: (804) 264-3549

May 18, 2007

**AGGREGATE TEST REPORT**

**PROJECT NO.:** F60-820T  
**CONTROL NO.:** 60-05-95008  
**CLIENT:** Solite - LLC  
 State Route 652, P.O. Box 68  
 Arvonnia, Virginia 23004  
 Attn: Ray Shores  
**PROJECT:** Aggregate Certification, Virginia Solite 3/8" to #8  
**STANDARDS:** ASTM C 330-04, AASHTO M 195-04, and UL 618

Dear Ray:

Froehling & Robertson, Inc. is pleased to submit the results of laboratory testing on a 3/8" to #8 aggregate sample. The test results are shown in the tables below.

**SIEVE ANALYSIS (ASTM 136)**

SIEVE SIZE (mm)	% PASSING	ASTM C 330 TABLE 1
1/2" (12.5)	100	100
3/8" (9.5)	100	80-100
#4 (4.75)	21.5	5 – 40
#8 (2.36)	11.7	0 – 20
#16 (4.75)	8.6	0-10

**PHYSICAL PROPERTIES**

TEST	RESULTS	ASTM C 330 SPECIFICATIONS
Specific Gravity: C 127	1.60	---
Absorption, %: C 127	16.7	---
Organic Impurities, Color: C 40	No Change (0)	< 3
Clay Lumps, %: C 142	0	≤ 2
Loss on Ignition, %: C 618	0.01	< 5
Popouts: C 151	None	None
Dry Loose Unit Wt., lbs/ft <sup>3</sup> (kg/m <sup>3</sup> ): C 29	42.4 (678)	< 55 (880)
Dry Rodded Unit Wt., lbs/ft <sup>3</sup> (kg/m <sup>3</sup> ): C 29	47.5 (760)	---
Shrinkage @ 28 Days, %: C 157	0.062	≤ 0.07
Stain Test, Index: C 641	20 (No Stain)	< 60

The above results meet the requirements of ASTM C330-04, AASHTO M195-04 and UL 618.



### MIX PROPERTIES

MATERIALS	lb/yd <sup>3</sup> (kg/m <sup>3</sup> )
Portland Cement, lbs (kg)	564 (335)
Coarse Aggregate, lbs (kg)	925 (512)
Fine Aggregate, lbs (kg)	1,407 (838)
Water, lbs (kg)	292 (174)
Air Entrainment, oz (ml)	0.3 (19.2)
Water Reducer, oz (ml)	16.9 (650)
Slump, in (mm)	4.0 (89.6)
Air Content, %	5.0 (7.0)
Plastic Unit Weight, lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )	120.0 (1,920)
28 Day Air Dry Unit Weight, lbs/ft <sup>3</sup> (kg/m <sup>3</sup> )	113.1 (1,810)

### COMPRESSIVE STRENGTH RESULTS (ASTM C 39)

CYLINDER	AGE, DAYS	STRENGTH, psi (Mpa)	AVERAGE
1	7	3,040 (20.9)	3,110 (21.3)
2	7	3,170 (21.8)	
3	7	3,120 (21.4)	
4	28	4,470 (30.7)	4,300 (29.5)
5	28	4,200 (28.8)	
6	28	4,240 (29.1)	

### TENSILE SPLITTING STRENGTH RESULTS (ASTM C 496)

CYLINDER	AGE, DAYS	STRENGTH, psi (Mpa)	AVERAGE
7	28	485 (3.33)	(3.23)
8	28	485 (3.33)	
9	28	475 (3.26)	
10	28	460 (3.14)	
11	28	450 (3.09)	
12	28	450 (3.08)	
13	28	450 (3.10)	
14	28	490 (3.38)	

Should you have any questions about this report or require additional information or testing, please contact us at your convenience.

Respectfully Submitted,  
**FROEHLING & ROBERTSON, INC.**

Robert A. Hill, III, P.E.  
 CMT Manager