



August 25, 2010

Mr. Jody Wall  
Carolina Stalite  
P.O. Box 186  
Gold Hill, North Carolina 28071

Phone: (704) 279-8614

Subject:       **Laboratory Test Report - ASTM C 1260 on Lightweight Aggregate**  
                  **TEC Services Project Number: TEC 05-0514**  
                  **TEC Services Laboratory Number: 10-137**

Dear Mr. Wall:

Testing Engineering & Consulting Services Inc. (TEC Services) is pleased to present this report of our testing of potential alkali reactivity of the coarse aggregate submitted to our laboratory on June 15, 2010. It is our understanding that the sample of aggregate is representative of lightweight aggregate from Gold Hill, NC. The testing was started on June 15, 2010 and run for 14 days (16 days after casting) in accordance with ASTM C 1260-07 *Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)*. The results of this testing pertain only to the samples tested. This work was performed in accordance with the terms and conditions of our service agreement (TEC-PRO-04-0514) dated March 9, 2005.

Mix materials and proportions are presented in Table 1. The gradation of the aggregate used in preparing the length change specimens was in accordance with Table 1 in ASTM C 1260. Aggregate grading is presented in Table 2. Test results are reported in Table 3. A graphical representation of the results is provided in Figure 1. No significant features of the specimens were observed during or after the test.

**Table 1 – Mix Proportions**

Material	Type	Amount (g)
Cement	Buzzi – Portland Type I	440
Aggregate	Carolina Stalite	631.4*
Water	Distilled	206.8

\* Aggregates with a relative density (OD) below 2.45, are proportioned using: Aggregate proportion =  $2.25 \times D/2.65$

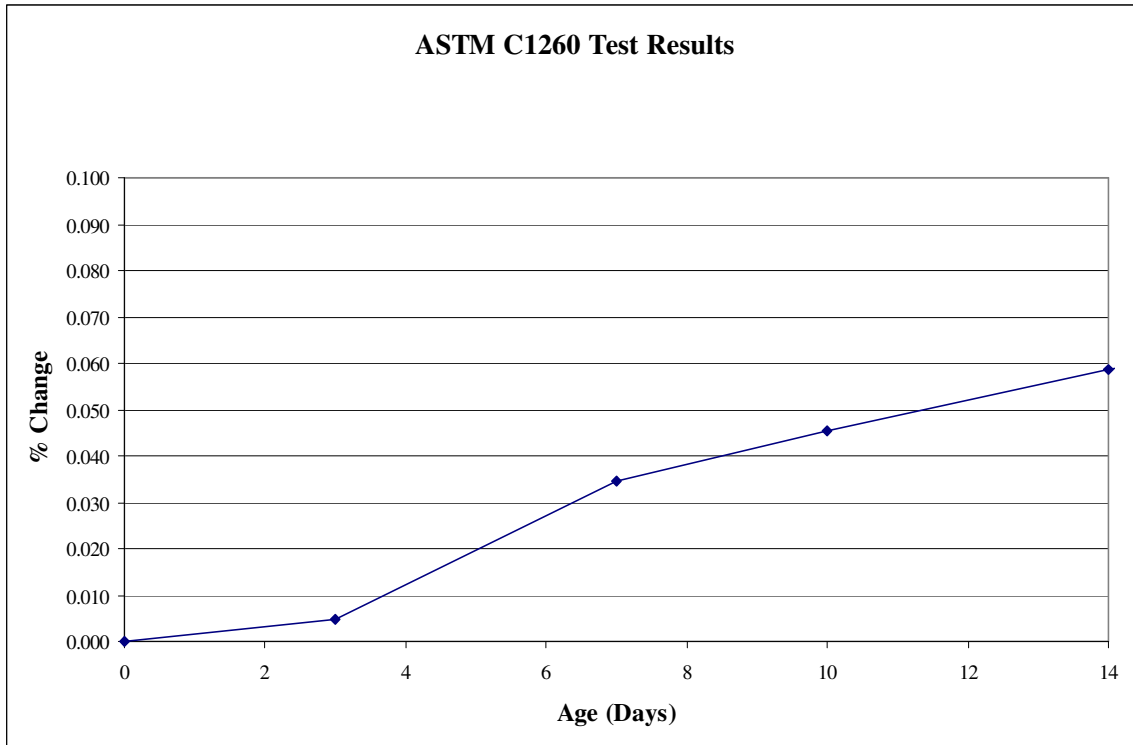
**Table 2 – Aggregates Grading**

AGGREGATES GRADING, grams		
Sieve	Percentage	Amount
No.	Required	Required
No. 8	10	63.14
No. 16	25	157.85
No. 30	25	157.85
No. 50	25	157.85
No. 100	15	94.71
<b>Sum</b>	<b>100</b>	<b>631.40</b>

**Table 3 – Average length change of three specimens for the aggregate source**

Age (days)	% Change			Average % Change
	No. 1	No. 2	No. 3	
0	0.000	0.000	0.000	0.000
3	0.001	0.010	0.003	0.005
7	0.031	0.038	0.035	0.035
12	0.040	0.046	0.050	0.045
14	0.056	0.062	0.058	0.059

**Figure 1. Length change during the 14-day exposure period**



According to the appendix in C1260, expansions of less than 0.10% after 14 days (16 days after casting) are indicative of innocuous behavior in most cases.

We appreciate the opportunity to provide our services to you on this project. Should you have any questions or comments regarding this report, please feel free to contact us at your convenience.

Sincerely,

**Testing, Engineering & Consulting Services, Inc.**

Steven J. Maloof  
Project Manager

Shawn P. McCormick  
Laboratory Manager