



September 21, 2005

Carolina Stalite Company
P.O. Box 186
Gold Hill, North Carolina 28071

Attention: Mr. Jody R. Wall, P.E.

Reference: **LABORATORY TEST RESULTS**
Physical Testing of Granular Backfill Material
S&ME Project No. 1433-05-721
S&ME Proposal No. 3305908

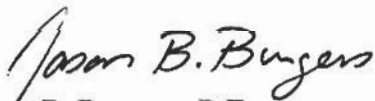
Dear Mr. Wall:

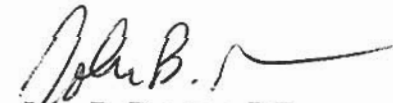
S&ME has completed the laboratory testing on the granular backfill material that you delivered to our office on September 6, 2005. The testing included a gradation including a No. 200 wash, Magnesium Sulfate soundness (four cycles), Los Angeles Abrasion, direct shear and loss on ignition in accordance with S&ME Proposal No. 3305908. The results of the testing are included in the attachments.

S&ME is pleased to provide you with these laboratory testing services. If you should have any questions or require further testing, please call.

Sincerely,

S&ME, Inc.


Jason B. Burgess, P.E.
Project Engineer


John B. Pearson, P.E.
Laboratory Manager

Attachments
JBB/JBP/jbb

S&ME, Inc., Knoxville Branch
1413 Topside Road
Louisville, Tennessee 37777

(865) 970-0003
(865) 970-2312 fax
www.smeinc.com

Customer: Carolina Stalite Company

Proposal Number: 3305908

Address: P.O. Box 186

Material: Granular Backfill Material

City, State, Zip: Gold Hill, NC 28071

S&ME Project No.: 1433-05-721

Date Received: 9-06-05

**Gradation including a No. 200 Wash
ASTM C117 and ASTM C136**

Sieve Size	Percent Passing (%)	AASHTO M195-00 19.0 to 4.75 mm Stone Specification (%)
1"	100	100
3/4"	96	90 – 100
1/2"	59	---
3/8"	34	10 – 50
No. 4	7	0 – 15
No. 8	5	---

Percent Passing the No. 200 sieve: 2.2 %

Physical Property	Test Designation	Test Results	Client Provided Requirements
Los Angeles Abrasion	ASTM C131	28 %	40 % maximum
Magnesium Sulfate Soundness	AASHTO T104 (four cycles)	0 %	30 % maximum
Angle of Internal Friction	ASTM D3080	44.6 °	38 ° minimum
Organic Content	ASTM D2974 Method D	0.04 %	0.1% maximum

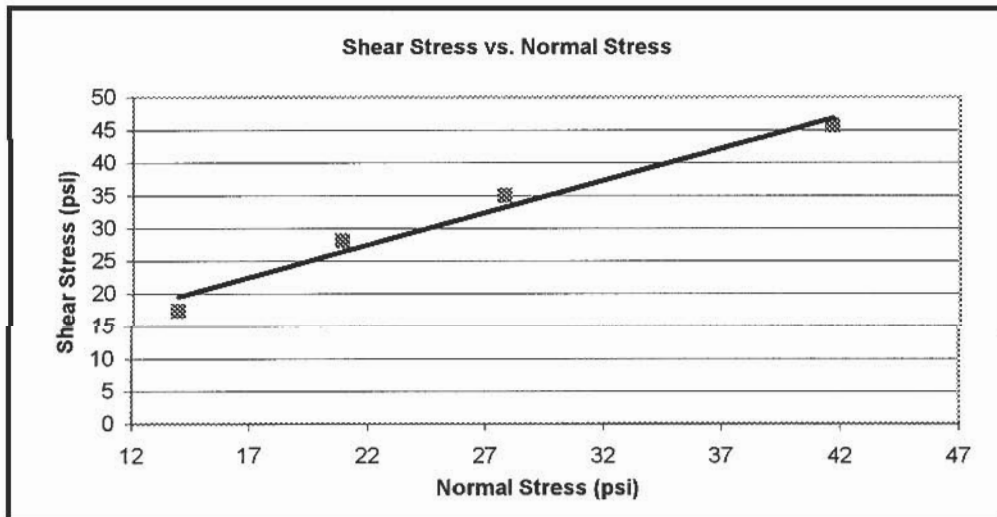
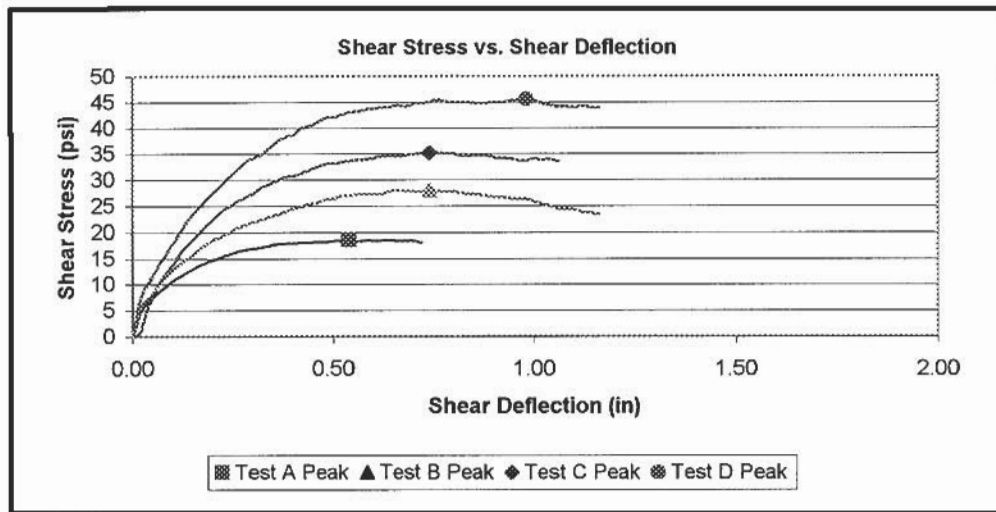


Project Name Stalite
 Material Type Gran. Lightweight Backfill
 Shear Box 12" x 12" square
 Sample Log Number 3/4" Stone (-3/4" material)

Project Number 1433-05-721
 Date Received 9/6/2005
 Date Completed 9/19/2005
 Test Condition Inundated

	Test A	Test B	Test C	Test D
Normal Load (ksf)	2	3	4	6
Normal Load (psi)	13.89	20.83	27.78	41.67
Target Dry Density (pcf)	65% Relative Density			
Target Moisture Content (%)	Inundated			
Peak Shear Stress (psi)	18.47	28.07	35.21	45.65
Shear Deflection at Peak (psi)	0.54	0.74	0.74	0.98

Results	
C, psi	5.80
ϕ , degrees	44.6



Remarks: Specimens remolded to 65% relative density given test values supplied with samples.
Specimens were sheared at a loading rate of 0.04 inches per minute.