



Suwannee American Cement

Quality Control

5117 U.S. Hwy 27, P.O. BOX 410 - Branford, FL 32008

Phone: (386) 935-5000

ISO 9001:2000 Certified  
FM 78351



ISO 14001:2004 Certified  
EMS 78352



Month: May-2009

Type: ASTM I / II  
AASHTO I / II

Silos: 2, 3, 4 & 5

**PORTLAND CEMENT TEST REPORT**

**AASHTO / ASTM Cement**

| Physical Tests  | Unit                   | Results | AASHTO / ASTM Type I/II<br>Minimum | AASHTO / ASTM Type I/II<br>Maximum |
|---|------------------------|---------|------------------------------------|------------------------------------|
| Blaine Fineness   | ( m <sup>2</sup> /Kg ) | 392     | 280                                | 420                                |
| Autoclave Expansion   | ( % )                  | 0.10    | -                                  | 0.80                               |
| Time of Setting Vicat Initial                               | ( min )                | 92      | 45                                 | -                                  |
| Time of Setting Vicat Final                                 | ( min )                | 203     | -                                  | 375                                |
| Compressive Strength 1 day                                  | ( MPa)                 | 15.9    | -                                  | -                                  |
| Compressive Strength 3 days                                 | ( MPa)                 | 27.4    | 12.0 / 10.0                        | -                                  |
| Compressive Strength 7 days                                 | ( MPa)                 | 37.0    | 19.0 / 17.0                        | -                                  |
| Compressive Strength 28 days (previous)                     | ( MPa)                 | 45.4    | -                                  | -                                  |
| Compressive Strength 1 day                                  | ( psi)                 | 2302    | -                                  | -                                  |
| Compressive Strength 3 days                                 | ( psi)                 | 3976    | 1740 / 1450                        | -                                  |
| Compressive Strength 7 days                                 | ( psi)                 | 5371    | 2760 / 2470                        | -                                  |
| Compressive Strength 28 days (previous)                     | ( psi)                 | 6576    | -                                  | -                                  |
| Heat of hydration   | ( cal/g)               | 77      | -                                  | 80*                                |
| Air Content   | ( % )                  | 8       | -                                  | 12                                 |
| Chemical Composition  | Unit                   | Results | AASHTO / ASTM Type I/II<br>Minimum | AASHTO / ASTM Type I/II<br>Maximum |
| Silicon Dioxide (SiO <sub>2</sub> )                         | ( % )                  | 20.4    | -                                  | -                                  |
| Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> )            | ( % )                  | 5.0     | -                                  | 6.0                                |
| Iron Oxide (Fe <sub>2</sub> O <sub>3</sub> )                | ( % )                  | 3.2     | -                                  | 6.0                                |
| Calcium Oxide (CaO)   | ( % )                  | 64.5    | -                                  | -                                  |
| Magnesium Oxide (MgO)                                       | ( % )                  | 0.9     | -                                  | 6.0                                |
| Tricalcium Silicate (C <sub>3</sub> S)                      | ( % )                  | 55      | -                                  | -                                  |
| Tricalcium Aluminate (C <sub>3</sub> A)                     | ( % )                  | 8       | -                                  | 8                                  |
| Sulfur Trioxide (SO <sub>3</sub> )                          | ( % )                  | 3.0     | -                                  | (Optimum SO3 Performed)            |
| CO <sub>2</sub>   | ( % )                  | 1.1     | -                                  | -                                  |
| Limestone   | ( % )                  | 3.2     | -                                  | 5.0                                |
| Limestone CaCO <sub>3</sub> content                         | ( % )                  | 77      | 70                                 | -                                  |
| Insoluble Residue   | ( % )                  | 0.23    | -                                  | 0.75                               |
| Equiv. Alkalies (Na <sub>2</sub> O + 0.658K <sub>2</sub> O) | ( % )                  | 0.25    | -                                  | 0.60                               |
| Sum of C <sub>3</sub> S + 4.75C <sub>3</sub> A              | ( % )                  | 92      | -                                  | 100                                |
| Loss on Ignition  | ( % )                  | 2.2     | -                                  | 3.0                                |

We certify that the above described cement meets the standard chemical and physical requirements of the following specifications: AASHTO M 85 & ASTM C 150 for type I/II cement. This cement may contain upto 5% limestone addition.

This cement also meets all applicable FLDOT (Florida Section 921), GADOT, ALDOT, SCDOT and NCDOT specifications for type I/II cement.

\* FDOT (section 921) specification limit

Date:  
6/11/2009

My Phuong Ha  
Quality Control Manager