



2720 Highway 341 South  
 Clinchfield, Ga 31017  
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**CEMENT  
 MILL  
 TEST  
 REPORT**

**Cement Identified as:** **TYPE I/II - Low Alkali** **Date:** 10/15/2008  
**Plant:** Cemex Clinchfield  
**Location:** Clinchfield, Ga  
**Production Dates:**  
**Beginning:** September 1, 2008 **Silos:** 1, 2, 4, 9 to 14, 19 to 22, 25 to 31  
**Ending:** September 30, 2008

STANDARD CHEMICAL REQUIREMENTS (ASTM C 114)	ASTM C 150 SPECIFICATIONS	TYPE I	TYPE II	TYPE III	TYPE V	TEST RESULTS
Silicon Dioxide (SiO <sub>2</sub> ), %	Minimum	----	20.0	----	----	20.0
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ), %	Maximum	----	6.0	----	----	5.2
Ferric Oxide (Fe <sub>2</sub> O <sub>3</sub> ), %	Maximum	----	6.0	----	----	3.8
Calcium Oxide (CaO), %		----	----	----	----	64.1
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	6.0	6.0	1.0
Sulfur Trioxide (SO <sub>3</sub> ), % **	Maximum	3.0	3.0	3.5	2.3	3.4
Loss on Ignition (LOI), %	Maximum	3.0	3.0	3.0	3.0	0.9
Insoluble Residue, %	Maximum	0.75	0.75	0.75	0.75	0.20
Alkalies (Na <sub>2</sub> O equivalent), %	Maximum	0.60	0.60	0.60	0.60	0.31
Tricalcium Silicate (C <sub>3</sub> S), %		----	----	----	----	59
Dicalcium Silicate (C <sub>2</sub> S), %		----	----	----	----	12
Tricalcium Aluminate (C <sub>3</sub> A), %	Maximum	----	8	15	5	7
Tetracalcium Aluminoferrite (C <sub>4</sub> AF), %		----	----	----	----	12
C <sub>3</sub> S + 4.75 C <sub>3</sub> A	Maximum	----	100	----	----	95
(C <sub>4</sub> AF + 2C <sub>3</sub> A) or (C <sub>4</sub> AF + C <sub>2</sub> F), %	Maximum	----	----	----	25	
<b>PHYSICAL REQUIREMENTS</b>						
(ASTM C 204) Blaine Fineness, cm <sup>2</sup> /gm	Minimum	2800	2800	----	2800	3716
(ASTM C 430) -325 Mesh, %		----	----	----	----	91.3
(ASTM C 191) Time of Setting (Vicat)						
Initial Set, minutes	Minimum	45	45	45	45	92
Final Set, minutes	Maximum	375	375	375	375	189
(ASTM C 451) False Set, %	Minimum (Optional)	50	50	50	50	79
(ASTM C 185) Air Content, %	Maximum	12	12	12	12	7
(ASTM C 151) Autoclave Expansion, %	Maximum	0.80	0.80	0.80	0.80	-0.007
(ASTM C 187) Normal Consistency, %		----	----	----	----	25.2
(ASTM C 109) Compressive Strength, psi (MPa)						
1 Day		----	----	1740(12)	----	2256
3 Days	Minimum	1740(12.0)	1450(10.0)	3480(24)	1160(8.0)	3800
7 Days	Minimum	2760(19.0)	2470(17.0)	----	2180(15.0)	4939
% Expansion @ 3.79 % SO <sub>3</sub> ; 1038	Maximum	0.02	0.02	0.02	0.02	-0.012

\*\* The performance of CEMEX Type II has proven to be improved with sulfur trioxide levels in excess of the 3% limit for Type II.  
 Note D in ASTM C-150 allows for additional sulfate, provided expansion as measured by ASTM C-1038 does not exceed 0.020%.

CEMEX hereby certifies that this cement meets or exceeds the chemical and physical Specifications of:

By: *Claudio Eberhardt*  
 Quality Control Manager  
 CEMEX - Clinchfield Cement Plant  
 2720 Highway 341 South, Clinchfield Ga 31013

ASTM C-150 for Type I Low Alkali Portland Cement and  
 ASTM C-150 for Type II Low Alkali Portland Cement  
 ALDOT 815, GDOT 830, FDOT 921, AASHTO M85 for SCDOT