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**CEMENT  
MILL  
TEST**

**Cement Identified as:** Type III **Date:** 08/01/22  
**Production Dates:** June, 2022 **Silo:** 3

STANDARD CHEMICAL REQUIREMENTS (ASTM C114)	SPECIFICATIONS	ASTM C 150 TYPE III	AASHTO M85 Type III	RESULTS
Silicon Dioxide (SiO <sub>2</sub> ), %		----		19.2
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ), %		----		4.4
Ferric Oxide (Fe <sub>2</sub> O <sub>3</sub> ), %		----		3.3
Calcium Oxide (CaO), %		----		60.9
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	4.5
Sulfur Trioxide (SO <sub>3</sub> ), % <sup>A</sup>	Maximum	3.5	3.5	4.3
Loss on Ignition (LOI), %	Maximum	3.5	3.5	2.5
Insoluble Residue, %	Maximum	1.50	1.5	0.63
Free Calcium Oxide, %				0.6
Alkalies (Na <sub>2</sub> O equivalent), %		----		0.84
Tricalcium Silicate (C <sub>3</sub> S), Potential %		----		55
Dicalcium Silicate (C <sub>2</sub> S), Potential %		----		14
Tricalcium Aluminate (C <sub>3</sub> A), Potential %	Maximum	15	15	6
Tetracalcium Aluminoferrite (C <sub>4</sub> AF), Potential %		----		10
CO <sub>2</sub> , %				1.0
Limestone, %	Maximum	5.0	5.0	2.3
CaCO <sub>3</sub> in Limestone, %	Minimum	70	70	97
<b>PHYSICAL REQUIREMENTS</b>				
(ASTM C204) Blaine Fineness, m <sup>2</sup> /kg		----		624
(ASTM C191) Time of Setting (Vicat)				
Initial Set, minutes	Minimum	45	45	115
Final Set, minutes	Maximum	375	375	217
(ASTM C185) Air Content, %	Maximum	12	12	8
(ASTM C151) Autoclave Expansion, %	Maximum	0.80	0.80	0.10
(ASTM C1038) Expansion in Water, %	Maximum	0.02	0.02	0.005
(ASTM C187) Normal Consistency, %		----		28.7
(ASTM C109) Compressive Strength, psi (Mpa)				
1 Day	Minimum	1740 ( 12.0 )	1740 (12.0)	4337 ( 29.9 )
3 Day	Minimum	3480 ( 24.0 )	3480 (24.0)	5300 ( 36.5 )
7 Day		----		6227 ( 42.9 )
28 Day		----		7257 ( 50.0 )

<sup>A</sup> Per ASTM C150 Table 1 footnote D

We hereby certify that this cement conforms to all of the standard requirements for portland cement in the above specification for the type specified.

By: Rusty Strader

Physical Testing completed by: DG, JT  
 Chemical Testing completed by: CA, NC, KL, NM

Rusty Strader  
 Quality Control Manager  
 Fairborn Cement Company

