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**CEMENT
MILL
TEST**

Cement Identified as: **Type III** **Date:** 09/15/23

Production Dates: **July, 2023** **Silo:** 3

STANDARD CHEMICAL REQUIREMENTS (ASTM C114)	SPECIFICATIONS	ASTM C 150 TYPE III	AASHTO M85 Type III	RESULTS
Silicon Dioxide (SiO ₂), %		----		19.3
Aluminum Oxide (Al ₂ O ₃), %		----		4.4
Ferric Oxide (Fe ₂ O ₃), %		----		2.9
Calcium Oxide (CaO), %		----		60.2
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	4.4
Sulfur Trioxide (SO ₃), % ^A	Maximum	3.5	3.5	4.3
Loss on Ignition (LOI), %	Maximum	3.5	3.5	2.1
Insoluble Residue, %	Maximum	1.50	1.5	0.50
Free Calcium Oxide, %				0.6
Alkalies (Na ₂ O equivalent), %		----		0.82
Tricalcium Silicate (C ₃ S), Potential %		----		53
Dicalcium Silicate (C ₂ S), Potential %		----		16
Tricalcium Aluminate (C ₃ A), Potential %	Maximum	15	15	7
Tetracalcium Aluminoferrite (C ₄ AF), Potential %		----		9
CO ₂ , %				1.4
Limestone, %	Maximum	5.0	5.0	3.3
CaCO ₃ in Limestone, %	Minimum	70	70	97
PHYSICAL REQUIREMENTS				
(ASTM C204) Blaine Fineness, m ² /kg		----		615
(ASTM C191) Time of Setting (Vicat)				
Initial Set, minutes	Range	45 - 375	45 - 375	118
Final Set, minutes				227
(ASTM C185) Air Content, %	Maximum	12	12	8
(ASTM C151) Autoclave Expansion, %	Maximum	0.80	0.80	0.15
(ASTM C1038) Expansion in Water, %	Maximum	0.02	0.02	0.000
(ASTM C187) Normal Consistency, %		----		28.8
(ASTM C109) Compressive Strength, psi (Mpa)				
1 Day	Minimum	1740 (12.0)	1740 (12.0)	3913 (27.0)
3 Day	Minimum	3480 (24.0)	3480 (24.0)	4980 (34.3)
7 Day		----		6000 (41.4)
28 Day		----		7300 (50.3)

^A 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: TL, JT
 Chemical Testing completed by: CA, NC, KL, NM

Rusty Strader
 Quality Control Manager
 Fairborn Cement Company

