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**CEMENT
MILL
TEST**

Cement Identified as: **Type III** **Date:** 03/01/22
Production Dates: **January, 2022** **Silo:** 3

STANDARD CHEMICAL REQUIREMENTS (ASTM C114)	SPECIFICATIONS	ASTM C 150 TYPE III	AASHTO M85 Type III	RESULTS
Silicon Dioxide (SiO ₂), %		----		19.4
Aluminum Oxide (Al ₂ O ₃), %		----		4.4
Ferric Oxide (Fe ₂ O ₃), %		----		3.1
Calcium Oxide (CaO), %		----		61.5
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	4.3
Sulfur Trioxide (SO ₃), % ^A	Maximum	3.5	3.5	4.4
Loss on Ignition (LOI), %	Maximum	3.5	3.5	2.3
Insoluble Residue, %	Maximum	1.50	1.5	0.52
Free Calcium Oxide, %				0.6
Alkalies (Na ₂ O equivalent), %		----		0.77
Tricalcium Silicate (C ₃ S), Potential %		----		56
Dicalcium Silicate (C ₂ S), Potential %		----		13
Tricalcium Aluminate (C ₃ A), Potential %	Maximum	15	15	7
Tetracalcium Aluminoferrite (C ₄ AF), Potential %		----		9
CO ₂ , %				1.1
Limestone, %	Maximum	5.0	5.0	2.5
CaCO ₃ in Limestone, %	Minimum	70	70	97
PHYSICAL REQUIREMENTS				
(ASTM C204) Blaine Fineness, m ² /kg		----		628
(ASTM C191) Time of Setting (Vicat)				
Initial Set, minutes	Minimum	45	45	99
Final Set, minutes	Maximum	375	375	200
(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	0.004
(ASTM C187) Normal Consistency, %		----		28.9
(ASTM C109) Compressive Strength, psi (Mpa)				
1 Day	Minimum	1740 (12.0)	1740 (12.0)	4470 (30.8)
3 Day	Minimum	3480 (24.0)	3480 (24.0)	5533 (38.1)
7 Day		----		6368 (43.9)
28 Day		----		7285 (50.2)

^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: DG, JT
 Chemical Testing completed by: TA, NC, KL, NM

Rusty Strader
 Quality Control Manager
 Fairborn Cement Company

