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**CEMENT
MILL
TEST**

Cement Identified as: **Type III** **Date:** 10/29/20
Production Dates: **September, 2020** **Silo:** 3

STANDARD CHEMICAL REQUIREMENTS (ASTM C 114)	SPECIFICATIONS	ASTM C 150 TYPE III	AASHTO M85 Type III	RESULTS
Silicon Dioxide (SiO ₂), %		----		18.9
Aluminum Oxide (Al ₂ O ₃), %		----		4.5
Ferric Oxide (Fe ₂ O ₃), %		----		3.1
Calcium Oxide (CaO), %		----		62.0
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	4.7
Sulfur Trioxide (SO ₃), % ^A	Maximum	3.5	3.5	4.0
Loss on Ignition (LOI), %	Maximum	3.5	3.5	2.0
Insoluble Residue, %	Maximum	1.50	1.5	0.53
Free Calcium Oxide, %				0.7
Alkalies (Na ₂ O equivalent), %		----		0.86
Tricalcium Silicate (C ₃ S), Potential %		----		63
Dicalcium Silicate (C ₂ S), Potential %		----		7
Tricalcium Aluminate (C ₃ A), Potential %	Maximum	15	15	7
Tetracalcium Aluminoferrite (C ₄ AF), Potential %		----		9
CO ₂ , %				1.2
Limestone, %	Maximum	5.0	5.0	2.8
CaCO ₃ in Limestone, %	Minimum	70	70	97
PHYSICAL REQUIREMENTS				
(ASTM C 204) Blaine Fineness, m ² /kg		----		617
(ASTM C 191) Time of Setting (Vicat)				
Initial Set, minutes	Minimum	45	45	94
Final Set, minutes	Maximum	375	375	194
(ASTM C 185) Air Content, %	Maximum	12	12	7
(ASTM C 151) Autoclave Expansion, %	Maximum	0.80	0.80	0.14
(ASTM C 1038) Expansion in Water, %	Maximum	0.02	0.02	0.009
(ASTM C 187) Normal Consistency, %		----		29.1
(ASTM C 109) Compressive Strength, psi (Mpa)				
1 Day	Minimum	1740 (12.0)	1740 (12.0)	4550 (31.4)
3 Day	Minimum	3480 (24.0)	3480 (24.0)	5494 (37.9)
7 Day		----		6168 (42.5)
28 Day		----		6684 (46.1)

^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, MS
 Chemical Testing completed by: TA, NC, NM

Rusty Strader
 Quality Control Manager
 Fairborn Cement Company

