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**CEMENT  
MILL  
TEST**

**Cement Identified as:** Type IL (10) **Date:** 07/01/22  
**Production Period:** May, 2022 **Silos:** 5

STANDARD CHEMICAL REQUIREMENTS (ASTM C114)	SPECIFICATIONS	ASTM C595 Type IL	RESULTS
Sulfur Trioxide (SO <sub>3</sub> ), % <sup>A</sup>	Maximum	3.0	3.3
Alkalies (Na <sub>2</sub> O equivalent), %			0.84
Loss on Ignition (LOI), %	Maximum	10.0	5.0
CaCO <sub>3</sub> in Limestone, %	Minimum	70	90
Limestone, %	Maximum	7.5 - 12.5	8.7
<b>PHYSICAL REQUIREMENTS</b>			
(ASTM C204) Blaine Fineness, m <sup>2</sup> /kg			465
(ASTM C430) 45-um sieve, % retained			1.1
(ASTM C191) Time of Setting (Vicat)			
Initial Set, minutes	Minimum	45	129
Final Set, minutes	Maximum	420	225
(ASTM C185) Air Content, %	Maximum	12	7
(ASTM C151) Autoclave Expansion, %	Min / Max	-0.20 / 0.80	0.12
(ASTM C1038) Expansion in Water, %	Maximum	0.02	0.009
(ASTM C452), Sulfate Resistance, %			0.03
(ASTM C187) Normal Consistency, %			26.8
(ASTM C188) Density (g/cm <sup>3</sup> )			3.07
Heat of Hydration (ASTM C1702) 3 day, cal/g	Most Recent Value		79.5
(ASTM C109) Compressive Strength, psi (Mpa)			
1 Day		-----	2915 ( 20.1 )
3 Day	Minimum	1890 ( 13.0 )	4550 ( 31.4 )
7 Day	Minimum	2900 ( 20.0 )	5495 ( 37.9 )
28 Day	Minimum	3620 ( 25.0 )	6320 ( 43.6 )

<sup>A</sup> Per ASTM C595 Table 1 footnote B

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