



3250 Linebaugh Rd.  
 Xenia, OH 45385  
 Telephone (800) 762-0040  
 FAX (937) 879-8425

**CEMENT  
MILL  
TEST**

**Cement Identified as:** Type I, Type II **Date:** 10/29/21

**Production Period:** September, 2021 **Silos:** 2, 6

STANDARD CHEMICAL REQUIREMENTS (ASTM C 114)	SPECIFICATIONS	ASTM C 150		AASHTO	RESULTS
		TYPE I	TYPE II (MH)	M85 Type I	
Silicon Dioxide (SiO <sub>2</sub> ), %		-----	-----	-----	19.2
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> ), %	Maximum	-----	6.0	-----	4.5
Ferric Oxide (Fe <sub>2</sub> O <sub>3</sub> ), %	Maximum	-----	6.0	-----	3.1
Calcium Oxide (CaO), %		-----	-----	-----	62.0
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	6.0	4.5
Sulfur Trioxide (SO <sub>3</sub> ), % <sup>A</sup>	Maximum	3.0	3.0	3.0	3.4
Loss on Ignition (LOI), %	Maximum	3.5	3.5	3.5	2.7
Insoluble Residue, %	Maximum	1.50	1.50	1.5	0.66
Alkalies (Na <sub>2</sub> O equivalent), %		-----	-----	-----	0.78
Tricalcium Silicate (C <sub>3</sub> S), Potential %		-----	-----	-----	60
Dicalcium Silicate (C <sub>2</sub> S), Potential %		-----	-----	-----	8
Tricalcium Aluminate (C <sub>3</sub> A), Potential %	Maximum	-----	8	-----	6
Tetracalcium Aluminoferrite (C <sub>4</sub> AF), Potential %		-----	-----	-----	9
C <sub>3</sub> S + 4.75C <sub>3</sub> A	Maximum		100		91
CO <sub>2</sub> , %					1.5
Limestone, %	Maximum	5.0	5.0		3.5
CaCO <sub>3</sub> in Limestone, %	Minimum	70	70		97
<b>PHYSICAL REQUIREMENTS</b>					
(ASTM C 204) Blaine Fineness, m <sup>2</sup> /kg	Range	260 Min.	260 - 430	260 Min.	404
(ASTM C 191) Time of Setting (Vicat)					
Initial Set, minutes	Minimum	45	45	45	115
Final Set, minutes	Maximum	375	375	375	216
(ASTM C 185) Air Content, %	Maximum	12	12	12	7
(ASTM C 151) Autoclave Expansion, %	Maximum	0.80	0.80	0.80	0.14
(ASTM C 1038) Expansion in Water, %	Maximum	0.02	0.02	0.02	0.006
(ASTM C 187) Normal Consistency, %		-----	-----	-----	26.0
Heat of Hydration (ASTM C 1702)					
3 day, cal/g	Most Recent Value				82
(ASTM C 109) Compressive Strength, psi (Mpa)					
1 Day		-----	-----	-----	2662 ( 18.4 )
3 Day	Minimum	1740 ( 12.0 )	1450 ( 10.0 )	1740 (12.0)	4289 ( 29.6 )
7 Day	Minimum	2760 ( 19.0 )	2470 ( 17.0 )	2760 (19.0)	5121 ( 35.3 )
28 Day	Minimum	4060 ( 28.0 )	4060 ( 28.0 )	4060 (28.0)	6202 ( 42.8 )

<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: TA, NC, KL, NM

Rusty Strader  
 Quality Control Manager  
 Fairborn Cement Company



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**Additional Data**

Type	Inorganic Processing Addition Data	
	Baghouse Dust	Limestone
Amount (%)	0.9	3.3
SiO2 (%)	12.6	2.6
Al2O3 (%)	4.5	1.1
Fe2O3 (%)	1.6	0.6
CaO (%)	43.2	50.4
SO3 (%)	1.2	0.4

Base cement Phase Composition

C3S (%)	56
C2S (%)	12
C3A (%)	7
C4AF (%)	9

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By: Rusty Strader

Rusty Strader  
 Quality Control Manager  
 Fairborn Cement Company