



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:** 09/30/21

Production Period: August, 2021 **Silos:** 2, 5, 6

STANDARD CHEMICAL REQUIREMENTS (ASTM C 114)	SPECIFICATIONS	ASTM C 150		AASHTO	RESULTS
		TYPE I	TYPE II (MH)	M85 Type I	
Silicon Dioxide (SiO ₂), %		-----	-----	-----	19.2
Aluminum Oxide (Al ₂ O ₃), %	Maximum	-----	6.0	-----	4.4
Ferric Oxide (Fe ₂ O ₃), %	Maximum	-----	6.0	-----	3.1
Calcium Oxide (CaO), %		-----	-----	-----	61.8
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	6.0	4.5
Sulfur Trioxide (SO ₃), % ^A	Maximum	3.0	3.0	3.0	3.3
Loss on Ignition (LOI), %	Maximum	3.5	3.5	3.5	2.6
Insoluble Residue, %	Maximum	1.50	1.50	1.5	0.67
Alkalies (Na ₂ O equivalent), %		-----	-----	-----	0.79
Tricalcium Silicate (C ₃ S), Potential %		-----	-----	-----	60
Dicalcium Silicate (C ₂ S), Potential %		-----	-----	-----	8
Tricalcium Aluminate (C ₃ A), Potential %	Maximum	-----	8	-----	6
Tetracalcium Aluminoferrite (C ₄ AF), Potential %		-----	-----	-----	9
C ₃ S + 4.75C ₃ A	Maximum		100		89
CO ₂ , %					1.5
Limestone, %	Maximum	5.0	5.0		3.5
CaCO ₃ in Limestone, %	Minimum	70	70		97
PHYSICAL REQUIREMENTS					
(ASTM C 204) Blaine Fineness, m ² /kg	Range	260 Min.	260 - 430	260 Min.	408
(ASTM C 191) Time of Setting (Vicat)					
Initial Set, minutes	Minimum	45	45	45	115
Final Set, minutes	Maximum	375	375	375	217
(ASTM C 185) Air Content, %	Maximum	12	12	12	7
(ASTM C 151) Autoclave Expansion, %	Maximum	0.80	0.80	0.80	0.12
(ASTM C 1038) Expansion in Water, %	Maximum	0.02	0.02	0.02	0.013
(ASTM C 187) Normal Consistency, %		-----	-----	-----	26.3
Heat of Hydration (ASTM C 1702)					
3 day, cal/g	Most Recent Value				82
(ASTM C 109) Compressive Strength, psi (Mpa)				-----	
1 Day		-----	-----	-----	2545 (17.5)
3 Day	Minimum	1740 (12.0)	1450 (10.0)	1740 (12.0)	4225 (29.1)
7 Day	Minimum	2760 (19.0)	2470 (17.0)	2760 (19.0)	5069 (35.0)
28 Day	Minimum	4060 (28.0)	4060 (28.0)	4060 (28.0)	6240 (43.0)

^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



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Additional Data

Type	Inorganic Processing Addition Data	
	Baghouse Dust	Limestone
Amount (%)	0.8	3.5
SiO2 (%)	12.0	2.6
Al2O3 (%)	4.3	1.1
Fe2O3 (%)	1.6	0.6
CaO (%)	42.3	50.4
SO3 (%)	0.7	0.4

Base cement Phase Composition

C3S (%)	56
C2S (%)	12
C3A (%)	6
C4AF (%)	9

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By: *Rusty Strader*

Rusty Strader
 Quality Control Manager
 Fairborn Cement Company