



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:** 09/02/22

Production Period: July, 2022 **Silos:** 6, 8

STANDARD CHEMICAL REQUIREMENTS (ASTM C114)	SPECIFICATIONS	ASTM C 150		AASHTO	RESULTS
		TYPE I	TYPE II (MH)	M85 Type I	
Silicon Dioxide (SiO ₂), %		-----	-----	-----	19.4
Aluminum Oxide (Al ₂ O ₃), %	Maximum	-----	6.0	-----	4.5
Ferric Oxide (Fe ₂ O ₃), %	Maximum	-----	6.0	-----	3.1
Calcium Oxide (CaO), %		-----	-----	-----	61.4
Magnesium Oxide (MgO), %	Maximum	6.0	6.0	6.0	4.3
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	0.71
Alkalies (Na ₂ O equivalent), %		-----	-----	-----	0.83
Tricalcium Silicate (C ₃ S), Potential %		-----	-----	-----	56
Dicalcium Silicate (C ₂ S), Potential %		-----	-----	-----	11
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		87
CO ₂ , %					1.4
Limestone, %	Maximum	5.0	5.0		3.3
CaCO ₃ in Limestone, %	Minimum	70	70		97
PHYSICAL REQUIREMENTS					
(ASTM C204) Blaine Fineness, m ² /kg	Range	260 Min.	260 - 430	260 Min.	386
(ASTM C191) Time of Setting (Vicat)					
Initial Set, minutes	Minimum	45	45	45	122
Final Set, minutes	Maximum	375	375	375	215
(ASTM C185) Air Content, %	Maximum	12	12	12	7
(ASTM C151) Autoclave Expansion, %	Maximum	0.80	0.80	0.80	0.09
(ASTM C1038) Expansion in Water, %	Maximum	0.02	0.02	0.02	0.003
(ASTM C187) Normal Consistency, %		-----	-----	-----	26.0
Heat of Hydration (ASTM C1702)					
3 day, cal/g	Most Recent Value				82
(ASTM C 109) Compressive Strength, psi (Mpa)				-----	
1 Day		-----	-----	-----	2520 (17.4)
3 Day	Minimum	1740 (12.0)	1450 (10.0)	1740 (12.0)	4180 (28.8)
7 Day	Minimum	2760 (19.0)	2470 (17.0)	2760 (19.0)	5120 (35.3)
28 Day	Minimum	4060 (28.0)	4060 (28.0)	4060 (28.0)	6700 (46.2)

^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: TL, JT
 Chemical Testing completed by: CA, NC, KL, NM

Rusty Strader
 Quality Control Manager
 Fairborn Cement Company



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Additional Data

Type Amount (%)	Inorganic Processing Addition Data	Limestone
	Baghouse Dust	Limestone
SiO ₂ (%)	0.9	3.3
Al ₂ O ₃ (%)	12.8	2.6
Fe ₂ O ₃ (%)	4.4	1.1
CaO (%)	1.4	0.6
SO ₃ (%)	43.4	50.4
	1.0	0.4

Base cement Phase Composition

C3S (%)	52
C2S (%)	16
C3A (%)	6
C4AF (%)	9

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By: *Rusty Strader*

Rusty Strader
 Quality Control Manager
 Fairborn Cement Company