



Cement Mill Test Report

Month of Issue: November 2023

Plant: Harleyville, South Carolina
Product: Portland Cement Type III
Silo: 6, 9
Manufactured: October 2023

ASTM C150 and AASHTO M 85 Standard Requirements

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS			
Item	Spec limit	Test Result	Item	Spec limit	Test Result	
Rapid Method, X-Ray (C114)			Air content of mortar (%) (C185)			
SiO2 (%)	---	20.3		12 max	6	
Al2O3 (%)	---	5.1	Blaine Fineness (m2/kg) (C204)			
Fe2O3 (%)	---	3.5		---	485	
CaO (%)	---	64.2	Fineness, No. 325 sieve, (% retained) (C430)			
MgO (%)	6.0 max	1.3		---	0.1	
SO3 (%)	3.5 max †	2.8	Compressive strength (MPa, [PSI]) (C109)			
Loss on ignition (%)	3.0 max	1.6	1 day	12.0 [1740] min	21.3	[3090]
Insoluble residue (%) ‡	1.5 max	0.31	3 days	24.0 [3480] min	33.0	[4780]
Equivalent alkalis (%)	---	0.56	7 days	---	39.6	[5740]
			28 days (Reflects previous month's data)	---	49.7	[7200]
			Time of setting (minutes)			
			Vicat Initial (C191)	45 - 375	86	
Adjusted Potential Phase Composition (C150)			Mortar Bar Expansion (%) (C1038) ‡			
C3S (%)	---	60		0.020 max	0.003	
C2S (%)	---	13				
C4AF (%)	---	11				
ASTM C150 and AASHTO M 85 Optional Chemical Requirements:			ASTM C150 and AASHTO M 85 Optional Physical Requirements:			
C3A (%)	8 max	8	Early Stiffening(%)			
Chloride (%) (for information only)	---	0.02		50 min	59	

* Dashes in the spec limit mean Not Applicable

† May exceed 3.5% SO₃ maximum based on our C1038 results of < 0.020% expansion at 14 days.

‡ Current production run not available - most recent provided.

§ Please refer to ASTM C1778 or AASHTO R 80 for guidance on reducing the risk of alkali aggregate reaction in concrete.

Analysts: Richard Buford, George Wren, Neil Graham

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of applicable SCDOT, NCDOT, GDOT, MDOT, VDOT, TDOT Specifications for Type III CEMENT;
ASTM C150 & AASHTO M 85 STANDARD SPECIFICATIONS FOR TYPE III CEMENT;

Certified By:

Sean J. Makens - Quality Manager
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