



# Cement Mill Test Report

Month of Issue: September 2024

<b>Plant:</b>	Harleyville, South Carolina
<b>Product:</b>	EcoStrong PLC Type IL (10) MS
<b>Silo:</b>	1, 2, 4, 5, 8, 9
<b>Manufactured:</b>	August 2024

## ASTM C595 and AASHTO M 240 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)	12 max	5
SiO <sub>2</sub> (%)	---	18.5	Fineness, Blaine (m <sup>2</sup> /kg) (C204)	---	505
Al <sub>2</sub> O <sub>3</sub> (%)	---	4.5	Fineness, No. 325 sieve, (% retained) (C430)	---	0.1
Fe <sub>2</sub> O <sub>3</sub> (%)	---	3.2	Density of Cement (g/cm <sup>3</sup> ) (C188)	---	3.11 ‡
CaO (%)	---	62.9	Compressive strength (MPa, [PSI]) (C109)		
MgO (%)	---	1.4	1 day	---	18.8 [2730]
SO <sub>3</sub> (%)	3.0 max †	2.7	3 days	13.0 [1890] min	31.7 [4590]
Loss on ignition (%)	10.0 max	5.2	7 days	20.0 [2900] min	37.2 [5400]
Na <sub>2</sub> O <sub>Eq</sub> of portland cement (%)	---	0.48	28 days (previous month's data)	25.0 [3620] min	45.2 [6550]
CO <sub>2</sub> (%)	---	3.8	Time of setting (minutes)		
Limestone (%)	5 to 15	8.4	Vicat Initial (C191)	45 to 420	119
CaCO <sub>3</sub> in Limestone (%)	70 min	90 ‡	Heat of Hydration @ 3 days (kJ/kg, [cal/g]) (C1702)	---	340 [81]‡
Inorganic Process Addition (%) (Baghouse Dust)	---	1.7	Mortar Bar Expansion (%) (C1038)	0.020 max	0.001 ‡
Optional Chemical Information:			Physical Requirements for Blended Cements With Special Properties:		
Chloride (%)		0.02	Sulfate resistance @ 180 days (%) (C1012)	0.10 max	0.02 ‡

Dashes in the spec limit mean Not Applicable

† May exceed 3.0% SO<sub>3</sub> 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 SCDOT and NCDOT specifications for Type IL; ASTM C595 & AASHTO M 240 specifications for Type IL(10); ASTM C1157 specification for Type GU.

Certified By:

Sean J. Makens - Quality Manager

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Argos USA

Harleyville Plant

463 Judge Street, Harleyville, South Carolina 29448

Phone: 843-806-2244