



Cement Mill Test Report

Month of Issue: August 2022

Plant: Cartagena, Colombia
 Product: Portland Cement Type I/II
 Sampled: July 2022

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)		
SiO ₂ (%)	---	18.6		12 max	6
Al ₂ O ₃ (%)	6.0 max	5.1	Blaine Fineness (m²/kg) (C204)		
Fe ₂ O ₃ (%)	6.0 max	4.4	-325 (%) (C430)	260 min	387
CaO (%)	---	64.5		---	93.9
MgO (%)	6.0 max	0.7	Autoclave expansion (%) (C151)		
SO ₃ (%)	3.0 max *	2.7		0.80 max	0.04
Loss on ignition (%)	3.5 max	2.5	Compressive strength (MPa, [PSI]) (C109)		
Insoluble residue (%)	1.5 max	0.5	1 day	---	16.0 [2320]
Na ₂ O _{eq} (%)**	---	0.32	3 days	12.0 [1740] min	28.5 [4140]
CO ₂ in Cement, %	---	1.9	7 days	19.0 [2760] min	34.3 [4980]
Limestone in Cement, %	5.0 max	4.8	28 days	---	40.8 [5910]
CaCO ₃ in Limestone	70 min	89	Time of setting (minutes)		
Adjusted Potential Phase Composition (C150)			Vicat Initial (C191)	45 - 375	100
C3S (%)	---	68	Mortar Bar Expansion (%) (C1038)		
C2S (%)		4		0.020 max	NA
C3A (%)	8 max	6	ASTM C150 and AASHTO M 85 Optional Physical Requirements:		
C4AF (%)		14	False Set (%) (C451)	50 min	76

* May exceed 3.0% SO₃ maximum based on our C1038 results of <0.02% expansion at 14 days.

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

The Argos cement is certified at the time of shipment, meets the chemical and physical requirements of applicable NCDOT, ODOT, SCDOT, WVDOT, VDOT, TXDOT Specifications for TYPE I & TYPE I/II CEMENT; ASTM C150 & AASHTO M 85 STANDARD SPECIFICATIONS FOR TYPE I AND TYPE II CEMENT;

Certified By:


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