



Cement Mill Test Report

Date of Issue: February 9, 2023

Plant: Exshaw, AB
Product: OneCem
Mill Test Report Number: MTR-IL-2023-01
Manufactured: January 1-31, 2023

ASTM C 595-21 and AASHTO M240-20 Standard Requirements

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray (C114)			Blaine Fineness (m ² /kg) (C204)		497
SiO ₂ (%)		18.1	Passing 45 µm (%) (C430)		99.4
Al ₂ O ₃ (%)		3.7	Autoclave Expansion (%) (C151)*	-0.20 to 0.80	0.08
Fe ₂ O ₃ (%)		3.4	Air Content (%) (C186)	12 max	6
CaO (%)		61.0	Compressive Strength (MPa[psi]) (C109)		
MgO (%)		4.4	1 day		19.5 [2830]
SO ₃ (%)	3.0 max*	3.0	3 days	13.0 [1890] min	31.2 [4530]
Loss on Ignition @ 950 (%)	10.0 max	5.9	7 days	20.0 [2900] min	37.5 [5440]
Loss on Ignition @ 550 (%)		0.7	28 days (Reflects previous month's data)	25.0 [3620] min	45.5 [6610]
CaCO ₃ in Limestone (%)	70 min	92.2	Time of setting (minutes) (C191)		
Inorganic Process Addition	5.0 max	-	Vicat Initial	45 min.	108
Adjusted Potential Phase Composition (C 150 - For information only)			ASTM C1012 Expansion %, (6 months)***		0.048
C ₃ S (%)	---	48	Mortar Bar Expansion (%) (C1038)*	0.020 max	0.006
C ₂ S (%)	---	16			
C ₃ A (%)	---	4			
C ₄ AF (%)	---	10			

NaEq (%) 0.52

* May exceed the SO₃ maximum based on C1038 results of <0.020% expansion at 14 days.

** Most recent result provided

*** Performed by Lafarge Edmonton and/or Seattle Labs

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of ASTM C 595-21 & AASHTO M 240-20 STANDARD SPECIFICATIONS FOR TYPE IL (13) and (HS) CEMENT.

Our laboratory is AASHTO accredited. Grey highlighted tests are not within current Scope of Accreditation.



AASHTO
ACCREDITED
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Quality Manager



Certified to
NSF/ANSI/CAN 61



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Additional Data - For information only.

Item	Test Result	Test Result
	Limestone	Inorganic Process Addition Lafarge Cement Kiln Dust
Amount (%)	12.3	-
SiO ₂ (%)	1.3	n/a
Al ₂ O ₃ (%)	0.6	n/a
Fe ₂ O ₃ (%)	0.2	n/a
CaO (%)	51.5	n/a
SO ₃ (%)	0.2	n/a
CO ₂ (%)	42.3	n/a

Base Cement Phase Composition - C150 - For information only.

Item	Test Result
C ₃ S (%)	55
C ₂ S (%)	18
C ₃ A (%)	4
C ₄ AF (%)	12

Specific Gravity: 3.11**

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