



Cement Mill Test Report

Date of Issue: March 13, 2023

Plant: Exshaw, AB
Product: OneCem
Mill Test Report Number: MTR-IL-2023-02
Manufactured: February 1-28, 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)		532
SiO ₂ (%)		17.4	Passing 45 µm (%) (C430)		99.5
Al ₂ O ₃ (%)		3.6	Autoclave Expansion (%) (C151)*	-0.20 to 0.80	0.11
Fe ₂ O ₃ (%)		3.1	Air Content (%) (C186)	12 max	6
CaO (%)		60.4	Compressive Strength (MPa[psi]) (C109)		
MgO (%)		4.5	1 day		19.3 [2830]
SO ₃ (%)	3.0 max*	3.3	3 days	13.0 [1890] min	31.3 [4530]
Loss on Ignition @ 950 (%)	10.0 max	6.5	7 days	20.0 [2900] min	35.3 [5440]
Loss on Ignition @ 550 (%)		0.9	28 days (Reflects previous month's data)	25.0 [3620] min	44.3 [6610]
CaCO ₃ in Limestone (%)	70 min	90	Time of setting (minutes) (C191)		
Inorganic Process Addition	5.0 max	-	Vicat Initial	45 min.	105
Adjusted Potential Phase Composition (C 150 - For information only)			ASTM C1012 Expansion %, (6 months)***		0.048
C ₃ S (%)	---	52	Mortar Bar Expansion (%) (C1038)*	0.020 max	0.012
C ₂ S (%)	---	10			
C ₃ A (%)	---	4			
C ₄ AF (%)	---	9			

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

Western BU - Exshaw Plant
P.O. Box 160, Highway 1A, Exshaw AB T0L 2C0
Phone: 403-673-3815

Prepared By:

Lorraine Johnson

Lorraine Johnson
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 (%)	13.1	-
SiO ₂ (%)	1.6	n/a
Al ₂ O ₃ (%)	0.7	n/a
Fe ₂ O ₃ (%)	0.3	n/a
CaO (%)	50.1	n/a
SO ₃ (%)	0.3	n/a
CO ₂ (%)	42.7	n/a

Base Cement Phase Composition - C150 - For information only.

Item	Test Result
C ₃ S (%)	59
C ₂ S (%)	12
C ₃ A (%)	5
C ₄ AF (%)	11

Specific Gravity: 3.11**

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