



Cement Mill Test Report

Date of Issue: April 11, 2024

Plant: Exshaw AB
 Product: OneCem
 Mill Test Report Number: MTR-IL-2024-3
 Manufactured during the month of: March 2024

CHEMICAL ANALYSIS

Item	Spec limit	Test Result
Rapid Method, X-Ray (C114)		
SiO ₂ (%)		17.8
Al ₂ O ₃ (%)		3.9
Fe ₂ O ₃ (%)		2.9
CaO (%)		60.9
MgO (%)		4.3
SO ₃ (%)	3.0 max*	3.2
K ₂ O (%)		0.57
Na ₂ O (%)		0.15
NaEq (%)		0.53
Loss on Ignition @ 950 (%)	10.0 max	5.8
Loss on Ignition @ 550 (%)		0.8
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max	-
Adjusted Potential Phase Composition (C 150 - For information only)		
C ₃ S (%)	---	51
C ₂ S (%)	---	12
C ₃ A (%)	---	5
C ₄ AF (%)	---	9

PHYSICAL ANALYSIS

Item	Spec limit	Test Result
Blaine Fineness (m ² /kg) (C204)		549
Passing 45 μm (%) (C430)		99.3
Air Content (%) (C186)	12 max	6
Compressive Strength (MPa [psi]) (C109)		
1 day		19.4 [2811]
3 days	13.0 [1890] min	30.5 [4429]
7 days	20.0 [2900] min	36.2 [5254]
28 days (Previous Month Results)	25.0 [3620] min	42.3 [6129]
Time of setting (minutes) (C191)		
Vicat Initial	45 min.	76
ASTM C1012 Expansion % ***		
6 Months	0.05 max	0.051
12 Months	0.10 max	0.092
Mortar Bar Expansion (%) (C1038)	0.020 max	0.007

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

*** 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 C595/C595M-23 & AASHTO M 240-23 STANDARD SPECIFICATIONS FOR TYPE IL (13) and (HS) CEMENT.

Exceptions: ASTM C430 is not within the current Scope of Accreditation.

Western BU - Exshaw Plant

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



Certified to NSF/ANSI/CAN 61



AASHTO ACCREDITED

Certified By:

John W Blair
 Quality Manager



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Additional Data - For information only.

Item	Test Result	Test Result
	Limestone	Inorganic Process Addition Lafarge Cement Kiln Dust
Amount (%)	11.6	-
SiO ₂ (%)	1.7	n/a
Al ₂ O ₃ (%)	0.5	n/a
Fe ₂ O ₃ (%)	0.2	n/a
CaO (%)	50.5	n/a
SO ₃ (%)	0.1	n/a
CO ₂ (%)	42.6	n/a

Base Cement Phase Composition - C150 - For information only.

Item	Test Result
C ₃ S (%)	58
C ₂ S (%)	13
C ₃ A (%)	6
C ₄ AF (%)	10

Specific Gravity: 3.11

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