



# Cement Mill Test Report

Date of Issue: October 15, 2024

Plant: Exshaw, AB  
 Product: Portland Cement Type III  
 Mill Test Report Number: ESW\_Type III 2024-9  
 Manufactured during the month of: September 2024

## ASTM C 150-22 and AASHTO M 85-22 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	6	
SiO <sub>2</sub> (%)	---	19.4	Blaine Fineness (m <sup>2</sup> /kg) (C204)	---	487	
Al <sub>2</sub> O <sub>3</sub> (%)	---	4.1	Passing 45 μm (%) (C430)	---	99.3	
Fe <sub>2</sub> O <sub>3</sub> (%)	---	3.4	Compressive strength (MPa, [psi]) (C109)			
CaO (%)	---	61.6		1 day	12.0 [1740] min	20.3 [2939]
MgO (%)	6.0 max	4.6		3 days	24.0 [3480] min	31.3 [4537]
SO <sub>3</sub> (%) **	3.5 max	3.5		28 days (Previous Month's Result)		50.1 [7265]
Loss on Ignition (%)	3.5 max	2.5	Time of setting (minutes)			
Insoluble Residue (%)	1.5 max	0.3		Vicat Initial (C191)	45 - 375	77
CO <sub>2</sub> (%)	---	1.9	Mortar Bar Expansion (%) (C1038)			
Limestone (%)	5.0 max	4.4			0.020 max	0.009
CaCO <sub>3</sub> in Limestone (%)	70 min	96.0				
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max					
Adjusted Potential Phase Composition (C150)						
C <sub>3</sub> S (%)	---	54				
C <sub>2</sub> S (%)	---	15				
C <sub>3</sub> A (%)	15 max	5				
C <sub>4</sub> AF (%)	---	10				

### ASTM C 150-22 and AASHTO M 85-22 Optional Chemical Requirements:

Na<sub>2</sub>Oeq (%) Weekly Averages: Week 1 0.56 Week 2 0.57 Week 3 0.55 Week 4 0.59 Max 0.60

\*\* May exceed 3.0% SO<sub>3</sub> maximum based on C1038 results of <0.020% expansion at 14 days.

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of:

ASTM C 150-22 & AASHTO M 85-22 STANDARD SPECIFICATIONS FOR TYPE III CEMENT; and

ASTM C 150-22 & AASHTO M 85-22 OPTIONAL CHEMICAL REQUIREMENTS FOR TYPE III LOW ALKALI CEMENT.

Exceptions: C430 is excluded from the scope of the AASHTO accreditation.

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

Certified By:

  
 John W Blair  
 Quality Manager



Certified to  
 NSF/ANSI/CAN 61



AASHTO  
 ACCREDITED



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### Additional Data

Item	Test Result	
	Limestone	Inorganic Process Addition Lafarge Cement Kiln Dust
Amount (%)	4.4	-
SiO <sub>2</sub> (%)	2.5	n/a
Al <sub>2</sub> O <sub>3</sub> (%)	0.5	n/a
Fe <sub>2</sub> O <sub>3</sub> (%)	0.2	n/a
CaO (%)	48.6	n/a
SO <sub>3</sub> (%)	0.1	n/a
CO <sub>2</sub> (%)	42.3	n/a

### Base Cement Phase Composition

Item	Test Result
C <sub>3</sub> S (%)	56
C <sub>2</sub> S (%)	15
C <sub>3</sub> A (%)	5
C <sub>4</sub> AF (%)	11

Specific Gravity (For Information Purposes Only) 3.17

We certify that the data above reflects the materials used in cement manufacture during the production period indicated.

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John W Blair  
Quality Manager