



# Cement Mill Test Report

Date of Issue: December 13, 2024

Plant: Exshaw, AB  
 Product: Portland Cement Type III  
 Mill Test Report Number: ESW\_Type III 2024-11  
 Manufactured during the month of: November 2024

## ASTM C 150-24 and AASHTO M 85-24 Standard Requirements

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray (XRF) (C114)			Air content of mortar (%) (C185)	12 max	7
SiO <sub>2</sub> (%)	---	19.1	Blaine Fineness (m <sup>2</sup> /kg) (C204)	---	492
Al <sub>2</sub> O <sub>3</sub> (%)	---	4.0	Passing 45 μm (%) (C430)	---	99.3
Fe <sub>2</sub> O <sub>3</sub> (%)	---	3.4	Compressive strength (MPa, [psi]) (C109)		
CaO (%)	---	61.8	1 day	12.0 [1740] min	21.0 [3043]
MgO (%)	6.0 max	4.7	3 days	24.0 [3480] min	32.1 [4653]
SO <sub>3</sub> (%) **	3.5 max	3.4	28 days (Previous Month's Result)		50.3 [7289]
Loss on Ignition (%)	3.5 max	2.6	Time of setting (minutes)		
Insoluble Residue (%)	1.5 max	0.4	Vicat Initial (C191)	45 - 375	74
CO <sub>2</sub> (%)	---	2.0	Mortar Bar Expansion (%) (C1038)	0.020 max	0.009
Limestone (%)	5.0 max	4.7			
CaCO <sub>3</sub> in Limestone (%)	70 min	97.0			
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max	--			
Adjusted Potential Phase Composition (C150)					
C <sub>3</sub> S (%)	---	56			
C <sub>2</sub> S (%)	---	12			
C <sub>3</sub> A (%)	15 max	5			
C <sub>4</sub> AF (%)	---	10			

### ASTM C 150-24 and AASHTO M 85-24 Optional Chemical Requirements:

Na <sub>2</sub> Oeq (%) Weekly Averages:	Week 1 0.56	Week 2 0.54	Week 3 0.52	Week 4 --	Max 0.60
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\*\* 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 150-24 & AASHTO M 85-24 STANDARD SPECIFICATIONS FOR TYPE III CEMENT; and  
 ASTM C 150-24 & AASHTO M 85-24 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





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### Additional Data

Item	Test Result	
	Limestone	Inorganic Process Addition Lafarge Cement Kiln Dust
Amount (%)	4.7	--
SiO <sub>2</sub> (%)	1.5	14.9
Al <sub>2</sub> O <sub>3</sub> (%)	0.4	3.8
Fe <sub>2</sub> O <sub>3</sub> (%)	0.2	2.1
CaO (%)	49.6	48.5
SO <sub>3</sub> (%)	0.1	2.4
CO <sub>2</sub> (%)	42.6	n/a

### Base Cement Phase Composition

Item	Test Result
C <sub>3</sub> S (%)	59
C <sub>2</sub> S (%)	13
C <sub>3</sub> A (%)	5
C <sub>4</sub> AF (%)	11

Specific Gravity (For Information Purposes Only) 3.15

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

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