



Cement Mill Test Report

Date of Issue: January 15, 2025

Plant: Exshaw, AB
Product: Portland Cement Type III
Mill Test Report Number: ESW_Type III 2024-12
Manufactured during the month of: December 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)		
SiO ₂ (%)	---	19.1		12 max	6
Al ₂ O ₃ (%)	---	4.0	Blaine Fineness (m ² /kg) (C204)		
Fe ₂ O ₃ (%)	---	3.4		---	468
CaO (%)	---	61.6	Passing 45 µm (%) (C430)		
MgO (%)	6.0 max	4.6		---	99.0
SO ₃ (%) **	3.5 max	3.4	Compressive strength (MPa, [psi]) (C109)		
Loss on Ignition (%)	3.5 max	2.5	1 day	12.0 [1740] min	19.2 [2784]
Insoluble Residue (%)	1.5 max	0.4	3 days	24.0 [3480] min	32.5 [4710]
CO ₂ (%)	---	1.9	28 days (Previous Month's Result)		47.8 [6931]
Limestone (%)	5.0 max	4.5	Time of setting (minutes)		
CaCO ₃ in Limestone (%)	70 min	97.0	Vicat Initial (C191)	45 - 375	87
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max	--	Mortar Bar Expansion (%) (C1038)		
Adjusted Potential Phase Composition (C150)				0.020 max	0.009
C ₃ S (%)	---	57			
C ₂ S (%)	---	12			
C ₃ A (%)	15 max	5			
C ₄ AF (%)	---	10			

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

Na₂Oeq (%) Weekly Averages: Week 1 0.53 Week 2 0.56 Week 3 0.58 Week 4 -- Max 0.60

** May exceed 3.0% SO₃ 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 (%)	4.5	--
SiO ₂ (%)	2.7	13.6
Al ₂ O ₃ (%)	0.6	3.4
Fe ₂ O ₃ (%)	0.3	2.0
CaO (%)	47.5	50.2
SO ₃ (%)	0.3	4.7
CO ₂ (%)	42.4	n/a

Base Cement Phase Composition

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