



Cement Mill Test Report

Date of Issue: September 25, 2024

Plant: Exshaw, AB
 Product: Portland Cement Type III
 Mill Test Report Number: ESW_Type III 2024-8
 Manufactured during the month of: August 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 ₂ (%)	---	19.4	Blaine Fineness (m ² /kg) (C204)	---	477	
Al ₂ O ₃ (%)	---	4.1	Passing 45 μm (%) (C430)	---	99.2	
Fe ₂ O ₃ (%)	---	3.4	Compressive strength (MPa, [psi]) (C109)			
CaO (%)	---	61.9		1 day	12.0 [1740] min	21.0 [3039]
MgO (%)	6.0 max	4.6		3 days	24.0 [3480] min	33.8 [4904]
SO ₃ (%) **	3.5 max	3.5		28 days (Previous Month's Result)		50.4 [7301]
Loss on Ignition (%)	3.5 max	2.2	Time of setting (minutes)			
Insoluble Residue (%)	1.5 max	0.3		Vicat Initial (C191)	45 - 375	80
CO ₂ (%)	---	1.6	Mortar Bar Expansion (%) (C1038)			
Limestone (%)	5.0 max	3.9			0.020 max	0.005
CaCO ₃ in Limestone (%)	70 min	83.0				
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max					
Adjusted Potential Phase Composition (C150)						
C ₃ S (%)	---	56				
C ₂ S (%)	---	13				
C ₃ A (%)	15 max	5				
C ₄ AF (%)	---	10				

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

Na₂O_{eq} (%) Weekly Averages: Week 1 0.51 Week 2 0.54 Week 3 0.54 Week 4 0.56 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 150-22 & 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 (%)	3.9	-
SiO ₂ (%)	2.7	n/a
Al ₂ O ₃ (%)	0.6	n/a
Fe ₂ O ₃ (%)	0.3	n/a
CaO (%)	48.3	n/a
SO ₃ (%)	0.1	n/a
CO ₂ (%)	42.4	n/a

Base Cement Phase Composition

Item	Test Result
C ₃ S (%)	58
C ₂ S (%)	13
C ₃ A (%)	5
C ₄ 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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