



Cement Mill Test Report

Date of Issue: May 13, 2024

Plant: Exshaw, AB
 Product: Portland Cement Type III
 Mill Test Report Number: ESW_Type III 2024-4
 Manufactured during the month of: April 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	7	
SiO ₂ (%)	---	19.2	Blaine Fineness (m ² /kg) (C204)	---	520	
Al ₂ O ₃ (%)	---	4.4	Passing 45 μm (%) (C430)	---	99.4	
Fe ₂ O ₃ (%)	---	3.2	Compressive strength (MPa, [psi]) (C109)			
CaO (%)	---	62.3		1 day	12.0 [1740] min	22.1 [3209]
MgO (%)	6.0 max	4.4		3 days	24.0 [3480] min	31.7 [4590]
SO ₃ (%) **	3.5 max	3.5		28 days (Previous Month's Result)		48.8 [7075]
Loss on Ignition (%)	3.5 max	2.4	Time of setting (minutes)			
Insoluble Residue (%)	1.5 max	0.4	Vicat Initial (C191)	45 - 375	59	
CO ₂ (%)	---	1.8	Mortar Bar Expansion (%) (C1038)	0.020 max	0.009	
Limestone (%)	5.0 max	4.2				
CaCO ₃ in Limestone (%)	70 min	97.0				
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max					
Adjusted Potential Phase Composition (C150)						
C ₃ S (%)	---	57				
C ₂ S (%)	---	12				
C ₃ A (%)	15 max	6				
C ₄ AF (%)	---	10				

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

Na₂O_{eq} (%) Weekly Averages: Week 1 0.54 Week 2 Week 3 0.51 Week 4 0.52 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 (%)	4.2	-
SiO ₂ (%)	1.8	n/a
Al ₂ O ₃ (%)	0.5	n/a
Fe ₂ O ₃ (%)	0.2	n/a
CaO (%)	49.3	n/a
SO ₃ (%)	0.1	n/a
CO ₂ (%)	42.6	n/a

Base Cement Phase Composition

Item	Test Result
C ₃ S (%)	59
C ₂ S (%)	13
C ₃ A (%)	6
C ₄ AF (%)	10

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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