



Cement Mill Test Report

Date of Issue: March 13, 2023

Plant: Exshaw, AB
 Product: Portland Cement Type III
 Mill Test Report Number: MTR-III-2023-02
 Manufactured: February 1-28, 2023

ASTM C 150-21 and AASHTO M 85-18 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 (%)	---	19.2	Blaine Fineness (m ² /kg) (C204)	---	524
Al ₂ O ₃ (%)	---	4.0	Passing 45 μm (%) (C430)	---	99.5
Fe ₂ O ₃ (%)	---	3.5	Autoclave Expansion (%) (C151)**	0.80 max	0.13
CaO (%)	---	61.9	Compressive strength (MPa, [psi]) (C109)		
MgO (%)	6.0 max	4.7	1 day	12.0 [1740] min	26.3 [3820]
SO ₃ (%)	3.5 max	3.3	3 days	24.0 [3480] min	36.8 [5340]
Loss on Ignition (%)	3.5 max	2.4	28 days (Reflects previous month's data)		52.1 [7550]
Insoluble Residue (%)*	1.5 max	0.37	Time of setting (minutes)		
CO ₂ (%)	---	1.8	Vicat Initial (C191)	45 - 375	79
Limestone (%)	5.0 max	4.3	Mortar Expansion (%) (C1038)	0.02 max	0.010
CaCO ₃ in Limestone (%)	70 min	90.1			
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	5			
C ₄ AF (%)	---	11			

ASTM C 150-17 and AASHTO M 85-17 Optional Chemical Requirements:

NaEq (%)	0.60 max	0.56
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We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of ASTM C 150-21 & AASHTO M 85-18 STANDARD SPECIFICATIONS FOR TYPE III CEMENT; and ASTM C 150-21 & AASHTO M 85-18 OPTIONAL CHEMICAL REQUIREMENTS FOR TYPE III LOW ALKALI CEMENT.



Certified to NSF/ANSI/CAN 61

Our laboratory is AASHTO accredited. Grey highlighted tests are not within current Scope of Accreditation.



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

Certified By:

Lorraine Johnson

Lorraine Johnson
Quality Manager



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Additional Data

Item	Test Result	
	Limestone	Inorganic Process Addition Lafarge Cement Kiln Dust
Amount (%)	4.3	-
SiO ₂ (%)	1.5	n/a
Al ₂ O ₃ (%)	0.7	n/a
Fe ₂ O ₃ (%)	0.3	n/a
CaO (%)	50.3	n/a
SO ₃ (%)	0.3	n/a
CO ₂ (%)	42.7	n/a

Base Cement Phase Composition

Item	Test Result
C ₃ S (%)	60
C ₂ S (%)	12
C ₃ A (%)	5
C ₄ AF (%)	11

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

Note: Specific Gravity for Portland Cements is 3.15

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