



Cement Mill Test Report

Date of Issue: June 20, 2023

Plant: Exshaw, AB
 Product: Portland Cement Type III
 Mill Test Report Number: MTR-III-2021-09
 Manufactured: May 1 - 31, 2023

ASTM C 150-20 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)		
SiO ₂ (%)	---	19.3		12 max	6
Al ₂ O ₃ (%)	---	3.9	Blaine Fineness (m ² /kg) (C204)		
Fe ₂ O ₃ (%)	---	3.5		---	540
CaO (%)	---	61.7	Passing 45 µm (%) (C430)		
MgO (%)	6.0 max	4.7		---	99.1
SO ₃ (%)	3.5 max	3.3	Autoclave Expansion (%) (C151)**		
Loss on Ignition (%)	3.5 max	2.6		0.80 max	0.12
Insoluble Residue (%)**	1.5 max	0.3	Compressive strength (MPa, [psi]) (C109)		
CO ₂ (%)	---	2.0	1 day	12.0 [1740] min	24.5 [3547]
Limestone (%)	5.0 max	4.7	3 days	24.0 [3480] min	36.5 [5293]
CaCO ₃ in Limestone (%)	70 min	97.0	28 days (Reflects previous month's data)		51.9 [7523]
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max		Time of setting (minutes)		
Adjusted Potential Phase Composition (C150)			Vicat Initial (C191)	45 - 375	67
C ₃ S (%)	---	56	ASTM C 150-17 and AASHTO M 85-17 Optional Chemical Requirements:		
C ₂ S (%)	---	13	NaEq (%)		
C ₃ A (%)	15 max	4		0.60 max	0.56
C ₄ AF (%)	---	11			

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of ASTM C 150-20 & AASHTO M 85-18 STANDARD SPECIFICATIONS FOR TYPE III CEMENT; and ASTM C 150-20 & AASHTO M 85-18 OPTIONAL CHEMICAL REQUIREMENTS FOR TYPE III LOW ALKALI CEMENT.

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

Certified By: *John W Blair*

 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 ₂ (%)	2.2	n/a
Al ₂ O ₃ (%)	0.5	n/a
Fe ₂ O ₃ (%)	0.2	n/a
CaO (%)	48.7	n/a
SO ₃ (%)	0.1	n/a
CO ₂ (%)	42.5	n/a

Base Cement Phase Composition

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