



Cement Mill Test Report

Date of Issue: June 14, 2022

Plant: Exshaw, AB
 Product: Portland Cement Type III
 Mill Test Report Number: MTR-III-2022-05
 Manufactured: May 1-31, 2022

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)	12 max	6
SiO ₂ (%)	---	19.4	Blaine Fineness (m ² /kg) (C204)	---	590
Al ₂ O ₃ (%)	---	3.9	Passing 45 μm (%) (C430)	---	99.1
Fe ₂ O ₃ (%)	---	3.6	Autoclave Expansion (%) (C151)**	0.80 max	0.11
CaO (%)	---	62.3	Compressive strength (MPa, [psi]) (C109)		
MgO (%)	6.0 max	4.8	1 day	12.0 [1740] min	26.7 [3870]
SO ₃ (%)	3.5 max	3.3	3 days	24.0 [3480] min	38.4 [5570]
Loss on Ignition (%)	3.5 max	2.7	28 days (Reflects previous month's data)		53.2 [7720]
Insoluble Residue (%)**	1.5 max	0.29	Time of setting (minutes)		
CO ₂ (%)	---	1.9	Vicat Initial (C191)	45 - 375	82
Limestone (%)	5.0 max	4.7			
CaCO ₃ in Limestone (%)	70 min	95			
Inorganic Process Addition (Lafarge Cement Kiln Dust)	5.0 max	-			
Adjusted Potential Phase Composition (C150)					
C ₃ S (%)	---	57			
C ₂ S (%)	---	13			
C ₃ A (%)	15 max	4			
C ₄ AF (%)	---	11			
ASTM C 150-17 and AASHTO M 85-17 Optional Chemical Requirements:					
NaEq (%)	0.60 max	0.53			

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.

Certified By:

Lorraine Richards

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

Lorraine Richards
 Quality Control Coordinator



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Additional Data

Item	Test Result	
	Limestone	Inorganic Process Addition Lafarge Cement Kiln Dust
Amount (%)	4.7	-
SiO ₂ (%)	2.1	n/a
Al ₂ O ₃ (%)	0.9	n/a
Fe ₂ O ₃ (%)	0.5	n/a
CaO (%)	50.4	n/a
SO ₃ (%)	0.2	n/a
CO ₂ (%)	41.6	n/a

Base Cement Phase Composition

Item	Test Result
C ₃ S (%)	59
C ₂ S (%)	13
C ₃ A (%)	4
C ₄ AF (%)	12

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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