



Cement Mill Test Report

Date of Issue: March 13, 2023

Plant: Exshaw, AB
 Product: Portland Limestone Cement - Type HSL
 Manufactured: February 1-28, 2023

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray			Blaine Fineness (m2/kg)	---	532
SiO2 (%)	---	17.4	Retained 45 um (%)	24 max	0.5
Al2O3 (%)	---	3.6	Autoclave expansion (%)*	1.0 max	0.11
Fe2O3 (%)	---	3.1	Compressive strength (MPa)		
CaO (%)	---	60.4	1 Day		19.3
MgO (%)	---	4.5	3 day	14.5 min	31.3
SO3 (%)	3.0 max **	3.3	7 day	20.0 min	35.3
Loss on ignition @ 950 (%)	10.0 max	6.5	28 day (January 2023 Results)	26.5 min	44.3
Loss on ignition @ 550(%)		0.9	Time of setting (minutes)		
Insoluble residue (%)*	1.5 max	0.44	Vicat Initial	60- 480	105
Specific Gravity		3.11	Mortar Bar Expansion (%) (C5)*	0.020 max	0.012
<i>Clinker chemistry used in the manufacture of above Type HSL.</i>			Sulphate Resistance (%)	0.05 max	0.02
<i>(For information purposes only.)</i>			Colour (For Information Purposes Only)		33
C3S (%)	---	66.4			
C2S (%)	---	10.6			
C3A (%)	---	4.9			
C4AF (%)	---	11.7			

Other Chemical Information:

NaEq (%) Weekly Average Wk1 0.52 Wk2 0.53 Wk3 0.51 Wk4 0.52

* Latest available value

** May exceed 3.0% SO3 maximum based on A3004-C5 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 the applicable specification for Type HSL.

CSA A3001-18 STANDARD SPECIFICATIONS FOR TYPE HSL CEMENT.



Certified to
NSF/ANSI/CAN 61

Certified By:

Lorraine Johnson

Quality Manager

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