



# Cement Mill Test Report

Date of Issue: April 12, 2023

Plant: Exshaw, AB  
 Product: Portland Limestone Cement - Type HSL  
 Manufactured: March 1-31, 2023

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray					
SiO2 (%)	---	17.4	Blaine Fineness (m2/kg)	---	530
Al2O3 (%)	---	3.6	Retained 45 um (%)	24 max	0.8
Fe2O3 (%)	---	3.1	Autoclave expansion (%)*	1.0 max	0.13
CaO (%)	---	60.5	Compressive strength (MPa)		
MgO (%)	---	4.5	1 Day		20.3
SO3 (%)	3.0 max **	3.2	3 day	14.5 min	31.4
Loss on ignition @ 950 (%)	10.0 max	6.5	7 day	20.0 min	37.1
Loss on ignition @ 550(%)		0.7	28 day (February 2023 Results)	26.5 min	42.0
Insoluble residue (%)*	1.5 max	0.58	Time of setting (minutes)		
Specific Gravity		3.11	Vicat Initial	60- 480	109
<i>Clinker chemistry used in the manufacture of above Type HSL.</i>			Mortar Bar Expansion (%) (C5)*	0.020 max	0.010
<i>(For information purposes only.)</i>			Sulphate Resistance (%)	0.05 max	0.03
C3S (%)	---	67.1	Colour (For Information Purposes Only)		33
C2S (%)	---	9.7			
C3A (%)	---	5.0			
C4AF (%)	---	11.7			

**Other Chemical Information:**

NaEq (%) Weekly Average Wk1 0.52 Wk2 0.54 Wk3 0.54 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:

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Quality Manager

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