



Certified to  
NSF/ANSI/CAN 61

## Cement Mill Test Report

Month of Issue: JUNE 2021

Plant: **Richmond, British Columbia**  
 Product: **Portland Cement Type GUL / MLS**  
 Mill Test Report #: **C-GUL-21-06**  
 Manufactured: **MAY 2021**

### CSA A3001- 18 Standard Requirements

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray			Air content of mortar (%) (C 185)	---	5.1
SiO <sub>2</sub> (%)	---	18.9	Blaine Fineness (m <sup>2</sup> /kg)	---	478
Al <sub>2</sub> O <sub>3</sub> (%)	---	4.6	Passing 45 um (%)	72 min	99.2
Fe <sub>2</sub> O <sub>3</sub> (%)	---	3.0			
CaO (%)	---	63.4	Compressive strength (MPa)		
MgO (%)	---	0.9	3 days	14.5 min	32.0
SO <sub>3</sub> (%)	3.0 max*	2.7	7 days	20.0 min	37.9
Loss on ignition @ 950 (%)	10.0 max	5.3	28 days (Reflects previous month's data)	26.5 min	46.1
			Time of setting (minutes)		
Insoluble residue (%)	---	0.27	Vicat Initial	45-375	94
Free Lime (%)	---	1.1	Sulphate Resistance (C8)	0.10	0.084
Potential Phase Composition			Colour (L*)	---	60
C3S (%)	---	72	Cement Density		3.09
C2S*** (%)	---	17			
C3A (%)	---	7			
C4AF (%)	---	9			

#### CSA A3001-18 Optional Chemical Requirements:

NaEq (Alkali) (%) 0.60 max 0.52

\* May exceed 3.0% SO<sub>3</sub> maximum based on our A3004-C5 results of <0.020% expansion at 14 days.

\*\*\* Corrected by using ASTM Calculation for Limestone Cement

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of applicable specifications for Type GUL \ MSL

CSA A3001-18 STANDARD SPECIFICATIONS FOR TYPE GUL \ MSL CEMENT;

Cement complies with NSF 61

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Questions or enquiries can be directed to Matt Dalkie

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 6/3/2021