



# Cement Mill Test Report

Month of Issue: JANUARY 2021

Plant: **Richmond, British Columbia**  
 Product: **Portland Cement Type GU / MS**  
 Mill Test Report #: **C-GU-21-01**  
 Manufactured: **DECEMBER 2020**

## 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> (%)	---	20.2	Blaine Fineness (m <sup>2</sup> /kg)	---	395
Al <sub>2</sub> O <sub>3</sub> (%)	---	4.8	Passing 45 um (%) (C 430)	72 min	97.4
Fe <sub>2</sub> O <sub>3</sub> (%)	---	3.4	Autoclave expansion (%)	1.0 max	0.03
CaO (%)	---	63.6	Compressive strength (Mpa)		
MgO (%)	5.0 max	1.0	3 days	14.5 min	24.8
SO <sub>3</sub> (%)	3.0 max*	3.1	7 days	20.0 min	32.2
Loss on ignition @ 950 (%)	3.5 max	2.9	28 days (Reflects previous month's data)	26.5 min	44.6
Loss on ignition @ 550 (%)	3.0 max	1.1	Time of setting (minutes)		
Insoluble residue (%)	1.5 Max	---	Vicat Initial (C 191)	45 - 375	91
Potential Phase Composition			Colour (L*)		58
C3S (%)	---	59	Mortar Bar Expansion C5 (%) **	0.020 max	0.008
C2S (%)	---	13	Mortar Bar Resistance C6 (%) **	0.050 max	0.031
C3A (%)	8	7			
C4AF (%)	---	10			

### CSA A3001-18 Optimal Chemical Requirements

NaEq (Alkali) (%) **0.60 max** **0.54**

\* May exceed 3.0%SO<sub>3</sub> maximum based on our A3004-C5 results of <0.02%expansion at 14 days

\*\* Current Production run not available - most recent provided

We certify that the above described cement, at the time of shipment, meets the chemical and physical requirements of applicable specifications for Type GU & Type MS

CSA A3001-18 STANDARD SPECIFICATIONS FOR TYPE GU / MS CEMENT;

CSA A3001-18 OPTIONAL CHEMICAL REQUIREMENTS FOR TYPES GU / MS LOW ALKALI CEMENT.

Cement complies with NSF 61

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Questions or enquiries can be directed to Matt Dalkie

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Certified By:

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 1/4/2021