



## Cement Mill Test Report

Month of Issue: APRIL 2023

<b>Plant:</b>	<b>Richmond, British Columbia</b>
<b>Product:</b>	Portland Cement Type GU / MS
<b>Mill Test Report #</b>	C-GU-23-04
<b>Manufactured:</b>	MARCH 2023

### 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)	---	6.7	
SiO2 (%)	---	20.6	Blaine Fineness (m2/kg)	---	437	
Al2O3 (%)	---	4.9	Passing 45 um (%) (C 430)	72 min	99.2	
Fe2O3 (%)	---	3.4	Compressive strength (Mpa)			
CaO (%)	---	64.4		3 days	14.5 min	32.0
MgO (%)	5.0 max	0.8		7 days	20.0 min	41.4
SO3 (%)	3.0 max*	2.8		28 days (Reflects previous month's data)	26.5 min	49.7
Loss on ignition @ 950 (%)	3.5 max	2.3	Time of setting (minutes)			
Loss on ignition @ 550 (%)	3.0 max	0.9	Vicat Initial (C 191)	45 - 375	78	
Insoluble residue (%)	1.5 Max	0.7	Colour (L*)		63	
Potential Phase Composition			Mortar Bar Expansion C5 (%) **	0.020 max	-0.001	
C3S (%)	---	60	Mortar Bar Resistance C6 (%) **	0.050 max	0.036	
C2S (%)	---	14				
C3A (%)	8	7				
C4AF (%)	---	10				
CSA A3001-18 Optimal Chemical Requirements						
NaEq (Alkali) (%)	0.60 max	0.54				

\* May exceed 3.0% SO3 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

Western BU - Richmond  
 7611 No 9 Rd Richmond, BC  
 604 244 4300

Questions or enquiries can be directed to Matt Dalkie  
 Matt Dalkie, P.Eng., LEED AP BD+C  
 Lafarge - Technical Services Engineer  
 7591 #9 Road, Richmond, BC, V6W 0A6 Canada  
 P +1 604 233 9516, C +1 604 328 7793, F +1 604 270 1731  
 E matt.dalkie@lafarge.com

Certified By:

Robyn van Zutphen  
 Quality Supervisor  
 4/3/2023