



Certified to
NSF/ANSI/CAN 61

Cement Mill Test Report

Month of Issue: DECEMBER 2021

Plant: **Richmond, British Columbia**
 Product: **Portland Cement Type GUL \ MSL**
 Mill Test Report #: **C-GUL-21-12**
 Manufactured: **NOVEMBER 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)	---	5.8
SiO ₂ (%)	---	19.5	Blaine Fineness (m ² /kg)	---	422
Al ₂ O ₃ (%)	---	4.7	Passing 45 um (%)	72 min	99.1
Fe ₂ O ₃ (%)	---	3.1			
CaO (%)	---	63.3	Compressive strength (MPa)		
MgO (%)	---	0.8	3 days	14.5 min	30.1
SO ₃ (%)	3.0 max*	2.9	7 days	20.0 min	36.5
Loss on ignition @ 950 (%)	10.0 max	4.2	28 days (Reflects previous month's data)	26.5 min	44.9
			Time of setting (minutes)		
Insoluble residue (%)	---	0.38	Vicat Initial	45-375	86
Free Lime (%)	---	1.4	Sulphate Resistance (C8)	0.10	0.091
Potential Phase Composition			Colour (L*)	---	58
C3S (%)	---	66	Cement Density		3.09
C2S*** (%)	---	19			
C3A (%)	---	7			
C4AF (%)	---	9			

CSA A3001-18 Optional Chemical Requirements:

NaEq (Alkali) (%) **0.60 max** **0.53**

* May exceed 3.0% SO₃ 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

Certified By:

Leila Saidi

Leila Saidi P.Eng
Quality Supervisor
11/30/2021

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@lafargeholcim.com