



Certified to
NSF/ANSI/CAN 61

Cement Mill Test Report

Month of Issue: NOVEMBER 2022

Plant: **Richmond, British Columbia**
 Product: **Portland Cement Type GUL \ MSL**
 Mill Test Report #: **C-GUL-22-11**
 Manufactured: **OCTOBER 2022**

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)	---	6.1
SiO ₂ (%)	---	18.6	Blaine Fineness (m ² /kg)	---	463
Al ₂ O ₃ (%)	---	4.5	Passing 45 um (%)	72 min	99.0
Fe ₂ O ₃ (%)	---	3.0			
CaO (%)	---	63.2	Compressive strength (MPa)		
MgO (%)	---	0.7	3 days	14.5 min	30.6
SO ₃ (%)	3.0 max*	2.8	7 days	20.0 min	38.9
Loss on ignition @ 950 (%)	10.0 max	6.1	28 days (Reflects previous month's data)	26.5 min	45.3
			Time of setting (minutes)		
Insoluble residue (%)	---	0.44	Vicat Initial	45-375	110
Free Lime (%)	---	0.8	Sulphate Resistance (C8)	0.10	0.091
Potential Phase Composition			Colour (L*)	---	64
C3S (%)	---	74	Cement Density		3.09
C2S*** (%)	---	18			
C3A (%)	---	7			
C4AF (%)	---	9			
CSA A3001-18 Optional Chemical Requirements:					
NaEq (Alkali) (%)	0.60 max	0.47			

* May exceed 3.0% SO₃ maximum based on our 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 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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Certified By:

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 11/14/2022