

Cement Mill Test Report

Month of Issue: MAY 2021

Plant: **Richmond, British Columbia**
 Product: **Portland Cement Type GUL**
 Mill Test Report #: **C-GUL-21-05**
 Manufactured: **APRIL 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)	---	5.9
SiO ₂ (%)	---	18.7	Blaine Fineness (m ² /kg)	---	480
Al ₂ O ₃ (%)	---	4.5	Passing 45 um (%)	72 min	99.1
Fe ₂ O ₃ (%)	---	3.1	Autoclave expansion (%)	1.0 max	0.04
CaO (%)	---	63.3	Compressive strength (MPa)		
MgO (%)	---	1.0	3 days	14.5 min	31.9
SO ₃ (%)	3.0 max*	2.7	7 days	20.0 min	38.6
Loss on ignition @ 950 (%)	10.0 max	5.2	28 days (Reflects previous month's data)	26.5 min	46.4
Insoluble residue (%)	---	0.26	Time of setting (minutes)		
Free Lime (%)	---	1.2	Vicat Initial	45-375	92
Potential Phase Composition			Colour (L*)	---	59
C ₃ S (%)	---	73	Cement Density		3.09
C ₂ S*** (%)	---	16			
C ₃ A (%)	---	7			
C ₄ AF (%)	---	9			

CSA A3001-18 Optional Chemical Requirements:

NaEq (Alkali) (%) **0.60 max** **0.52**

* 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

CSA A3001-18 STANDARD SPECIFICATIONS FOR TYPE GUL CEMENT;

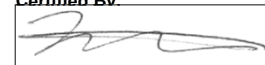
Cement complies with NSF 61

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Certified By:



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 5/10/2021