

Cement Mill Test Report

Month of Issue: NOVEMBER 2021

Plant:	Richmond, British Columbia
Product:	Portland Cement Type GUL \ MSL
Mill Test Report #	C-GUL-21-11
Manufactured:	OCTOBER 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)	---	5.7
SiO2 (%)	---	19.9	Blaine Fineness (m2/kg)	---	400
Al2O3 (%)	---	4.8	Passing 45 um (%)	72 min	99.0
Fe2O3 (%)	---	3.1			
CaO (%)	---	62.8	Compressive strength (MPa)		
MgO (%)	---	0.9	3 days	14.5 min	29.7
SO3 (%)	3.0 max*	3.0	7 days	20.0 min	36.2
Loss on ignition @ 950 (%)	10.0 max	3.3	28 days (Reflects previous month's data)	26.5 min	43.3
			Time of setting (minutes)		
Insoluble residue (%)	---	0.36	Vicat Initial	45-375	88
Free Lime (%)	---	1.3	Sulphate Resistance (C8)	0.10	0.091
Potential Phase Composition			Colour (L*)	---	58
C3S (%)	---	59	Cement Density		3.09
C2S*** (%)	---	22			
C3A (%)	---	8			
C4AF (%)	---	9			

CSA A3001-18 Optional Chemical Requirements:

NaEq (Alkali) (%)	0.60 max	0.57
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* 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;

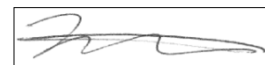
Cement complies with NSF 61

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Certified By:



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11/2/2021