Cement Mill Test Report

Month of Issue: April 2024

Plant:	**Richmond, British Columbia**
Product:	**Portland Cement Type GUL / MSL**
Mill Test Report #	**R-GUL-24-04**
Manufactured:	**March 2024**

CSA A3000:23 Standard Requirements

CHEMICAL ANALYSIS

Item	Spec limit	Test Result
Rapid Method, X-Ray		
SiO2 (%)	---	18.4
Al2O3 (%)	---	4.6
Fe2O3 (%)	---	3.0
CaO (%)	---	62.7
MgO (%)	---	1.0
SO3 (%)	3.0 max*	2.7
Loss on ignition @ 950 (%)	10.0 max	6.7
Insoluble residue (%)	---	0.39
Free Lime (%)	---	0.7
Inorganic Process Addition (%)		3
Potential Phase Composition*		
C3S (%)	---	72
C2S (%)	---	21
C3A (%)	---	7
C4AF (%)	---	9

PHYSICAL ANALYSIS

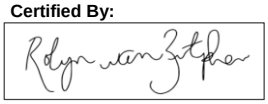
Item	Spec limit	Test Result
Air content of mortar (%) (C 185)	---	6.1
Blaine Fineness (m2/kg)	---	455
Passing 45 um (%)	72 min	99.0
Compressive strength (MPa)		
3 days	14.5 min	30.2
7 days	20.0 min	37.5
28 days (Reflects previous month's data)	26.5 min	45.3
Time of setting (minutes)		
Vicat Initial	45-375	115
Sulphate Resistance (C6)	0.05	0.04
Colour (L*)	---	65
Cement Density		3.09

CSA A3000:23 Optional Chemical Requirements:	
NaEq (Alkali) (%)	**0.42**

*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 A3000:23 STANDARD SPECIFICATIONS FOR TYPE GUL / MSL CEMENT;
Cement complies with NSF 61

Certified By:



Robyn van Zutphen
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4/19/2024

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