

Cement Mill Test Report

Month of Issue: January 2024

Plant: **Richmond, British Columbia**
 Product: **OneCem**
 Mill Test Report #: **R-TIL-24-01**
 Manufactured: **December 2023**

ASTM C595 - 21 Standard Requirements

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray (C 114)			Air content of mortar (%) (C 185)	12 max	5.2
SiO2 (%)	---	18.8	Blaine Fineness (m2/kg) (C 204)	---	464
Al2O3 (%)	---	4.5	Passing 325 (%) (C 430)	---	99.4
Fe2O3 (%)	---	3.1	Compressive strength (Mpa [PSI]) (C 109)		
CaO (%)	---	62.4			
MgO (%)	---	0.9			
SO3 (%)	3.0 max*	2.7			
Loss on ignition @ 950 (%)	10.0 max	6.4	3 days	13.0 min	<u>Mpa</u> <u>PSI</u> 29.8 4320
NaEq (Alkali) (%)	---	0.46	7 days	20.0 min	37.7 5470
Insoluble residue (%)	---	0.50		25.0 min	46.3 6710
Inorganic Process Addition (%)		3.5	28 days (Reflects previous month's data)		
Adjusted Potential Phase Composition**			Time of setting (minutes)		
C3S (%)	---	41	Vicat Initial (C 191)	45-420	103
C2S (%)	---	22	Mortar Bar Expansion (C 1038)*		
C3A (%)	---	7	14 days, % max	0.020 max	0.002
C4AF (%)	---	9	Cement Density (C186)		3.09
Sulphate Resistance C1012 (Q2/2023)	0.10 max	0.092			
Sulphate Resistance ASTM C-462 (Q4/2023)		0.03			

* May exceed 3.0% SO3 maximum based on our C 1038 results of <0.02% 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:
 ASTM C 595-21 & AASHTO M 240-21 STANDARD SPECIFICATIONS FOR TYPE IL(15), TYPE IL(15) MS CEMENT

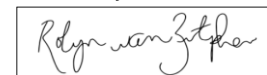
Cement complies with NSF 61

Western BU - Richmond
 7611 No 9 Rd Richmond, BC
 604 244 4300

Questions or enquiries can be directed to Rob Shogren

Rob Shogren, PhD
 Lafarge - Technical Director
 5400 W Marginal Way SW, Seattle WA
 P +1 206 923 9953
 E Rob.Shogren@lafargeholcim.com

Certified By:



Robyn van Zutphen
 Quality Manager
 1/8/2024