

## MILL TEST REPORT

Cement Type: **CSA Type GU**  
**Low Alkali Portland Cement**

Plant: **Delta, BC**

<b>Certificate #:</b>	<b>D1-376</b>
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Production Period:	Aug 01 2009 Aug 31 2009	Test Result	CSA A3001 Specification
SiO2 (%)	CSA A3003	19.8	-
Al2O3 (%)	CSA A3003	5.06	-
Fe2O3 (%)	CSA A3003	3.62	-
CaO (%)	CSA A3003	65.0	-
MgO (%)	CSA A3003	0.92	max. 5.0
SO3 (%)	CSA A3003	2.80	max. 3.0
Na2O (%)	CSA A3003	0.30	-
K2O (%)	CSA A3003	0.37	-
TiO2 (%)	CSA A3003	0.25	-
C3S (%)	ASTM C150	67	-
C2S (%)	ASTM C150	6	-
C3A (%)	CSA A3003	7.3	-
C4AF (%)	ASTM C150	11.0	-
Equivalent Alkalies (%)	ASTM C150	0.55	-
Loss on Ignition (%)	CSA A3003	2.7	max. 3.0
Insoluble Residue (%)	CSA A3003	0.36	max. 1.5
Free Calcium Oxide (%)	CSA A3003	0.40	-
Vicat Setting Time			
Initial (minutes)	CSA A3004-B2	99	min. 45 max. 360
Final (minutes)	CSA A3004-B2	203	-
Blaine Fineness (m2/kg)	ASTM C204	389	-
+325 mesh	CSA A3004-A3	2.6	max. 28
Air Content (%)	CSA A3004-C4	6.97	-
Autoclave Expansion (%)	CSA A3004-B5	-0.01	max. 1.0
Compressive Strength		MPa / psi	
3 Day	CSA A3004-C2	27.5 / 3992	min. 14.5
7 Day	CSA A3004-C2	33.4 / 4846	min. 20.0
28 Day (previous month)	CSA A3004-C2	39.6 / 5747	min. 26.5

This will certify that the above described cement meets the standard chemical and physical requirements of CSA Specification A3001-08 for Type GU Portland Cement.