

## MILL TEST REPORT

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

Plant: **Delta, BC**

<b>Certificate #:</b>	<b>D1-372</b>
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Production Period:	Apr 01 2009 Apr 30 2009	Test Result	CSA A3001 Specification
SiO2 (%)	CSA A3003	19.9	-
Al2O3 (%)	CSA A3003	5.09	-
Fe2O3 (%)	CSA A3003	3.76	-
CaO (%)	CSA A3003	65.1	-
MgO (%)	CSA A3003	0.83	max. 5.0
SO3 (%)	CSA A3003	2.81	max. 3.0
Na2O (%)	CSA A3003	0.30	-
K2O (%)	CSA A3003	0.35	-
TiO2 (%)	CSA A3003	0.26	-
C3S (%)	ASTM C150	66	-
C2S (%)	ASTM C150	7	-
C3A (%)	CSA A3003	7.1	-
C4AF (%)	ASTM C150	11.4	-
Equivalent Alkalies (%)	ASTM C150	0.54	-
Loss on Ignition (%)	CSA A3003	2.8	max. 3.0
Insoluble Residue (%)	CSA A3003	0.33	max. 1.5
Free Calcium Oxide (%)	CSA A3003	0.41	-
<b>Vicat Setting Time</b>			
Initial (minutes)	CSA A3004-B2	106	min. 45 max. 360
Final (minutes)	CSA A3004-B2	211	-
<b>Blaine Fineness (m2/kg)</b>	ASTM C204	387	-
+325 mesh	CSA A3004-A3	1.3	max. 28
<b>Air Content (%)</b>	CSA A3004-C4	5.98	-
<b>Autoclave Expansion (%)</b>	CSA A3004-B5	-0.01	max. 1.0
<b>Compressive Strength</b>		<b>MPa / psi</b>	
3 Day	CSA A3004-C2	29.3 / 4244	min. 14.5
7 Day	CSA A3004-C2	36.2 / 5251	min. 20.0
28 Day (previous month)	CSA A3004-C2	43.8 / 6346	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.