

**MILL TEST CERTIFICATE FOR CSA PORTLAND CEMENT TYPE HS**

Production for Week Ending 2008:	6-Apr	13-Apr	20-Apr	4-May	11-May	18-May	25-May	1-Jun	8-Jun	15-Jun	
<b><u>CHEMICAL ANALYSIS</u></b>											
SiO <sub>2</sub>	%	21.1	21.1	20.4	21.1	21.0	20.9	20.7	20.3	20.8	20.8
Al <sub>2</sub> O <sub>3</sub>	%	4.1	4.0	3.9	4.2	4.0	3.8	3.9	3.8	4.0	4.0
Fe <sub>2</sub> O <sub>3</sub>	%	4.3	4.5	4.2	4.1	4.3	4.4	4.3	4.4	4.4	4.4
CaO	%	62.0	62.8	62.7	62.5	62.6	62.6	62.5	63.2	63.1	63.1
MgO	%	3.09	2.95	3.11	3.08	3.16	3.07	3.75	3.77	3.60	3.59
SO <sub>3</sub>	%	2.13	2.23	2.14	2.30	2.12	2.12	1.99	1.98	1.99	2.05
Loss on Ignition	%	0.85	1.09	1.53	0.82	1.03	1.52	1.40	1.88	1.16	1.12
Na <sub>2</sub> O	%	0.33	0.31	0.31	0.30	0.29	0.28	0.26	0.21	0.22	0.23
K <sub>2</sub> O	%	0.49	0.53	0.50	0.48	0.49	0.49	0.42	0.41	0.44	0.45
Insoluble Residue	%	0.18	0.17	0.23	0.25	0.22	0.19	0.22	0.19	0.22	0.21
T. Alk.	%	0.65	0.66	0.64	0.62	0.61	0.60	0.53	0.48	0.50	0.52
C <sub>3</sub> S	%	53	55	62	53	57	58	59	65	60	60
C <sub>2</sub> S	%	20	19	12	20	17	16	15	9	15	15
C <sub>3</sub> A	%	3.5	3.2	3.2	4.2	3.3	2.8	3.0	2.7	3.1	3.1
C <sub>4</sub> AF	%	13.0	13.5	12.8	12.6	13.0	13.2	13.0	13.3	13.4	13.4
<b><u>PHYSICAL PROPERTIES</u></b>											
Blaine	m <sup>2</sup> /kg	388	390	393	390	389	396	389	396	391	388
Retained on 45µ sieve	%	3.57	4.48	4.93	3.70	5.49	7.24	6.47	6.32	4.65	4.53
Autoclave Expansion	%	0.070	0.070	0.069	0.071	0.058	0.066	0.074	0.057	0.103	0.096
Sulphate Expansion	%	0.028	0.028	0.028	0.028	0.028	0.027	0.027	0.027	0.027	0.027
Vicat Initial Set	min	87	87	76	86	89	82	76	81	81	86
False Set	%	79	79	82	88	87	87	93	95	84	82
Air Content	%	6.90	6.90	7.20	7.00	7.05	7.10	8.00	8.60	8.60	8.53
3 Day	MPa	20.1	22.1	23.9	23.3	22.1	21.7	19.6	20.5	19.8	20.6
7 Day	MPa	31.0	31.4	29.5	30.2	28.6	28.0	26.0	25.6	26.3	26.3
28 Day	MPa	44.0	41.0	39.9	41.7	38.1	37.5	35.3			

Manufactured cement conforms to CSA Standard A3001-03.

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