

MILL TEST CERTIFICATE FOR CSA PORTLAND CEMENT TYPE HS

Production for Week Ending 2008:	13-Jan	20-Jan	27-Jan	10-Feb	17-Feb	24-Feb	2-Mar	9-Mar	16-Mar	23-Mar	30-Mar	
<u>CHEMICAL ANALYSIS</u>												
SiO ₂	%	20.6	20.5	20.5	20.6	20.4	21.1	20.5	20.7	20.6	21.0	21.2
Al ₂ O ₃	%	3.9	4.0	3.9	4.0	3.7	3.9	3.9	3.9	4.0	4.1	4.1
Fe ₂ O ₃	%	4.5	4.3	4.4	4.3	4.3	4.5	4.3	4.5	4.4	4.5	4.3
CaO	%	62.6	62.2	62.7	62.7	62.4	62.7	63.1	63.0	62.5	62.3	62.1
MgO	%	3.14	3.35	3.23	3.23	3.15	3.12	3.05	2.90	2.80	3.35	2.87
SO ₃	%	2.09	2.11	2.08	1.95	2.18	2.04	2.16	2.02	2.08	2.21	1.99
Loss on Ignition	%	1.52	1.89	1.87	2.10	2.06	1.09	1.55	1.70	1.84	1.13	1.24
Na ₂ O	%	0.29	0.29	0.29	0.30	0.33	0.32	0.33	0.32	0.33	0.32	0.31
K ₂ O	%	0.44	0.42	0.47	0.44	0.49	0.45	0.45	0.44	0.45	0.45	0.45
Insoluble Residue	%	0.21	0.25	0.20	0.19	0.28	0.22	0.15	0.19	0.26	0.26	0.23
T. Alk.	%	0.58	0.57	0.60	0.59	0.65	0.61	0.62	0.61	0.63	0.61	0.61
C ₃ S	%	60	59	61	61	62	57	63	61	58	54	52
C ₂ S	%	14	15	13	13	12	18	11	14	15	20	21
C ₃ A	%	2.8	3.1	2.9	3.1	2.7	2.9	2.9	2.7	3.1	3.3	3.6
C ₄ AF	%	13.6	13.2	13.3	13.2	13.0	13.5	13.2	13.7	13.5	13.6	13.2
<u>PHYSICAL PROPERTIES</u>												
Blaine	m ² /kg	386	376	394	402	398	387	382	389	388	388	384
Retained on 45µ sieve	%	5.19	5.70	6.30	5.47	4.76	4.35	5.02	5.54	5.28	3.86	4.60
Autoclave Expansion	%	0.042	0.042	0.042	0.042	0.042	0.035	0.035	0.023	0.031	0.047	0.022
Sulphate Expansion	%	0.031	0.031	0.027		0.025	0.025	0.025	0.023	0.023	0.023	0.023
Vicat Initial Set	min	113	113	108	93	93	90	90	89	88	87	103
False Set	%	78	78	77	75	75	97	97	89	87	83	94
Air Content	%	7.60	7.60	7.50	7.20	7.20	7.00	7.00	6.90	6.93	7.00	6.10
3 Day	MPa	21.1	22.9	22.3	22.3	22.8	20.0	23.2	21.8	21.9	22.4	20.3
7 Day	MPa	30.1	32.5	28.6	30.2	30.8	30.5	29.4	29.5	29.9	31.0	28.4
28 Day	MPa	40.9	38.2	40.7	40.9	38.3	45.4	37.5	40.5	39.6		

Manufactured cement conforms to CSA Standard A3001-03.

Date: April 14, 2008

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