

MILL TEST CERTIFICATE FOR CSA PORTLAND CEMENT TYPE HS

Production for Week Ending 2008:	5-Oct	12-Oct	19-Oct	26-Oct	2-Nov	9-Nov	16-Nov	23-Nov	30-Nov	
<u>CHEMICAL ANALYSIS</u>										
SiO ₂	%	21.0	21.2	21.3	21.4	21.3	21.3	21.5	21.2	21.0
Al ₂ O ₃	%	4.0	4.0	3.9	4.0	3.9	4.0	3.8	3.9	3.9
Fe ₂ O ₃	%	4.4	4.5	4.5	4.6	4.6	4.5	4.5	4.5	4.5
CaO	%	62.0	62.6	62.0	63.4	64.0	63.3	63.0	62.9	63.7
MgO	%	3.34	2.86	2.98	2.18	2.29	2.75	2.56	2.68	2.79
SO ₃	%	2.08	2.05	2.03	2.05	2.18	2.08	2.14	2.10	2.15
Loss on Ignition	%	1.40	1.51	1.38	1.40	1.40	1.50	0.95	1.30	1.29
Na ₂ O	%	0.24	0.21	0.22	0.23	0.25	0.21	0.25	0.22	0.24
K ₂ O	%	0.52	0.54	0.54	0.49	0.51	0.52	0.55	0.54	0.56
Insoluble Residue	%	0.33	0.46	0.46	0.46	0.19	0.28	0.30	0.23	
T. Alk.	%	0.58	0.57	0.57	0.56	0.58	0.55	0.61	0.58	0.60
C ₃ S	%	54	55	52	57	60	56	54	56	61
C ₂ S	%	19	20	22	19	16	19	21	19	14
C ₃ A	%	3.0	2.9	2.7	2.8	2.5	3.0	2.5	2.8	2.7
C ₄ AF	%	13.5	13.8	13.8	14.0	13.9	13.5	13.7	13.7	13.7
<u>PHYSICAL PROPERTIES</u>										
Blaine	m ² /kg	406	409	402	408	422	414	417	412	402
Retained on 45µ sieve	%	5.27	5.71	5.87	5.01	7.10	6.31	4.80	4.15	5.60
Autoclave Expansion	%	0.055	0.041	0.037	0.005	0.003	0.016	0.018	0.018	
Sulphate Expansion	%	0.028	0.028	0.028	0.073	0.073	0.073	0.073	0.073	0.073
Vicat Initial Set	min	95	94	94	95	91	92	83	81	
False Set	%	62	76	79	85	70	62	72	74	
Air Content	%	8.13	8.91	9.10	8.80	9.30	9.53	9.60	9.60	
3 Day	MPa	19.2	18.4	17.5	19.8	20.7	18.5	19.7	20.4	20.0
7 Day	MPa	25.0	23.6	24.1	25.9	26.4	23.7	25.3	26.1	
28 Day	MPa	37.3	33.3	37.0	35.8	36.5				

Manufactured cement conforms to CSA Standard A3001-03.

Date: December 01, 2008

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