Lehigh Inland Cement Limited
12640 - 156 Street
Edmonton, AB T5L 4P8
Phone (780) 420-2500
Fax (780) 420-2556
www.inlandcanada.com

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	22-Jun	29-Jun
CHEMICAL ANALYSIS													
SiO_2	%	21.1	21.1	20.4	21.1	21.0	20.9	20.7	20.3	20.8	20.8	20.8	20.5
Al_2O_3	%	4.1	4.0	3.9	4.2	4.0	3.8	3.9	3.8	4.0	4.0	4.0	3.9
Fe_2O_3	%	4.3	4.5	4.2	4.1	4.3	4.4	4.3	4.4	4.4	4.4	4.3	4.1
CaO	%	62.0	62.8	62.7	62.5	62.6	62.6	62.5	63.2	63.1	63.1	63.0	62.7
MgO	%	3.09	2.95	3.11	3.08	3.16	3.07	3.75	3.77	3.60	3.59	3.66	3.22
SO_3	%	2.13	2.23	2.14	2.30	2.12	2.12	1.99	1.98	1.99	2.05	2.08	2.19
Loss on Ignition	%	0.85	1.09	1.53	0.82	1.03	1.52	1.40	1.88	1.16	1.12	1.37	2.03
Na_2O	%	0.33	0.31	0.31	0.30	0.29	0.28	0.26	0.21	0.22	0.23	0.24	0.24
K_2O	%	0.49	0.53	0.50	0.48	0.49	0.49	0.42	0.41	0.44	0.45	0.43	0.43
Insoluble Residue	%	0.18	0.17	0.23	0.25	0.22	0.19	0.22	0.19	0.22	0.21	0.23	0.19
T. Alk.	%	0.65	0.66	0.64	0.62	0.61	0.60	0.53	0.48	0.50	0.52	0.51	0.52
C_3S	%	53	55	62	53	57	58	59	65	60	60	60	61
C_2S	%	20	19	12	20	17	16	15	9	15	15	15	13
C_3A	%	3.5	3.2	3.2	4.2	3.3	2.8	3.0	2.7	3.1	3.1	3.3	3.4
C_4AF	%	13.0	13.5	12.8	12.6	13.0	13.2	13.0	13.3	13.4	13.4	13.1	12.4
PHYSICAL PROPERTIES													
Blaine	m^2/kg	388	390	393	390	389	396	389	396	391	388	390	407
Retained on 45µ sieve	%	3.57	4.48	4.93	3.70	5.49	7.24	6.47	6.32	4.65	4.53	5.42	7.93
Autoclave Expansion	%	0.070	0.070	0.069	0.071	0.058	0.066	0.074	0.057	0.103	0.096	0.067	0.048
Sulphate Expansion	%	0.028	0.028	0.028	0.028	0.028	0.027	0.027	0.027	0.032	0.032	0.032	0.032
Vicat Initial Set	min	87	87	76	86	89	82	76	81	81	86	94	89
False Set	%	79	79	82	88	87	87	93	95	84	82	80	83
Air Content	%	6.90	6.90	7.20	7.00	7.05	7.10	8.00	8.60	8.60	8.53	8.16	8.40
3 Day	MPa	20.1	22.1	23.9	23.3	22.1	21.7	19.6	20.5	19.8	20.6	20.5	20.7
7 Day	MPa	31.0	31.4	29.5	30.2	28.6	28.0	26.0	25.6	26.3	26.3	26.8	26.3
28 Day	MPa	44.0	41.0	39.9	41.7	38.1	37.5	35.3	32.9	36.1	38.1		

Manufactured cement conforms to CSA Standard A3001-03.

Robin Cowdrey

Date: July 15, 2008

Robin Cowdrey
Plant Chemist

Lehigh Inland Cement Limited
12640 - 156 Street
Edmonton, AB T5L 4P8
Phone (780) 420-2500
Fax (780) 420-2556
www.inlandcanada.com

MILL TEST CERTIFICATE FOR CSA PORTLAND CEMENT TYPE HS

Production for Week Ending 2008: 6-Jul

CHEMICAL ANALYSIS		
SiO_2	%	21.0
Al_2O_3	%	3.9
Fe_2O_3	%	4.4
CaO	%	62.9
MgO	%	3.36
SO_3	%	2.04
Loss on Ignition	%	1.54
Na_2O	%	0.22
K_2O	%	0.42
Insoluble Residue	%	
T. Alk.	%	0.50
C_3S	%	58
C_2S	%	16
C_3A	%	3.0
C_4AF	%	13.3
PHYSICAL PROPERTIES		
Blaine	m^2/kg	408
Retained on 45µ sieve	%	4.41
Autoclave Expansion	%	0.049
Sulphate Expansion	%	0.032
Vicat Initial Set	min	87
False Set	%	84
Air Content	%	8.80
3 Day	MPa	19.7
7 Day	MPa	25.6
28 Day	MPa	

Manufactured cement conforms to CSA Standard A3001-03.

Date: July 15, 2008

Robin Cowdrey

Robin Cowdrey
Plant Chemist