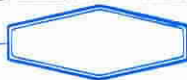


ASH GROVE CEMENT COMPANY



Western Region
P.O. Box 51
Nephi, Utah 84648
435-357-1212

LEAMINGTON PLANT

Mill Certificate Number 149
Silo Numbers: 1, 3, 4 and 6
Type: V LA
Production Period: 10/1/09 thru 10/31/09

Date: 2-Nov-09

STANDARD REQUIREMENTS
ASTM C - 150 Tables 1 and 3

CHEMICAL			PHYSICAL			
Item (C 114)	Spec. Limit	Test Result	Item	Spec. Limit	Test Result	
SiO2 (%)	20.0 min	20.6	Air content of mortar (volume %)	12 max	8	
Al2O3(%)	6.0 max	3.9	Fineness (m ² /kg) C 204 (Air permeability)	280 min	409	
Fe2O3(%)	6.0 max	3.9		0.80 max	0.03	
CaO (%)	A	63.4	Compressive strength (psi) C109	A	2403	
MgO (%)	6.0 max	2.1		1 Day	1450 min	3776
SO3 (%)	D	2.5		3 Days	2470 min	4758
Loss on ignition (%)	3.0 max	2.3		7 Days	3050 min	C
Na2O (%)	A	0.05	Time of setting (minutes) C 191 (Vicat)	not less than 45	95	
K2O (%)	A	0.67		Initial		
Insoluble residue (%)	0.75 max	0.25				
CO2 (%)	A	1.5	Final			
CaCO3 in Limestone (%)	70 min	96.0				
Limestone (%)	5.0 max	3.4				
Potential compounds (%), C 150						
C3S	A	55.4				
C2S	A	17.1				
C3A	5.0 max	3.7				
C4AF	A	11.7				
C4AF+2(C3A)	25.0 max	19.2				

OPTIONAL REQUIREMENTS (limits apply only when specified by purchaser)
ASTM C 150 Tables 2 and 4

CHEMICAL			PHYSICAL		
Item	Spec. Limit	Test Result	Item	Spec. Limit	Test Result
C3S + C3A (%), C 150	B	59.2	False set (%), C 451	50 min	86
Equivalent alkalies (%), C 114	0.60	0.49	Heat of hydration (kJ /kg), C 186 7 days	290	C
			Compressive strength (MPa), C 109 28 Days	28.0	C

A = Not applicable
B = Limit not specified by purchaser. Test result provided for information only.
C = Test results for this period not available
D = C 1038 expansion in water does not exceed 0.02% at 14 days

I certify that the above described cement, at the time of shipment, meets the requirements of the ASTM C 150-07 specification.

Steven Santangelo, Chief Chemist