

LEHIGH

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CEMENT TEST REPORT

Cement: ASTM C150-09 Type II-V, Low Alkali, Premium Grind

Date Shipped: July 2010

Report Date: 8/12/2010

Destination: Lot #1189

STANDARD CHEMICAL REQUIREMENTS ASTM C 114	TEST RESULTS	ASTM C 150 SPECIFICATIONS	
		TYPE I	TYPE II
Silicon Dioxide (SiO ₂), %	21.5	----	20.0 Min
Aluminum Oxide (Al ₂ O ₃), %	4.2	----	6.0 Max
Ferric Oxide (Fe ₂ O ₃), %	4.0	----	6.0 Max
Calcium Oxide (CaO), %	65.3	----	----
Magnesium Oxide (MgO), %	1.2	6.0 Max	6.0 Max
Sulfur Trioxide (SO ₃), %	2.2	3.0 Max	3.0 Max
Loss on Ignition (LOI), %	1.0	3.0 Max	3.0 Max
Insoluble Residue, %	0.29	0.75 Max	0.75 Max
Alkalies (Na ₂ O equivalent), %	0.22	0.60 Max	0.60 Max
Tricalcium Silicate (C ₃ S), % ^a	62	----	----
Dicalcium Silicate (C ₂ S), % ^a	15	----	----
Tricalcium Aluminate (C ₃ A), % ^a	4	----	8 Max
Tetracalcium Aluminoferrite (C ₄ AF), % ^a	12	----	----
C3S + 4.75*C3A, %	83	----	100 Max
2 (C ₃ A) + C ₄ AF, %	21	----	----
PHYSICAL REQUIREMENTS			
(ASTM C 204) Blaine Fineness, m ² /gm	283	280 Min	280 - 340*
(ASTM C 430) -325 Mesh, %	81.4	----	----
(ASTM C 114) Limestone, %	0.0	5 Max	5 Max
(ASTM C 191) Time of Setting - Initial (Vicat)	119	45 Min	45 Min
(ASTM C 191) Time of Setting - Final (Vicat)	250	375 Max	375 Max
(ASTM C 451) False Set, %	90	----	----
(ASTM C 185) Air Content, %	8.2	12 Max	12 Max
(ASTM C 151) Autoclave Expansion, %	0.02	0.80 Max	0.80 Max
(ASTM C 187) Normal Consistency, %	23.3	----	----
(ASTM C 109) Compressive Strength, psi (MPa)			
1 Day	1296 (8.9)	----	----
3 Day	2576 (17.7)	1800 (12.4) Min	1560 (10.3) Min
7 Day	3234 (22.3)	2800 (19.3) Min	2500 (17.2) Min
28 Day (previous month)	5060 (34.9)	----	----

This cement meets the requirements of specification: ASTM C150-04a Type I-II, Low Alkali

ASTM C150-02a Type I-II, Low alkali
 Caltrans Section 90-2.01 - Type II Modified
 NDOT Section 701 - Type II Low Alk
 * 340 maximum not ASTM



Albert J. Cornibe

Quality Manager

^a Adjusted per ASTM C-150-09 Section A1.6
 ASTM C 1157 Portland Cement Type HS