



Certificate of Test

ASTM C150 Type V Low-Alkali
AASHTO M85 Type V Low-Alkali

September 12, 2017
Lot 213-243

C150 Chemical Requirements – Table 1

Item	Spec Limit	Result
Al ₂ O ₃	N/A	3.9
Fe ₂ O ₃	N/A	3.2
MgO	6.0 Max	1.2
SO ₃	2.3*	3.2
L.O.I.	3.5 Max	2.4
Insoluble Residue	1.5 Max	0.64

C150 Physical Requirements – Table 3

Item	Spec Limit	Result
Blaine Specific Surface, m ² /kg	260 Min	415
Air Content of Mortar, Vol %	12 Max	7.8
Autoclave Expansion, %	0.80 Max	0.00
Vicat Initial Time of Set, minutes	45 Min	85
Vicat Final Time of Set, minutes	375 Max	185
Compressive Strength, psi:	3 Days	1740 Min 3730
	7 Days	2760 Min 4620
	Lot 182-212 28 Days	3050 Min 5950

*Does not apply. In compliance with Footnote D, Table 1, ASTM Standard Specification C150 and AASHTO Standard Specification M85.

Compound Composition

Item	Spec Limit	Result
C ₃ A, %	5 Max**	5
Equivalent Alkalies, %	0.60 Max	0.59
C ₄ AF + 2•C ₃ A	25 Max**	20
Inorganic Processing Addt's, %	5.0 Max	0
CaCO ₃ in Limestone, %	70 Min	84.7
Limestone Additions	5.0 Max	4.4
C1038 Mortar Bar Expansion, %	0.020% Max	0.009

**Does not apply when C452 sulfate resistance limit in Table 4 is used, see below

ASTM C150 Optional Requirements – Table 4

Item	Spec Limit	Result
C452 Sulfate Resistance, 14 Days, max, % expansion	0.040 max	0.024

This cement has been sampled and tested in accordance with ASTM standard methods and procedures. Cement analysis are reported as oxides, in accordance with ASTM Test Method C114. This cement is manufactured at our Laramie, Wyoming facility. All test results are certified to comply with the type and specification designated. We are not responsible for improper use or workmanship.

Bob Kersey, Chief Chemist



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