



GCC of America
 600 S. Cherry Street, Suite 1000, Glendale, CO 80246
 Sales (303) 739-5900, Customer Service (800) 225-5422

MATERIAL CERTIFICATION REPORT

Plant: Rapid City
Address: 501 N. St Omge Street, Rapid City, SD 57702
Contact: Gail Amicucci
Phone: (605) 721-7042

Cement Type: I/II, Low Alkali, GU
Date Issued: 2-Aug-19
Production Period: 1-Jul-19
To: 31-Jul-19

STANDARD REQUIREMENTS ASTM C150/AASHTO M85/ASTM C1157

CHEMICAL			
Item	ASTM Test Method	ASTM C150 Spec. Limit	Test Result
SiO ₂ (%)	C114	-	20.2
Al ₂ O ₃ (%)	C114	6.0 max	4.6
Fe ₂ O ₃ (%)	C114	6.0 max	3.4
CaO (%)	C114	-	64.7
MgO (%)	C114	6.0 max	1.2
SO ₃ (%)	C114	3.0 max ^A	3.1
Loss On Ignition (%)	C114	3.5 max ^B	1.9
Na ₂ O (%)	C114	-	0.1
K ₂ O (%)	C114	-	0.7
Insoluble Residue (%)	C114	1.5 max	0.3
CO ₂ (%)	C114	-	0.9
Limestone (%)	C150	5.0 max	-
CaCO ₃ in Limestone (%)	C150	70 min	-
Inorganic Processing Addition	C150	5.0 max	-
Potential Phase Composition			
C ₃ S (%)	C150	-	66
C ₂ S (%)	C150	-	8
C ₃ A (%)	C150	8 max	6
C ₄ AF (%)	C150	-	10

PHYSICAL				
Item	ASTM Test Method	ASTM C150 Spec. Limit	ASTM C1157 Spec. Limit	Test Result
Air Content (% vol)	C185	12 max	12 max	9
Blaine Fineness (m ² /kg)	C204	260 min	-	413
Residue 45 µm (No.325) Sieve (%)	C430	-	-	4.0
Autoclave Expansion (%)	C151	0.80 max	0.80 max	0.00
Compressive Strength				Mpa psi
3 days, MPA (psi)	C109	12.0 (1740) min	13.0 (1890) min	25.2 3649
7 days, MPA (psi)	C109	19.0 (2760) min	20.0 (2900) min	34.4 4994
28 days, MPA (psi) ^C	C109	28.0 (4060) min	28.0 (4060) min	45.1 6546
Time of Setting, Initial Vicat (min)	C191	45 min / 375 max	45 min / 420 max	122
Mortar Bar Expansion (%)	C1038	0.020 max	0.020 max	0.0050

ADDITIONAL DATA					
Type	Limestone	Test Method	Base Phase Composition	ASTM Test Method	Test Result
SiO ₂ (%)	-	Internal	C ₃ S (%)	C150	66
Al ₂ O ₃ (%)	-	Internal	C ₂ S (%)	C150	8
Fe ₂ O ₃ (%)	-	Internal	C ₃ A (%)	C150	6
CaO (%)	-	Internal	C ₄ AF (%)	C150	10
SO ₃ (%)	-	Internal			

OPTIONAL REQUIREMENTS ASTM C150/AASHTO M85/ASTM C1157

CHEMICAL			
Item	ASTM Test Method	ASTM C150 Spec. Limit	Test Result
Equivalent Alkalies (%)	C114	0.60 max	0.55

PHYSICAL				
Item	ASTM Test Method	ASTM C150 Spec. Limit	ASTM C1157 Spec. Limit	Test Result
False Set (%)	C451	50 min	50 min	66.39

^A It is permissible to exceed the specification limit provided that ASTM C1038 Mortar Bar Expansion does not exceed 0.020 % at 14 days.

^B Loss on ignition, max: 3.0 % when limestone is not an ingredient; Loss on ignition, max: 3.5 % when limestone is an ingredient

^C Test result of prior month

GCC of America Cement is warranted to conform at the time of shipment with current ASTM C150/AASHTO M85/ASTM C1157. No other warranty is made or implied. Having no control over the use of its cements, GCC of America does not guarantee finished work.