



# Central Plains Cement Company

## Cement Mill Test Report

Month of Issue: May-18

Plant: Sugar Creek Plant  
 Product: Portland Cement Type V  
 Shipped: Apr-18  
 Manufactured: Apr-18

The current version of ASTM C 150 and AASHTO M 85 Standard Requirements

CHEMICAL ANALYSIS			PHYSICAL ANALYSIS		
Item	Spec limit	Test Result	Item	Spec limit	Test Result
Rapid Method, X-Ray (C 114)			Air content of mortar (%) (C 185)	12 max	8
SiO <sub>2</sub> (%)	---	20.5	Blaine Fineness (m <sup>2</sup> /kg) (C 204)	260 min	358
Al <sub>2</sub> O <sub>3</sub> (%)	---	4.7	-325 (%) (C 430)	---	96.0
Fe <sub>2</sub> O <sub>3</sub> (%)	---	3.1	Autoclave expansion (%) (C 151)	0.80 max	-0.01
CaO (%)	---	63.9	Compressive strength (PSI) (C 109)		
MgO (%)	6.0 max	1.1	3 days	1160 min	3770
SO <sub>3</sub> (%)	2.3 max *	3.0	7 days	2180 min	5130
Loss on ignition (%)	3.5 max	2.6	28 days (Reflects previous month's data)	3050 min	6700
Insoluble residue (%)	1.5 max	0.70	Time of setting (minutes)		
CO <sub>2</sub> (%)	---	1.8	Vicat Initial (C 191)	45 - 375	100
Limestone (%)	5.0 max	4.3	Mortar Bar Expansion (%) (C 1038)*	0.020 max	0.005
CaCO <sub>3</sub> in Limestone (%)	70 min	92	Sulfate Resistance (%) (C 452)**	0.040 max	0.036
Adjusted Potential Phase Composition (C 150)			Specific Gravity (C188)	---	3.15
C3S (%)	---	53			
C2S (%)	---	19			
C3A (%)	5 max **	7			
C4AF (%)	---	9			
C3S+4.75*C3A (%)	100 max	87			
C4AF+2*C3A (%)	25 max **	24			

ASTM C 150-16 and AASHTO M 85-16 Optional Chemical Requirements:

NaEq (%) 0.60 max 0.53

\* May exceed 2.3% SO<sub>3</sub> maximum based on C 1038 results of <0.02% expansion at 14 days.

\*\* May exceed limits when Sulfate Resistance (C452) is <.040%.

We certify that the above described cement meets the chemical and physical requirements of Type I, Type II (MH) and Type V for the current version of ASTM C 150 & AASHTO M 85 STANDARD.

Sugar Creek Plant  
 2200 N Courtney Rd.  
 Sugar Creek, MO 64050  
 816-257-3608

Certified By:

Paul Engel - Quality Coordinator

5/8/2018



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### Base Cement Phase Composition

<u>Item</u>	<u>Test Result</u>
C3S (%)	55
C2S (%)	20
C3A (%)	8
C4AF (%)	10

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