



# Suwannee American Cement Branford Plant

## Portland Cement Type III

**Silo: 3**

Production Period : 11/1/2018 To 11/30/2018

### STANDARD REQUIREMENTS

Chemical Data			Physical Data			
Item	Spec. Limit	Results	Item	Spec. Limit	Results	
SiO <sub>2</sub> (%)	<i>A</i>	19.5	Air Content of mortar (volume %)	<i>12 max</i>	7	
Al <sub>2</sub> O <sub>3</sub> (%)	<i>A</i>	5.3	Blaine fineness (m <sup>2</sup> /kg)		607	
Fe <sub>2</sub> O <sub>3</sub> (%)	<i>A</i>	3.6	Autoclave expansion (%)	<i>0.80 max</i>	0.10	
CaO (%)	<i>A</i>	64.1	Compressive strength (MPa/[psi]):			
MgO (%)	<i>6.0 max</i>	0.6		1 day	<i>12.0[1740] min</i>	24.4 [3530]
SO <sub>3</sub> (%)*	<i>3.5 max</i>	3.3		3 days	<i>24.0[3480] min</i>	39.8 [5770]
Loss of ignition (%)	<i>3.5 max</i>	3.1		7 days		49.7 [7210]
Na <sub>2</sub> O (%)	<i>A</i>	0.12		28 days ( <i>previous month</i> )		62.7 [9090]
K <sub>2</sub> O (%)	<i>A</i>	0.17	Time of setting (minutes)			
Insoluble residue (%)	<i>1.5 max</i>	0.24	(Vicat) Initial	<i>45 min</i>	77	
CO <sub>2</sub> (%)	<i>A</i>	1.8	(Vicat) Final	<i>375 max</i>	150	
Limestone (%)	<i>5.0 max</i>	4.6	Mortar Bar Expansion (ASTM C1038) (%)*	<i>0.020 max</i>	<i>A</i>	
CaCO <sub>3</sub> in limestone (%)	<i>70 min</i>	89				
Inorganic process addition (%)	<i>5.0 max</i>	--				
Potential phase composition			Base Cement Phase Composition			
C <sub>3</sub> S (%)	<i>A</i>	55	C <sub>3</sub> S (%)		58	
C <sub>2</sub> S (%)	<i>A</i>	13	C <sub>2</sub> S (%)		14	
C <sub>3</sub> A (%)	<i>8 max</i>	8	C <sub>3</sub> A (%)		8	
C <sub>4</sub> AF (%)	<i>A</i>	11	C <sub>4</sub> AF (%)		11	

### OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	<i>0.60 max</i>	0.23	False Set (%)	<i>50 min</i>	79
Chloride (%)	<i>B</i>	0.01	Density (ASTM C188) (g/cm <sup>3</sup> )	<i>B</i>	3.10

### Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	4.6	--
SiO <sub>2</sub> (%)	5.7	--
Al <sub>2</sub> O <sub>3</sub> (%)	0.5	--
Fe <sub>2</sub> O <sub>3</sub> (%)	0.2	--
CaO (%)	51.2	--
SO <sub>3</sub> (%)	0.2	--

*This cement meets ASTM C150-18 and AASHTO M 85-18 Specification for Type III Moderate Sulfate Resistance Portland Cement*

*This cement also meets all applicable FDOT (Facility ID: CMT 29) specifications for Type III cement*

\*It is permissible to exceed the max value for SO<sub>3</sub> content, provided it is demonstrated by C1038 that the cement will not develop expansion exceeding 0.020% in 14 Days

A Not applicable.

B Test result represents most recent value and is provided for information only.

December 16, 2018

Brandford Cement Plant

Suwannee American Cement

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