



# Suwannee American Cement Branford Plant

**Portland Cement Type III**

**Silo: 3**

Production Period : 6/1/2019 To 6/30/2019

## STANDARD REQUIREMENTS

Chemical Data			Physical Data			
Item	Spec. Limit	Results	Item	Spec. Limit	Results	
SiO <sub>2</sub> (%)	<i>A</i>	19.8	Air Content of mortar (volume %)	<i>12 max</i>	6	
Al <sub>2</sub> O <sub>3</sub> (%)	<i>A</i>	5.2	Blaine fineness (m <sup>2</sup> /kg)		584	
Fe <sub>2</sub> O <sub>3</sub> (%)	<i>A</i>	3.3	Autoclave expansion (%)	<i>0.80 max</i>	0.01	
CaO (%)	<i>A</i>	64.3	Compressive strength (MPa/psi):			
MgO (%)	<i>6.0 max</i>	0.6		1 day	<i>12.0[1740] min</i>	24.3 [3520]
SO <sub>3</sub> (%)*	<i>3.5 max</i>	3.2		3 days	<i>24.0[3480] min</i>	37.6 [5440]
Loss of ignition (%)	<i>3.5 max</i>	3.2		7 days		45.8 [6650]
Na <sub>2</sub> O (%)	<i>A</i>	0.12		28 days ( <i>previous month</i> )		57.6 [8350]
K <sub>2</sub> O (%)	<i>A</i>	0.19	Time of setting (minutes)			
Insoluble residue (%)	<i>1.5 max</i>	0.41	(Vicat) Initial	<i>45 min</i>	65	
CO <sub>2</sub> (%)	<i>A</i>	1.9	(Vicat) Final	<i>375 max</i>	130	
Limestone (%)	<i>5.0 max</i>	4.9	Mortar Bar Expansion (ASTM C1038) (%)*	<i>0.020 max</i>	<i>A</i>	
CaCO <sub>3</sub> in limestone (%)	<i>70 min</i>	87				
Inorganic process addition (%)	<i>5.0 max</i>	--	Base Cement Phase Composition			
Potential phase composition			C <sub>3</sub> S (%)		58	
C <sub>3</sub> S (%)	<i>A</i>	55	C <sub>2</sub> S (%)		15	
C <sub>2</sub> S (%)	<i>A</i>	14	C <sub>3</sub> A (%)		9	
C <sub>3</sub> A (%)	<i>8 max</i>	8	C <sub>4</sub> AF (%)		11	
C <sub>4</sub> AF (%)	<i>A</i>	10				

## OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	<i>0.60 max</i>	0.25	False Set (%)	<i>50 min</i>	89
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	4.9	--
SiO <sub>2</sub> (%)	5.8	--
Al <sub>2</sub> O <sub>3</sub> (%)	0.6	--
Fe <sub>2</sub> O <sub>3</sub> (%)	0.1	--
CaO (%)	49.4	--
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.

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Brandford Cement Plant

Suwannee American Cement

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