



# Suwannee American Cement Branford Plant

**Portland Cement Type I-II (MH)**

**Silos: 2, 4, 5**

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> (%)	A	19.9	Air Content of mortar (volume %)	12 max	6	
Al <sub>2</sub> O <sub>3</sub> (%)	6.0 max	5.2	Blaine fineness (m <sup>2</sup> /kg)**	260 min / 430 max	407	
Fe <sub>2</sub> O <sub>3</sub> (%)	6.0 max	3.4	Autoclave expansion (%)	0.80 max	0.09	
CaO (%)	A	64.1	Compressive strength (MPa/[psi]):			
MgO (%)	6.0 max	0.6		1 day		15.8 [2290]
SO <sub>3</sub> (%)*	3.0 max	3.1		3 days	12.0[1740] min	27.7 [4020]
Loss of ignition (%)	3.5 max	2.8		7 days	19.0[2760] min	37.1 [5380]
Na <sub>2</sub> O (%)	A	0.10	28 days (previous month)	28.0[4060] min	51.1 [7420]	
K <sub>2</sub> O (%)	A	0.18	Time of setting (minutes)			
Insoluble residue (%)	1.5 max	0.25	(Vicat) Initial	45 min	84	
CO <sub>2</sub> (%)	A	1.5	(Vicat) Final	375 max	215	
Limestone (%)	5.0 max	3.9	Heat of hydration (ASTM C1702 3d)	B	273	
CaCO <sub>3</sub> in limestone (%)	70 min	89	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.009	
Inorganic process addition (%)	5.0 max	--				
Sum of C <sub>3</sub> S + 4.75C <sub>3</sub> A	100 max	93				
Potential phase composition			Base Cement Phase Composition			
C <sub>3</sub> S (%)	A	55	C <sub>3</sub> S (%)		57	
C <sub>2</sub> S (%)	A	15	C <sub>2</sub> S (%)		15	
C <sub>3</sub> A (%)	8 max	8	C <sub>3</sub> A (%)		8	
C <sub>4</sub> AF (%)	A	10	C <sub>4</sub> AF (%)		11	

## OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	0.60 max	0.22	False Set (%)	50 min	73
Chloride (%)	B	0.01	Density (ASTM C188) (g/cm <sup>3</sup> )	B	3.15

### Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	3.9	--
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 I-II Portland Cement*

*This cement also meets all applicable FDOT (Facility ID: CMT 29), GADOT (Source Code: 53), ALDOT (CAMMS ID: 10146), SCDOT,*

*and NCDOT (Plant ID: CM69) specifications for Type I-II cement*

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

\*\* Maximum fineness limits do not apply if the sum of C<sub>3</sub>S + 4.75C<sub>3</sub>A is less than or equal to 90.

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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