



# Suwannee American Cement Branford Plant

**Portland Cement Type IL (10)**

**Silos: 4**

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> (%)	A	19.3	Air Content of mortar (volume %)	12 max	5
Al <sub>2</sub> O <sub>3</sub> (%)	A	5.0	Blaine fineness (m <sup>2</sup> /kg)**	A	424
Fe <sub>2</sub> O <sub>3</sub> (%)	A	3.3	Autoclave expansion (%)	-0.20 min/0.80 max	0.07
CaO (%)	A	64.5	Fineness, retained in #325	A	3.0
MgO (%)	A	0.6	Compressive strength (MPa/[psi]):		
SO <sub>3</sub> (%)*	3.0 max	3.1	1 day		13.6 [1970]
Loss of ignition (%)	10.0 max	4.8	3 days	13.0[1890] min	24.1 [3500]
Na <sub>2</sub> O (%)	A	0.14	7 days	20.0[2900] min	32 [4650]
K <sub>2</sub> O (%)	A	0.24	28 days (previous month)	28.0[4060] min	46 [6670]
Insoluble residue (%)	A	0.64	Time of setting (minutes)		
CO <sub>2</sub> (%)	A	3.6	(Vicat) Initial	45 min	81
Limestone (%)	15.0 max	9.4	(Vicat) Final	375 max	195
CaCO <sub>3</sub> in limestone (%)	70 min	87	Sulfate Resistance (ASTM C1012 180d) (%)	0.10 max	0.05
Inorganic process addition (%)	5.0 max	--	Heat of hydration (ASTM C1702 3d)	B	263
Sum of C <sub>3</sub> S + 4.75C <sub>3</sub> A	A	90	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.010
Potential phase composition			Base Cement Phase Composition		
C <sub>3</sub> S (%)	A	54	C <sub>3</sub> S (%)		59
C <sub>2</sub> S (%)	A	13	C <sub>2</sub> S (%)		15
C <sub>3</sub> A (%)	A	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	0.30	False Set (%)	50 min	89
Chloride (%)	B	0.01	Density (ASTM C188) (g/cm <sup>3</sup> )	B	3.15

### Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	9.4	--
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 C595 and AASHTO M240 Specification for Type IL (MS) Portland Cement*

*This cement also meets all applicable FDOT (Facility ID: CMT 29), SCDOT, and NCDOT (Plant ID: CM69) specifications for Type IL 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

A Not applicable.

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

C Test result is not yet available

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