



# Suwannee American Cement Branford Plant

Portland Cement Type I-II (MH)

Silos: 3, 5

Production Period : 7/1/2020 To 7/31/2020

## STANDARD REQUIREMENTS

Chemical Data			Physical Data		
Item	Spec. Limit	Results	Item	Spec. Limit	Results
SiO <sub>2</sub> (%)	A	20.0	Air Content of mortar (volume %)	12 max	6
Al <sub>2</sub> O <sub>3</sub> (%)	6.0 max	5.0	Blaine fineness (m <sup>2</sup> /kg)**	260 min / 430 max	413
Fe <sub>2</sub> O <sub>3</sub> (%)	6.0 max	3.3	Autoclave expansion (%)	0.80 max	0.01
CaO (%)	A	64.5			
MgO (%)	6.0 max	0.6	Compressive strength (MPa/[psi]):		
SO <sub>3</sub> (%)*	3.0 max	3.2	1 day		16.5 [2400]
Loss of ignition (%)	3.5 max	2.8	3 days	12.0[1740] min	28.2 [4080]
Na <sub>2</sub> O (%)	A	0.11	7 days	19.0[2760] min	37.1 [5380]
K <sub>2</sub> O (%)	A	0.16	28 days (previous month)	28.0[4060] min	49.7 [7210]
Insoluble residue (%)	1.5 max	0.31	Time of setting (minutes)		
CO <sub>2</sub> (%)	A	1.8	(Vicat) Initial	45 min	85
Limestone (%)	5.0 max	4.7	(Vicat) Final	375 max	240
CaCO <sub>3</sub> in limestone (%)	70 min	87			
Inorganic process addition (%)	5.0 max	--	Heat of hydration (ASTM C1702 3d) (J/g)	B	288
Sum of C <sub>3</sub> S + 4.75C <sub>3</sub> A	100 max	92	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.006
Potential phase composition			Base Cement Phase Composition		
C <sub>3</sub> S (%)	A	56	C <sub>3</sub> S (%)		59
C <sub>2</sub> S (%)	A	14	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	85
Chloride (%)	B	0.01	Density (ASTM C188) (g/cm <sup>3</sup> )	B	3.15

### Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	4.7	--
SiO <sub>2</sub> (%)	6.7	--
Al <sub>2</sub> O <sub>3</sub> (%)	0.8	--
Fe <sub>2</sub> O <sub>3</sub> (%)	0.2	--
CaO (%)	51.0	--
SO <sub>3</sub> (%)	0.4	--

*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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