



Suwannee American Cement Branford Plant

Portland Cement Type III

Silo: 3

Production Period : 4/1/2019 To 4/30/2019

STANDARD REQUIREMENTS

Chemical Data			Physical Data		
Item	Spec. Limit	Results	Item	Spec. Limit	Results
SiO ₂ (%)	<i>A</i>	20.0	Air Content of mortar (volume %)	<i>12 max</i>	7
Al ₂ O ₃ (%)	<i>A</i>	5.2	Blaine fineness (m ² /kg)		573
Fe ₂ O ₃ (%)	<i>A</i>	3.3	Autoclave expansion (%)	<i>0.80 max</i>	0.01
CaO (%)	<i>A</i>	64.4			
MgO (%)	<i>6.0 max</i>	0.6	Compressive strength (MPa/psi):		
SO ₃ (%)*	<i>3.5 max</i>	3.2	1 day	<i>12.0[1740] min</i>	23.1 [3350]
Loss of ignition (%)	<i>3.5 max</i>	3.1	3 days	<i>24.0[3480] min</i>	36.4 [5280]
Na ₂ O (%)	<i>A</i>	0.12	7 days		45.1 [6530]
K ₂ O (%)	<i>A</i>	0.22	28 days (<i>previous month</i>)		59 [8550]
Insoluble residue (%)	<i>1.5 max</i>	0.30	Time of setting (minutes)		
CO ₂ (%)	<i>A</i>	1.9	(Vicat) Initial	<i>45 min</i>	63
Limestone (%)	<i>5.0 max</i>	4.7	(Vicat) Final	<i>375 max</i>	225
CaCO ₃ in limestone (%)	<i>70 min</i>	90			
Inorganic process addition (%)	<i>5.0 max</i>	--			
			Mortar Bar Expansion (ASTM C1038) (%)*	<i>0.020 max</i>	<i>A</i>
Potential phase composition			Base Cement Phase Composition		
C ₃ S (%)	<i>A</i>	53	C ₃ S (%)		56
C ₂ S (%)	<i>A</i>	17	C ₂ S (%)		17
C ₃ A (%)	<i>8 max</i>	8	C ₃ A (%)		8
C ₄ AF (%)	<i>A</i>	10	C ₄ AF (%)		11

OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	<i>0.60 max</i>	0.26	False Set (%)	<i>50 min</i>	75
Chloride (%)	<i>B</i>	0.01	Density (ASTM C188) (g/cm ³)	<i>B</i>	3.10

Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	4.7	--
SiO ₂ (%)	5.0	--
Al ₂ O ₃ (%)	0.5	--
Fe ₂ O ₃ (%)	0.2	--
CaO (%)	51.9	--
SO ₃ (%)	0.1	--

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 SO₃ 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.

May 16, 2019

Brandford Cement Plant

Suwannee American Cement

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