



Suwannee American Cement

Port Manatee Terminal (Kocaeli, Turkey)

Portland Cement Type I-II (MH)

Sample Date : 3/4/2019

STANDARD REQUIREMENTS

Chemical Data			Physical Data			
Item	Spec. Limit	Results	Item	Spec. Limit	Results	
SiO ₂ (%)	A	20.3	Air Content of mortar (volume %)	12 max	9	
Al ₂ O ₃ (%)	6.0 max	4.7	Blaine fineness (m ² /kg)**	260 min / 430 max	373	
Fe ₂ O ₃ (%)	6.0 max	3.7	Autoclave expansion (%)	0.80 max	0.03	
CaO (%)	A	65.2	Compressive strength (MPa/[psi]):			
MgO (%)	6.0 max	1.7		1 day		18.0[2680]
SO ₃ (%)*	3.0 max	3.2		3 days	12.0[1740] min	27.0[3870]
Loss of ignition (%)	3.5 max	1.0		7 days	19.0[2760] min	32.0[4580]
Na ₂ O (%)	A	0.09	28 days (previous month)	28.0[4060] min	C	
K ₂ O (%)	A	0.55	Time of setting (minutes)			
Insoluble residue (%)	1.5 max	0.60	(Vicat) Initial	45 min	72	
CO ₂ (%)	A	1.2	(Vicat) Final	375 max	195	
Limestone (%)	5.0 max	2.8	Heat of hydration (ASTM C1702 3d)	B	291.1J/g	
CaCO ₃ in limestone (%)	70 min	--	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.002	
Inorganic process addition (%)	5.0 max	--				
Sum of C ₃ S + 4.75C ₃ A	100 max	95				
Potential phase composition			Base Cement Phase Composition			
C ₃ S (%)	A	65	C ₃ S (%)		64	
C ₂ S (%)	A	9	C ₂ S (%)		10	
C ₃ A (%)	8 max	6	C ₃ A (%)		6	
C ₄ AF (%)	A	11	C ₄ AF (%)		12	

OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	0.60 max	0.46	False Set (%)	50 min	80
Chloride (%)	B	0.01	Density (ASTM C188) (g/cm ³)	B	3.14

Additional Data (Provided by Manufacturer)

Type	Limestone	Inorganic Processing Addition
Amount	2.8	--
SiO ₂ (%)	1.0	--
Al ₂ O ₃ (%)	0.3	--
Fe ₂ O ₃ (%)	0.1	--
CaO (%)	54.3	--
SO ₃ (%)	0.0	--

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: To Be Determined) Specifications for Type I-II cement

*It is permissible to exceed the max value for SO₃ 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 C₃S + 4.75C₃A is less than or equal to 90.

A Not applicable.

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

C Test result are not yet available.

April 1, 2019

Terminal

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Testing Laboratory

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