



Ash Grove Sumterville Plant

Portland Cement Type IL (13)

Silos: 1, 2, 3, 5

March 2024 Mill Certificate

Production Period : 2/1/2024 To 2/29/2024

STANDARD REQUIREMENTS

Chemical Data			Physical Data		
Item	Spec. Limit	Results	Item	Spec. Limit	Results
SiO ₂ (%)	A	19.5	Air Content of mortar (volume %)	12 max	4
Al ₂ O ₃ (%)	A	5.1	Blaine fineness (m ² /kg)	A	486
Fe ₂ O ₃ (%)	A	3.4	Fineness, retained in #325	A	1.3
CaO (%)	A	66.9	Compressive strength (MPa/[psi]):		
MgO (%)	A	1.0	1 day		15.6 [2265]
SO ₃ (%)*	3.0 max	3.1	3 days	13.0[1890] min	28.6 [4153]
Loss of ignition (%)	10.0 max	6.6	7 days	20.0[2900] min	37.5 [5435]
Na ₂ O (%)	A	0.05	28 days (previous month)	28.0[4060] min	46.8 [6783]
K ₂ O (%)	A	0.37	Time of setting (minutes)		
			(Vicat) Initial	45 min	95
CO ₂ (%)	A	4.9	(Vicat) Final	375 max	216
Limestone (%)	15.0 max	12.1	Sulfate Resistance (ASTM C1012 180d) (%)	0.10 max	0.05
CaCO ₃ in limestone (%)	70 min	94	Heat of hydration (ASTM C1702 3d, J/g [cal/g])	B	261 62
Inorganic process addition (%)	5%	2	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.009

OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	0.60 max	0.29	Density (ASTM C188) (g/cm ³)	B	3.05
Chloride (%)	B	0.01			

Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	12.1	2.5
SiO ₂ (%)	3.2	9.7
Al ₂ O ₃ (%)	0.4	1.4
Fe ₂ O ₃ (%)	0.2	4.6
CaO (%)	52.5	47.1
SO ₃ (%)	0.1	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 40) specifications for Type IL 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.

A Not applicable.

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

C Test result is not yet available.

March 11, 2024

Sumterville Cement Plant

Ash Grove

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Ramon Olivero
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