



Ash Grove

Sumterville Plant

Portland Cement Type IL (13)

Silos: 1, 2, 3, 5

August Mill Certificate

Production Period : 7/1/2023 To 7/31/2023

STANDARD REQUIREMENTS

Chemical Data			Physical Data		
Item	Spec. Limit	Results	Item	Spec. Limit	Results
SiO ₂ (%)	A	18.2	Air Content of mortar (volume %)	12 max	5
Al ₂ O ₃ (%)	A	4.6	Blaine fineness (m ² /kg)**	A	508
Fe ₂ O ₃ (%)	A	3.2	Fineness, retained in #325	A	1.0
CaO (%)	A	62.6	Compressive strength (MPa/[psi]):		
MgO (%)	A	0.9	1 day		16.9 [2450]
SO ₃ (%)*	3.0 max	2.9	3 days	13.0[1890] min	33.6 [4880]
Loss of ignition (%)	10.0 max	6.7	7 days	20.0[2900] min	37.7 [5470]
Na ₂ O (%)	A	0.08	28 days (previous month)	28.0[4060] min	47.2 [6840]
K ₂ O (%)	A	0.38	Time of setting (minutes)		
			(Vicat) Initial	45 min	111
CO ₂ (%)	A	5.2	(Vicat) Final	375 max	255
Limestone (%)	15.0 max	13.0	Sulfate Resistance (ASTM C1012 180d) (%)	0.10 max	0.05
CaCO ₃ in limestone (%)	70 min	91	Heat of hydration (ASTM C1702 3d, J/g [cal/g])	B	286 67
Inorganic process addition (%)	5.0 max	0.6	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	-

OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	0.60 max	0.33	Density (ASTM C188) (g/cm ³)	B	3.05
Chloride (%)	B	0.01			

Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	13.0	0.6
SiO ₂ (%)	3.1	8.9
Al ₂ O ₃ (%)	0.4	1.5
Fe ₂ O ₃ (%)	0.2	4.5
CaO (%)	53.0	46.2
SO ₃ (%)	0.0	0.1

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.

August 10, 2023

Sumterville Cement Plant

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Ramon Olivero
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