



Ash Grove Branford Plant

Portland Cement Type IL (13)

Silos: 2, 3, 4, 5

March 2024 Mill Certificate

Production Period: 2/01/2024 To 2/29/2024

STANDARD REQUIREMENTS

Chemical Data			Physical Data		
Item	Spec. Limit	Results	Item	Spec. Limit	Results
SiO ₂ (%)	A	18.6	Air Content of mortar (volume %)	12 max	4
Al ₂ O ₃ (%)	A	4.5	Blaine fineness (m ² /kg)	A	472
Fe ₂ O ₃ (%)	A	3.0	Fineness, retained in #325	A	1.4
CaO (%)	A	63.4	Compressive strength (MPa/[psi]):		
MgO (%)	A	0.7	1 day		15.7 [2270]
SO ₃ (%)*	3.0 max	2.9	3 days	13.0[1890] min	30.1 [4360]
Loss of ignition (%)	10.0 max	6.4	7 days	20.0[2900] min	38.7 [5620]
Na ₂ O (%)	A	0.15	28 days (previous month)	28.0[4060] min	49.7 [7200]
K ₂ O (%)	A	0.20	Time of setting (minutes)		
			(Vicat) Initial	45 min	107
CO ₂ (%)	A	5.1	(Vicat) Final	375 max	190
Limestone (%)	15.0 max	12.8	Sulfate Resistance (ASTM C1012 180d) (%)	0.10 max	0.05
CaCO ₃ in limestone (%)	70 min	89	Heat of hydration (ASTM C1702 3d)	B	269
Inorganic process addition (%)	5.0 max	--	Mortar Bar Expansion (ASTM C1038) (%)*	0.020 max	0.001

OPTIONAL REQUIREMENTS

Item	Spec. Limit	Results	Item	Spec. Limit	Results
Equiv. Alkalies (%)	0.60 max	0.28	Density (ASTM C188) (g/cm ³)	B	3.11
Chloride (%)	B	0.09			

Additional Data

Type	Limestone	Inorganic Processing Addition
Amount	12.8	--
SiO ₂ (%)	3.3	--
Al ₂ O ₃ (%)	0.4	--
Fe ₂ O ₃ (%)	0.2	--
CaO (%)	53.3	--
SO ₃ (%)	0.3	--

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 29), GDOT (Source Code: 53), ALDOT (CAMMS ID: 10146), SCDOT,

and NCDOT (Plant ID: CM69) 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 20, 2024

Branford Cement Plant

Ash Grove

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