Midlothian, Texas
Midlothian Cement

Cement: Type IL (12) HS Date: March 17, 2023

Production Period: February-2023
STANDARD REQUIREMENTS
ASTM C595-21

Chemical Requirements:	Spec. Limit	Test Result
SiO_2, (%)	[A]	17.5
Al_2O_3, (%)	[A]	4.5
Fe_2O_3, (%)	[A]	3.3
CaO, (%)	[A]	64.6
MgO, (%)	[A]	1.0
SO_3, (%)[B]	3.0 max	3.2
Total Alkalies (Na2O equiv.), (%)	[A]	0.50
Loss on Ignition, (%)	10.0 max	7.0
CO_2, (%)	[A]	5.1
Limestone, (%)	5.0 - 15.0	11.8
$CaCO_3$ in Limestone, (%)	70 min	95
Potential phase composition, (%):		
C_3S	[A]	61
C_2S	[A]	4
C_3A	[A]	6
C_4AF	[A]	10

Physical Requirements:	Spec. Limit	Test Result
Air content, Volume, (%)	12 max	9
Average Fineness (Blaine), (m^2/kg)	[A]	387
325(%) Retained	[A]	5.6
Density (g/cm^3)	[A]	3.11
Autoclave Expansion, (%)	-0.20 - 0.80	0.01
Mortar Bar Expansion(C1038)[C]	0.020 Max	-0.009
Time of setting:		
Vicat Initial set, minutes	45 min	114
	420 max	
Compressive strengths, (Mpa)		
1 day	[A]	13.7
3 days	13.0 min	24.2
7 days	20.0 min	31.9
28 days (January 2023)	25.0 min	42.6
Compressive strengths, (psi)		
1 day	[A]	1981
3 days	1890 min	3505
7 days	2900 min	4632
28 days (January 2023)	3620 min	6176

[A] Not applicable
[B] It is permissible to exceed the SO3 limit provided that C1038 expansion does not exceed 0.020%
[C] Test result represents the most recent result available

Signature: Tom Cundiff
Title: Area Quality Control Manager

We certify that the above described cement, at the time of shipment meets the chemical and physical requirements of ASTM C - 595 specifications.