

## Mill Test Certificate Report

Type:	Portland Cement Type I/II	Date: September 12, 2023
Source:	Hereke	
Vessel:	Pauline	TEC ID: 23-1376
Client ID:	Turkish Cement Corpus Christi	

### Certification

SGS TEC Services is an AASHTO R18, ANS/ISO/IEC 17025:2017, and Army Corps of Engineers accredited laboratory. This certifies that the described cement, at the time of shipment, meets chemical and physical requirements of the current applicable specification for ASTM C 150 & AASHTO M-85 for type I and Type I/II (MH). These results pertain to only the sample tested.

### General Information

Supplier: South Texas Cement Address: S.T.C. TERMINAL 2202 E Navigation Blvd. Corpus Christi, TX 78402 Telephone: 361-885-0023	Source Location: Hereke Plant Tested by SGS TEC Services  Contact: Dean Roosa (770) 995-8000
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### Tests Data on ASTM "Standard" Requirements

Chemical**				Physical			
Item	ASTM	Limit	Result	Item	ASTM	Limit	Result
SiO <sub>2</sub> (%)	C 114	-	19.6	Flow (%)	C 1437	-	128
Al <sub>2</sub> O <sub>3</sub> (%)	C 114	6.0 max	5.0	Blaine Fineness (m <sup>2</sup> /kg)	C 204	260-430	374
Fe <sub>2</sub> O <sub>3</sub> (%)	C 114	6.0 max	3.63	Normal Consistency (%)	C 187	-	26.6
CaO (%)	C 114	-	63.6	Autoclave Expansion (%)	C 151	0.80 max	-0.02
MgO (%)	C 114	6.0 max	1.56	Vicat Setting Time:	C 191		
SO <sub>3</sub> (%)**	C 114	3.0 max	2.57	Initial Vicat (minutes)	C 191	45-375	115
Na Eqv (%)	C 114	-	0.55	Final Vicat (minutes)	C 191	-	235
Loss on Ignition (%)****	C 114	3.0 max	2.7	Air Content (%)	C 185	12 max	9
Insoluble Residue (%)	C 114	1.5 max	0.41	Density of Hydraulic Cement (g/cm <sup>3</sup> )	C 188	-	3.14
Limestone Addition (%)	C 114	5 max	NA				
Inorganic Processing Addition (%)	C 114	5.0 max	NA				
C <sub>3</sub> S + 4.75 * C <sub>3</sub> A (%)***	C 114	100 max	98	Compressive Strength MPa:	C 109/C 109M		
				1 Day	C 109/C 109M	-	17.1
				3 Day	C 109/C 109M	12.0 min	24.8
				7 Day	C 109/C 109M	19.0 min	35.3
Potential Compounds:	C 114			28 Day	C 109/C 109M	28.0 min	42.6
C <sub>3</sub> S (%)	C 114	-	64				
C <sub>2</sub> S (%)	C 114	-	8	Compressive Strength PSI:	C 109/C 109M		
C <sub>3</sub> A (%)	C 114	8 max	7	1 Day	C 109/C 109M	-	2480
C <sub>4</sub> AF (%)	C 114	-	11	3 Day	C 109/C 109M	1740 min	3600
				7 Day	C 109/C 109M	2760 min	5120
				28 Day	C 109/C 109M	4060 min	6180

### Notes

\*Indicates items not meeting ASTM C150-22 and AASHTO M85-21.  
 \*\* No adjustment has been made for possible use of limestone or inorganic processing additions.  
 \*\*\* Does not apply when the cement complies with the heat of hydration limit  
 \*\*\*\* If Limestone is added it is 3.5%  
 \*\*\*\*\* The minimum (0.33), maximum (0.61) and average (0.53) for equivalent alkalis obtained from quality control tests.



Dean T. Roosa  
Project Manager



Shawn P. McCormick  
Laboratory Principal