



F20251222-Silo #4-CIP

CERTIFICATE NUMBER

December 22, 2025

DATE

Laboratory Test Certification

Class F Coal Ash*

Source: Qinhuangdao, China

Chemical Analysis: (QUAL-XRF) - %

ASTM C 618-25a* Limits Class F

Silicon Oxide (SiO ₂)	40.60	
Aluminum Oxide (Al ₂ O ₃)	40.30	
Iron Oxide (Fe ₂ O ₃)	3.58	
Sum (SiO ₂ +Al ₂ O ₃ +Fe ₂ O ₃)	84.48	50 Min.
Calcium Oxide (CaO)	9.63	18 Max
Magnesium Oxide (MgO)	0.77	
Sulfur Trioxide (SO ₃)	1.21	5.0 Max.
Sodium Oxide (Na ₂ O)	0.41	
Potassium Oxide (K ₂ O)	1.06	
NaEq (Na ₂ O + 0.658 K ₂ O)	1.14	
Moisture Content	0.22	3.0 Max.
Loss on Ignition (LOI)	1.55	6.0 Max.

Physical Analysis:

Specific Gravity	2.22	CTL#3923002
Variation, % from Average	0.45	5% Max
Fineness - Retained on No. 325, %	7.8	34% Max
Variation, Points from Average	0.87	5 Max
Water Requirement, % of Control	103.3	105% Max
Strength Activity Index :		
% of Control at 7 Days	94 %	75% Min.
% of Control at 28 Days	95 %	75% Min.

We certify that the above described composite sample of Coal Ash*, complies with the standard chemical and physical requirements of ASTM C618-25a*, Class F.

Cement Division

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