



F20230407-Silo #6-CIP

CERTIFICATE NUMBER

April 07, 2023

DATE

Laboratory Test Certification

Class F Fly Ash

Source: Qinhuangdao, China

Chemical Analysis: (QUAL-XRF) - %

ASTM C 618-22 Limits Class F

Silicon Oxide (SiO ₂)	50.26	
Aluminum Oxide (Al ₂ O ₃)	35.22	
Iron Oxide (Fe ₂ O ₃)	3.94	
Sum (SiO ₂ +Al ₂ O ₃ +Fe ₂ O ₃)	89.42	50 Min.
Calcium Oxide (CaO)	4.20	18 Max
Magnesium Oxide (MgO)	1.07	
Sulfur Trioxide (SO ₃)	0.82	5.0 Max.
Sodium Oxide (Na ₂ O)	0.68	
Potassium Oxide (K ₂ O)	1.52	
NaEq (Na ₂ O + 0.658 K ₂ O)	1.67	
Moisture Content	0.04	3.0 Max.
Loss on Ignition (LOI)	2.44	6.0 Max.

Physical Analysis:

Specific Gravity	2.22	CTL#3923002
Variation, % from Average	0.45	5% Max
Fineness - Retained on No. 325, %	10.7	34% Max
Variation, Points from Average	0.8	5 Max
Water Requirement, % of Control	100.8	105% Max
Strength Activity Index :		
% of Control at 7 Days	78 %	75% Min.
% of Control at 28 Days	91 %	75% Min.

We certify that the above described composite sample of fly ash, complies with the standard chemical and physical requirements of ASTM C618-22, Class F.

Cement Division

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