HAWAIIAN CEMENT

F20230403-Silo #5-CIP
CERTIFICATE NUMBER

April 3, 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)	46.45	
Aluminum Oxide (Al_2O_3)	42.35	
Iron Oxide (Fe_2O_3)	2.77	
Sum (SiO_2+Al_2O_3+Fe_2O_3)	91.57	50 Min.
Calcium Oxide (CaO)	3.40	18 Max
Magnesium Oxide (MgO)	0.61	
Sulfur Trioxide (SO_3)	0.73	5.0 Max.
Sodium Oxide (Na_2O)	0.35	
Potassium Oxide (K_2O)	0.90	
NaEq (Na_2O + 0.658 K_2O)	0.97	
Moisture Content	0.04	3.0 Max.
Loss on Ignition (LOI)	2.51	6.0 Max.
Physical Analysis:		
Specific Gravity	2.22	CTL#3923002
Variation, % from Average	0.45	5% Max
Fineness - Retained on No. 325, %	9.1	34% Max
Variation, Points from Average	1.1	5 Max
Water Requirement, % of Control	101.7	105% Max
Strength Activity Index :		
% of Control at 7 Days	79 %	75% Min.
% of Control at 28 Days	93 %	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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