



Cement

FLY ASH TEST REPORT

Analysis by: Lafarge Seattle Concrete Lab
Sample from : Centralia Power Plant
Average Analysis: August 2023
Test Report Number 9-23 Class F

Chemical Analysis

	Results	Limits
Silicon Dioxide (SiO ₂)	47.0 %	
Aluminum Oxide (Al ₂ O ₃)	17.4 %	
Iron Oxide (Fe ₂ O ₃)	5.6 %	
Total (SiO ₂) + (Al ₂ O ₃) + (Fe ₂ O ₃)	70 %	50% Min - ASTM
Sulphur Trioxide (SO ₃)	1.1 %	5% Max - ASTM
Calcium Oxide (CaO)	14.8 %	18% Max - ASTM
Magnesium Oxide	3.9 %	
Moisture Content	0.24 %	3% Max - ASTM
Loss on Ignition	0.52 %	5% Max
Available Alkali as Equiv. Na ₂ O (<i>previous month's result</i>)	0.66 %	1.5% Max

Physical Analysis

Fineness Retained on 45 um (No. 325 Sieve)	13.5 %	34% Max - ASTM
Strength Activity Index with Portland Cement		
% of Control at 7 Days	96 %	75% Min - ASTM
% of Control at 28 Days (<i>previous month's result</i>)	98 %	75% Min - ASTM
Water Requirement, Percent of Control	94 %	105% Max- ASTM
Autoclave Expansion	0.08 %	0.8% Max - ASTM
Density	2.64 Mg/m ³	

Uniformity Requirements

Density, Variation from Average	0.00 %	5% Max - ASTM
Fineness 45um Sieve, Variation from Average	0.40 %	5% Max - ASTM

We hereby certify that the composite fly ash sample above meets the chemical and physical requirements of ASTM C618 and AASHTO M295 for class F fly ash.

Certified : _____

Rob Shogren
Technical Director

WESTERN REGION

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