

Oak Grove Coal Ash

Blended Ash for Concrete



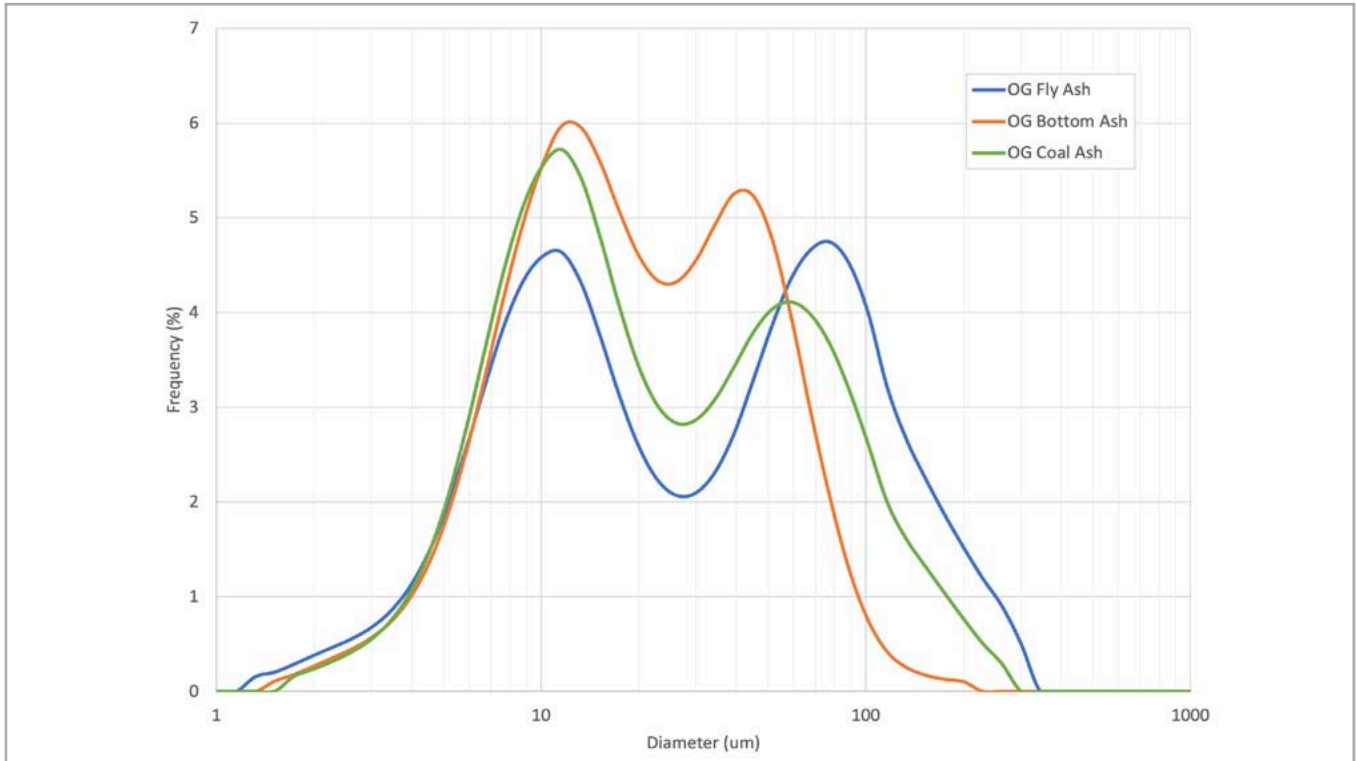
Oak Grove Coal Ash

Blended Ash for Concrete

Oak Grove Coal Ash is a novel blend of Oak Grove Fly Ash and Milled Oak Grove Bottom Ash which will provide consistent performance while increasing available supply of Oak Grove supplementary cementitious materials to all

customers. This product takes advantage of the benefits and known quality of Oak Grove Fly Ash while adding the reactivity benefits of a finely ground pozzolanic material.

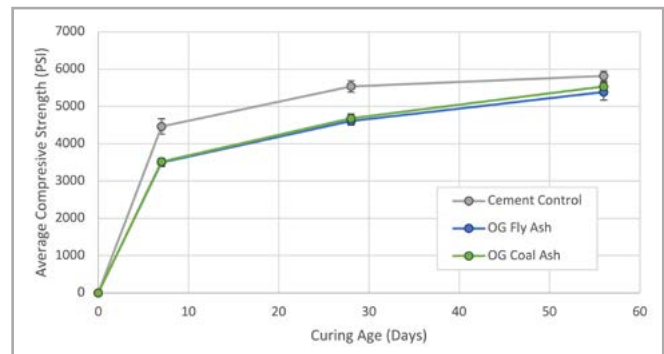
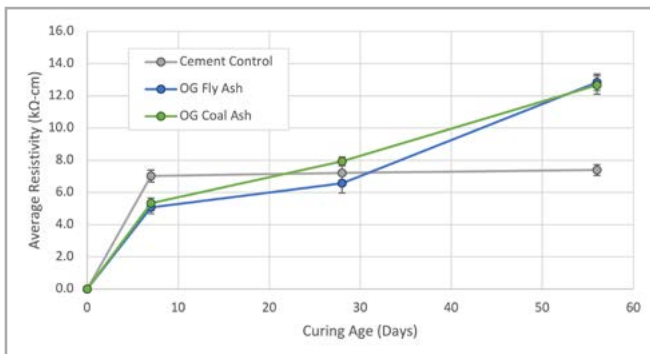
Example: Particle Size Distribution – Oak Grove Fly Ash and Milled Bottom Ash*



This product represents the cutting edge of modern supplementary cementitious material design and is one of the first materials brought to market that takes advantage of recent changes made to the ASTM C618 standard that allows for the use of bottom ash for concrete

applications. Oak Grove Coal Ash demonstrates concrete performance consistent with Oak Grove Fly Ash, whereby the pozzolanic reaction promotes long term strength and durability enhancement of concrete and much lower heat of hydration.

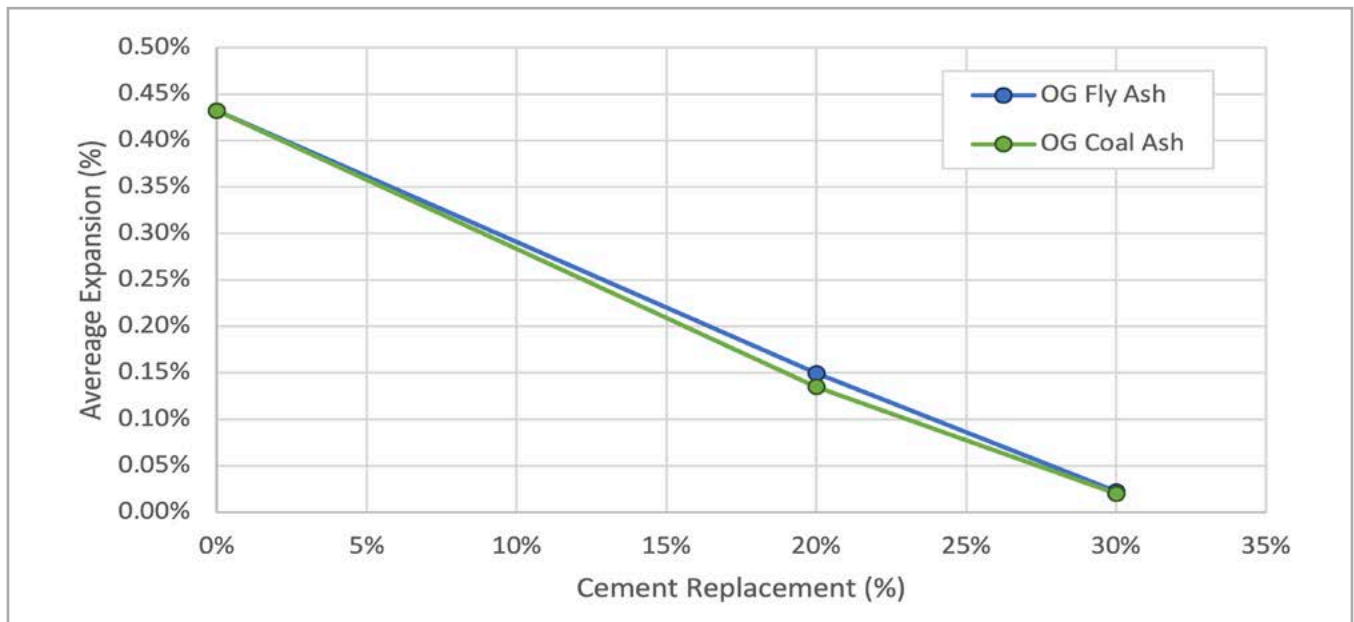
Concrete Performance – TxDOT Class A Concrete**



Importantly, Oak Grove Coal Ash also exhibits similar reactivity as Oak Grove Fly Ash, as shown by its ability to

mitigate Alkali Silica Reaction to the same extent.

Alkali Silica Reaction Mitigation – ASTM C1567 Accelerated Mortar Bar Method*



Finally, and most importantly, Oak Grove Coal Ash meets all the requirements of ASTM C618.

Example: ASTM C618 Results*

Characteristic	ASTM Limit	OG Fly Ash	OG Coal Ash
SiO ₂ +Al ₂ O ₃ +Fe ₂ O ₃ (%)	70.0 (Min)	80.4	80.7
CaO (%)	18.0 (Max)	12.1	11.7
SO ₃ (%)	3.0 (Max)	0.5	0.6
Moisture (%)	3.0 (Max)	0.1	0.2
LOI (%)	6.0 (Max)	0.3	0.6
Fineness (%)	34 (Max)	30	21
7-Day Strength Activity Index (%)	75 (Min) - At 7 or 28 Days	80	85
28-Day Strength Activity Index (%)	75 (Min) - At 7 or 28 Days	88	85
Water Requirement	105 (Max)	96	97
Density	-	2.25	2.5

*The results illustrated are from specific samples and are expected to be representative of future product samples with reasonable variations.

**The results illustrate performance characteristics relative to TxDOT Class A Concrete. However, it should be noted that the Oak Grove Coal Ash is suitable for structural concrete applications as well.



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