

# Technical Bulletin

## Performance of OPUS SCM™ with alluvial feedstock



### OPUS SCM™ meets ASTM-C618 Specifications

Terra's OPUS SCM™ is a supplementary cementitious material (SCM) manufactured from various aggregate feedstocks. The table below shows results for a representative alluvial feedstock used in a concrete mix design. Alluvial deposits can be chemically attractive for the OPUS process and meet and/or exceed the specifications for a Class N pozzolan. When used to

partially substitute Portland cement, OPUS SCM™ improves the performance and durability of concrete. Its chemical and physical properties are carefully monitored to be compatible with Portland cement and match the concreting needs of today. OPUS SCM™ also performs competitively when compared to most Class F fly ash sources.

		Class N pozzolan	Class F fly ash	OPUS SCM™
Class		N	F	N
<b>Chemical Properties:</b>				
SiO <sub>2</sub> + Al <sub>2</sub> O <sub>3</sub> + Fe <sub>2</sub> O <sub>3</sub>	min %	70	50	<b>91.5</b>
SO <sub>3</sub>	max %	4	5	<b>0.0</b>
CaO	max %	n/a	8	<b>0.9</b>
Moisture content	max %	3	3	<b>0.06</b>
Loss on ignition	max %	10	6	<b>0.1</b>
<b>Optional chemical</b>				
Available alkalis, as Na <sub>2</sub> O	max %	1.5	1.5	<b>1.15</b>
<b>Physical Properties:</b>				
Fineness, retained on #325 sieve (%)	max %	34	34	<b>5</b>
<b>Strength Activity Index (SAI)</b>				
- Percent of control at 7 days	min %	75	75	<b>82</b>
- Percent of control at 28 days	min %	75	75	<b>86</b>
Water requirement	max %	115	105	<b>99</b>
Autoclave expansion	max %	0.8	0.8	<b>-0.02</b>
Density	g/cm <sup>3</sup>	n/a	n/a	<b>2.57</b>
<b>Optional physical</b>				
Drying shrinkage	max %	0.03	0.03	<b>0.0</b>

This table provides the chemical composition and physical properties of OPUS SCM™, which was validated by independent laboratories certified by ASTM. Terra recommends that end-users test OPUS SCM™ in concrete mix designs using their local materials to confirm performance.