

STALITE Lightweight Aggregate Physical Characteristics for Geotechnical Applications

Property	Units	Coarse 3/4" x #4	Fine #4 x 0
Density (Unit Weight)			
Typical Damp Loose Density	pcf	48	55
Typical Compacted In-Place Moist Density (ASTM D 698)	pcf	60	77
Estimated Max. Compacted Density (Saturated & Drained)	pcf	68	85
Specific Gravity (Relative Density)			
Dry		1.45	1.65
Saturated Surface Dry		1.50	1.80
Absorption			
Saturated Surface Dry (ASTM C 127)	%	6%	8 - 10%
Maximum Long-Term Absorption	%	9%	12%
Soundness (% Loss)			
Sodium Sulfate (ASTM C 88)	%	0 - 0.23%	0.31 - 3.2%
25 Cycles Freezing and Thawing (AASHTO T 103)	%	0.22 - 0.80%	NA
Los Angeles Abrasion (AASHTO T 96)	%	25 - 30	NA
Permeability			
ASTM D 2434	cm/sec	5 - 15	0.08
Stability			
Angle of Internal Friction (Loose)	deg.	40° - 42°	N A
Angle of Internal Friction (Compacted)	deg.	43° - 46°	38° - 46°
Impurities			
Clay Lumps (ASTM C 142)	%	0	
Organic Impurities (ASTM C 40)	%	0	
Ignition Loss (ASTM C 114)	%	0	
Electrical Resistance			
Lab (AASHTO T 288)	ohm-cm	30,000 - 40,000	
Field (ASTM G 57)	ohm-cm	> 500,000	
Aggregate Chemical Characteristics			
Stains (ASTM C 641)		None	
Chloride Content (AASHTO T 291)	ppm	0.60 - 7.0	
Sulfate Content (AASHTO T 290)	ppm	32	
pH (AASHTO T 289)		7 - 9	

Certified test reports available

* - As measured by the ESCSI One Point Proctor Test. This test is a modified version of the ASTM D 698 "Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort" that was developed because of the cohesionless nature of lightweight aggregate. In the test, the aggregate sample is placed in a 0.5 cubic foot bucket at the moisture content that the aggregate will be delivered to the project site. The sample is placed in three equal layers and compacted by dropping a 5.5 pound rammer from a distance of 12 inches 25 times on each layer.

