

Structural Lightweight Volcanic Aggregates For Geotechnical Fill



MSE Walls, Bridge Abutments & Approaches, Insulating Backfill, Pipe Trench Fill, Landscape & Plazas Fills, Waterfront Structures, Soft Soils

Overview

Lightweight volcanic aggregate is engineered to solve complex geotechnical challenges by reducing load, improving stability, and enhancing long-term performance. Produced from high-quality natural volcanic material, this aggregate offers a reliable, cost-effective alternative to other fill materials in projects where weight or ground conditions are critical factors.

Reduced Dead Load and Lateral Forces: Lower unit weight decreases dead load and lateral forces by more than half.

Improved Slope Stability: High internal friction angle makes it ideal for embankments, retaining walls, and steep grade transitions.

Exceptional Thermal Value: High insulation value provides necessary thermal stability around sensitive water structures, lines and other thermally sensitive elements.

Excellent Drainage: Naturally porous structure promotes rapid water movement and reduces hydrostatic pressure.

Ease of Handling & Placement: Lightweight material improves constructability and reduces equipment strain.

Durable & Long-Lasting: Resistant to degradation, weathering, and freeze-thaw cycles.

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Properties

Product Options:

Volcanic aggregate is available in a multiple grading options. Consultation during the conceptual design phase of the project will ensure the grading and engineering properties align with the design criteria.

1.5" Specification - Most requested product for lightweight bacfill projects.

Gradation - ASTM 136

Size (mm)	Size (in)	Spec %	Passing %
50	2	100	100
25	1	80-100	94
9.5	3/8	40-100	58
4.75	No. 4	10-70	23
1.18	No. 16	0-40	15
0.3	No. 50	0-25	11
0.075	No. 200	0-15	3.8

Test Results

Attribute	Method	Result
Bulk Density	ASTM C29	39 lbs / ft ³
Max Density	ASTM D1557	72.1 lbs / ft ³
Optimum Moisture	ASTM D1557	18.0%
CBR at 0 100"	ASTM D1883	35.5%
CBR at 0 200"	ASTM D1883	34.00%
Soundness	ASTM C88	1.55%



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