

RESEARCH REPORT

COMPRESSIVE STRENGTH TESTING OF STALITE STRUCTURAL SOIL

The purpose of this test is to determine the compressive strength of STALITE Structural Soil for use as it applies to fire lane applications. The test is designed to determine the actual resistance to deformation of the Structural Soil Mixture. The test is not an indication of the allowable bearing pressure that can be achieved using the Structural Soil Mixture, since such a determination has many variables, which cannot be addressed by this test.

Testing Apparatus:

STALITE'S Quality Control Laboratory constructed a steel box to use for testing the aggregate. The box was constructed of ½ inch steel with welded joints. The inside dimensions of the box were 11 inches wide by 11 inches long by 8 inches tall. The loading plate for the box was constructed of ¾ inch steel and had sufficient clearance on all sides as to prevent binding during loading.

Test Method: Compacted Aggregate

The STALITE Structural Soil was at 12% total moisture content at the time of testing. The material was placed into the box in 3 layers and compacted using a 5.5 lb proctor hammer having 12 inches of fall. The aggregate was compacted similar to ASTM D-698 having 2 blows per in² of surface area. The compacted aggregate was then covered with the loading plate and placed in a Forney calibrated load frame. The load frame was used to load the aggregate to the failure criterion of ½ inch deflection. The ½ inch of deflection was used as the failure criterion, giving a safety factor of 2 for general geotechnical applications.

Test Material Properties:

The STALITE Structural Soil consisted of:

75% Stalite, 3/8" Expanded Slate Lightweight Aggregate

20% Sand

5% Compost

Test Results:

Material	Deflection	Type	Area	Load	PSF	PSI
Structural Soil	½ inch	Compacted	121 in ²	40320 lb	47,984	333
Structural Soil	1 inch	Compacted	121 in ²	145320lb	172,942	1201