
GraniteCrete Fire Lane/Truck PSI Information

When it comes to selecting a paving material—particularly those that will be used in driveways or for a fire lane—a top question is whether the paving material will be able to safely bear the weight of a fire truck.

This question requires special consideration, as a fire truck typically has a much higher axle weight than other vehicles. For this reason, some states (California included) allow fire trucks to exceed weight restrictions imposed on other vehicles by the Department of Transportation.

Summary

A GraniteCrete installation will have a fully supportive base, so it will not run the risk of collapsing beneath; therefore, the application of H-20 or HS-20 loading is not required.

GraniteCrete has an unconfined compressive strength of 837 psi, under ASTM D558. Simply put, GraniteCrete is an average of 3.5 - 4.5 times stronger in compression than what is required to withstand the surface pressure exerted by a heavy vehicle, such as a fire truck.

When a fire truck's stabilizer outriggers are in place, a point load as great as 45,000 pounds can be applied to the pavement surface. Although 45,000 pounds is significant, it will be distributed over a surface area of approximately 0.97 square feet (area of 10 x 14 inches), this equates to a surface pressure of 322 psi. Again, this is well within the compressive strength of GraniteCrete, as GraniteCrete is able to bear a vehicle weight of 75,000 pounds.

Explanation

To determine whether a paving material will successfully bear the weight of a fire truck, there are three key criteria that should be evaluated:

- 1) The design equivalent single axle loads (ESALs) applied to the pavement system
- 2) The fire truck wheel and axle loads