

A Mechanical Stemming Device for Use in Explosive Loaded Blast Holes

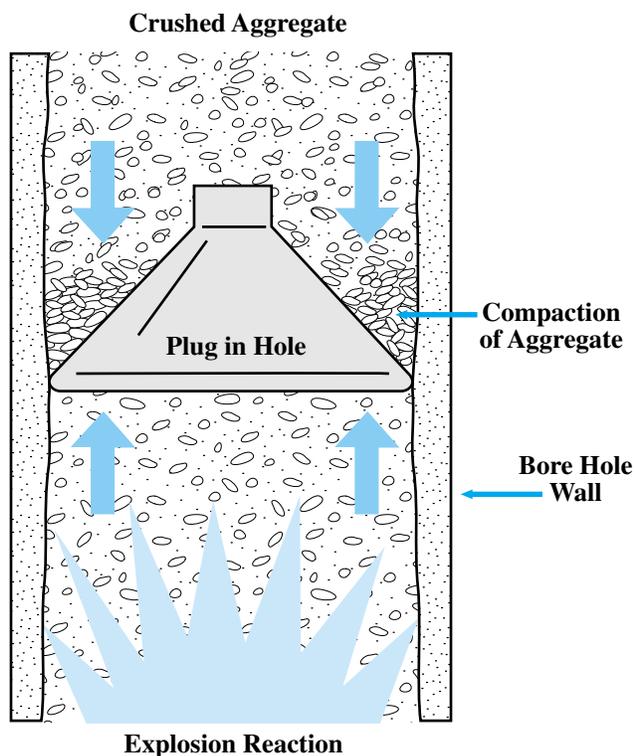


Simple Device Maximizes Blasting Efficiency and Reduces Costs

In mining applications the removal of rock usually involves blasting. StemTite (now BF Carr and Associates), with the help of a grant from the Department of Energy's Inventions and Innovation Program, developed StemPlugs™ to meet the conflicting requirements of maximizing blast efficiency and minimizing costs.

StemPlugs are placed in the stemming zone of the blast hole, increasing the containment of the explosive gases in the blast hole. The resulting increase in explosive energy is transmitted to the rock mass and is used to fragment the rock rather than vent up the blast hole. In addition to maximizing blast efficiency and improving blasting safety, the device can extend the safe use of explosives into areas that would otherwise not allow blasting.

The StemPlugs are available in 12 graduated sizes ranging from 3" to 12 1/4" from 90¢ to \$6.50. The resulting benefits far outweigh the cost of using the new plugs.



StemPlug in Use in a Bore Hole

Overview

- ◆ Developed by the University of Missouri-Rolla and StemTite, LLC
- ◆ Available from BF Carr & Associates
- ◆ Commercialized in 1991
- ◆ More than two and one half million plugs sold worldwide

Applications

Used in the construction, quarrying, and mining industries

Capabilities

- ◆ Offers blast plugs in a variety of sizes.
- ◆ Maximizes the efficiency of blasting, thus allowing less explosive to be used.
- ◆ Is easy to use in various situations.
- ◆ Reduces the amount of airborne pollutants by containing the blast energy in the hole.
- ◆ Allows for blasting closer to inhabited areas because less airborne dust is created.

Benefits

- ◆ Reduces explosive costs because blasting, is more effective.
- ◆ Reduces airborne pollutants.
- ◆ Increases worker safety and reduces noise levels.
- ◆ Reduces cost of secondary processing resulting from increased fragmentation.