

SIMULATION OF BLAST ENVIRONMENT USING A NOVEL DILUTE EXPLOSIVE

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With support from the Defense Nuclear Agency, SRI International has developed and patented a castable dilute explosive that offers unique advantages over conventional high explosive. The primary advantages of the dilute explosive are that its detonation pressure can be adjusted over a wide range and its impulse can be controlled independently by adjusting the thickness and configuration. Moreover, because the dilute explosive can be cast in virtually any shape with arbitrary dimensions, it provides not only substantial flexibility in tailoring the resulting pressure pulse but also a means of applying a blast environment directly to complex and contoured structures. In addition, the blast environment generated by the dilute explosive is smooth and free from the pressure spikes that are produced when strands of conventional high explosives are used to reduce the simulated pressure.

The dilute explosive is completely stable and has a long shelf-life, comparable to that of dry explosive powders. Numerous safety and handling tests conducted on dilute explosive by SRI International and other reputable independent laboratories have led to a Class I. ID explosive designation and a permanent unrestricted shipping permit from the U.S. Department of Transportation.