

# INFLUENCE OF HE SHAPE ON BLAST PROFILE

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This paper is concerned by the effect of HE geometry on the shape of the blast wave. The aim of this work is to increase our knowledge on pressure profile and blast wave shape so as to optimize the design of our explosion chambers. These facilities are commonly designed for spherical HE but most of the customer charges have other geometry (line, plate, cylinder ...).

Numerical simulations performed with Multi Materials Arbitrary Eulerian solver in LSDYNA were used to simulate hemispherical and rectangular shape HE events detonated on the ground. Pressure records in front of the charge (reflected pressure) and on lateral positions at different locations (incident pressure) are compared to experiments performed at CEA / Gramat. High speed video has also been used in order to visualize the shape of the fireball and the shock wave in air.

It is confirmed numerically that the shape of explosive generates different shape of blast wave and so will change the way of designing new chambers. Some points concerning numerical parameters and also EOS of gas products are also presented.