

SMALL SCALE BLAST TESTS FOR SAFETY REQUIREMENTS OF A PYROTECHNIC FACILITY

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For complex configurations of an accidental detonation in a pyrotechnic facility, the danger and safety zones are not easy to identify, especially for close rooms and blowing walls. The objective of the paper is to address the required danger zones by small scale experiments and then by comparison with numerical simulations within and outside the pyrotechnic facility.

The 1/15 scaled experiments are performed to reproduce the detonation event of 10 kg HMX based pressed HE in an operating room. The blast effects are measured in this room and in the following rooms. Blast pressures down to 20 mbars are measured with piezo-electric and piezoresistive gauges.

Numerical simulations are performed with Ouranos hydrocode simulations in a 2D axi-symmetric configuration. The different pressures and the required danger zones are presented and compared with the scaled experimental results.