BLAST LOADING TESTS WITH A (RIGID) CONCRETE RECTANGULAR PARALLELEPIPED IN THE LARGE BLAST SIMULATOR REITERALPE

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Blast loading tests on military equipment, for instance a military truck, have been conducted on an idealized concrete specimen in the Blast Simulator facility Reiteralpe. The purpose is to evaluate the loading function required for numeric calculations. Specimen sizes are 2x2x4 m. The test object was placed on the ground as well as on 4 stilts in two different heights. The effective peak pressures measured 0.3, 0.5, 0.7 bar. The overpressure vs. time at different locations at the front, rear, side, top
and bottom was registered. The results are presented as pressure-time and impulse-time diagrams. In addition, horizontal and vertical loadings are discussed.

For testing scaling laws of blast loaded objects, the same experiments with a small scale block have been conducted in the Ernst Mach-Institute model-simulator.