

P27 Validation and Preparation of Large Blast Tests on Protective Modular Structures (PMS) by means of Numerical Simulation

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Abstract:

This paper describes the validation and preparation process for blast tests on a Passive Modular Protective Structure(PMS) in front of the large blast simulator (LBS) of the WTD52 via the use of numerical simulation tools. The blast tests of the PMS are part of a bilateral cooperation between Switzerland and Germany and should demonstrate the effectiveness of the protective structure against large, Vehicle Borne Improvised Explosive Devices (VBIEDs). Due to the absence of suitable test facilities for a full-scale free-field test of this type and because of cost-reduction requirements for both nations, the test structure was built in front of the LBS in Germany, which is usually used to simulate the effect of nuclear-type blasts on test structures.

The paper describes numerical techniques which have been used to: qualitatively-demonstrate the extension of the test facility to cater for VBIED-loading as well as the determining levels of damage prognosis for complex structures.

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