POTENTIAL OF WATER FILLED BIG BAGS TO MITIGATE BLAST EFFECTS

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The effects of blast mitigation with water are widely discussed. In 2015 armasuisse Science + Technology and the Board of Experts for Military Infrastructure Protection carried out three experiments using commercially available watertight big bags in conjunction with HESCO – walls.

- The first experiment comprised of two parallel aligned HESCO MIL 3 walls (two HESCO as a base and one placed on top - total height 2 m) with a five meter spacing in between.
  One HESCO wall was partly shielded off with a row of big bags filled with water (approx. 1m^3 each) placed in front of the HESCO wall. The second, non protected wall, served as reference. The charge of 50 kg TNT equivalent was located in the center between the walls.
- The second experiment consisted of one bottom row with two HESCO MIL 3 elements and on top a row with water filled big bags. The charge of 50 kg TNT equivalent was located at the same distance as in the first experiment.
- The third experiment consisted of one bottom row with two HESCO MIL 3 elements and on top a row with water filled big bags. In addition to experiment two, there was also a row with water filled big bags placed in front of the wall. The charge of 50 kg TNT equivalent was located at the same distance as in the previous experiments.

The effects of these different setups on peak pressure and impulse will be discussed based on the pressure measurements and high speed videos made.