EXPERIMENTAL STUDY OF THE REDUCTION OF BLAST OVERPRESSURE BY DIFFERENT DAMPING AGENTS

E. Mataradze[1], T. Krauthammer[2], N. Chikhladze[1], E. Chagelishvili[1], I. Kalichava[1]

[1] Mining Institute, 7 Mindeli St., 0186 Tbilisi, Georgia

[2] Center for Infrastructure Protection and Physical Security, University of Florida, Gainesville, FL 32611, USA

ABSTRACT

The paper presents the results of the tests conducted with a view to making comparative analysis of damping properties of disperse water, disperse water-glycerin emulsion and disperse suspension of water-pearlite powder. The purpose of the experimental study is to assess the effectiveness of dispersed mitigating agents in underground structures (or in long facilities), under conditions when the geometric dimensions of the mist are commensurable with the lateral dimensions of the structures. A special 3m test bench (cross-sectional dimensions 0,6mx0,4m) provided with nozzles for the dosed supply of various damping agents was used for the testing. The results of the tests will be used for the selection of an acting agent of a blast energy absorber in underground structures.

Keywords: Blast Overpressures, shock attenuation, mitigating agent, blast energy absorber.