Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Fracture of Constructional Materials with the Covering at Shock-Wave Loadings PAVEL RADCHENKO, Institute of Strength Physics and Materials Science SB RAS, Russia, ANDREY RADCHENKO, Tomsk State University of Architecture and Building, Russia — The behavior of constructional materials with a covering subjected to shock load is numerically modeled. The covering on a material is applied by the method of high velocity oxygen fuel. The materials created by a similar method, are widely applied in aerospace branch, both for creation of engines and for creation of details of cases. Possibility of application of multilayered coverings essentially expands the spectrum of researches for the analysis of separate layer influence on behavior of a design as a whole. Features of behavior of this sort of materials is an actual problem as well as construction of authentic models of behavior of materials with coverings as a whole. Influence of a material of a covering, quantity of layers and their geometrical parameters on fracture and shock-wave processes in a material is investigated. The range of velocities of interaction from 50 to 2000m/sec is considered. As projectiles steel cylinders and spheres were used.

Pavel Radchenko
Institute of Strength Physics and Materials Science SB RAS, Russia

Date submitted: 15 Nov 2011 Electronic form version 1.4