

Abstract Submitted
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2D- and 3D-explosive experiments for verification of spall and shear strengths models for some steels EVGENY KOZLOV, RFNC-VNIITF

— Presented are new results on the kinetics of stress relaxation on the elastic and phase precursors in hardened 30KhGSA steel (HRC 35...40), as well as results how parameters of the main plastic wave and spall signals change throughout wedge samples and semispherical shells. Comparative study of specificities in the fracture of wedge samples and semispherical shells of 12Kh18N10T and 30KhGSA steels (HRC 35...40) was made using optical lever method, multi-channel laser interferometry, mild recovery and calorimetric measurement of converged shells, their multi-angleshot gamma-tomography; the high-rate and heavily deformed material was investigated using optical, scanning, and transmission electron microscopy. Mechanisms of the high-rate developed deformation including issues on localization of deformation and nocystallographic flow of crystals are briefly discussed. I'd like to express gratitude and appreciation to my co-workers V.I.Tarzhanov, I.V. Telichko, D.G. Pankratov, S.A. Brichikov, D.S. Boyarnikov, L.P. Brezgina, V.N. Povyshev and collaborators A.V. Dobromyslov, N.I. Taluts for their contribution to experimental research.

Marvin Zocher
LANL

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