

Abstract Submitted  
for the SHOCK05 Meeting of  
The American Physical Society

**More on the Strength of Materials Under High Shock Pressures**

Y. ASHUACH, Z. ROSENBERG, E. DEKEL, A. GINZBERG, RAFAEL, P.O. Box 2250, Haifa, Israel — One of the most important issues, in the field of dynamic loading of solids, is that of determining the strength of materials subjected to high shock pressures. Various techniques, most of them indirect, have been used to measure this property, by monitoring either stress or particle velocity in the shocked specimen. In this work we present a relatively simple and direct technique which is based on simultaneously measuring two stress histories, in a plate impact experiment with a structured target plate. The basic idea is to measure the stresses on the Hugoniot and release path simultaneously and to extract the strength under the high pressure from the difference between the two. Thus, the target is composed from two halves, one of which is a thick Plexiglas in which a manganin gauge is embedded some 2-4 mm from the impact face. The other half consists of the specimen backed by a thick Plexiglas, with another gauge at some distance into the plastic. The flyer material is a thick specimen disc. The two stress records correspond to the direct impact of the specimen on Plexiglas, resulting in a point on the Hugoniot of the specimen, and the second to a point on the unloading of the specimen. Results for different aluminum alloys, steel and alumina are presented.

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Date submitted: 01 Jul 2005

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