

Abstract Submitted
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On the spall strengths and Hugoniot elastic limits of some strong ceramics ZVI ROSENBERG, YECHEZKEL ASHUACH, RAFAEL, P.O. Box 2250, Haifa, Israel — The dynamic response of strong polycrystalline ceramics is relatively well documented, with high Hugoniot elastic limits (HEL) and very low spall strengths. In contrast, the response of single crystal ceramics is less researched and some of their findings are controversial. In the work presented here we were interested in the extremely high HEL which was reported recently for Gallium Gadolinium Garnet (GGG) as well as in strength of sapphire and magnesium aluminate spinel, on which there are very few reports. The measurements were made with manganin gauges embedded at the back of the specimens, with a thick Plexiglas backing for the gauge. These measured stress-time histories are very simple to interpret and accurate values for the HEL and spall strength of these materials can be easily extracted. Some of our results (e.g. the HEL of GGG) are quite different than those published by other workers.

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