

Abstract Submitted
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Study of dynamic compression properties of H-K9L glass with prefabricated internal defects CHANGMING HU, XIANG WANG, LING-CANG CAI, CANGLI LIU, Laboratory for Shock Wave and Detonation Physics, Institute of Fluid Physics, P.R.China, 621900 — The shock compressed behavior of H-K9L glass with initial inner prefabricated defects was experimentally studied in this paper. All impact tests are conducted on powder gun and the measurement system is high time-spatial resolution DPS array, which time and spatial resolution was 50 ps and 127 μm respectively. The results show the subtle difference in the velocity reached its maximum, together with the saltation velocity of 1m/s caused by the defects, which were preliminarily considered to be resulted from the spread of defect shock compression wave. In the meantime, based on the experimental results, it was deduced that there was a compression breaking stress threshold value in the prefabricated damage region under the shock compression. According to these experimental investigations, the limitation and immaturity of high time-spatial resolution DPS array measurement system were mentioned respectively, especially, the effective recording time was sacrificed on account of considering high time-spatial resolution.

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