

Abstract Submitted
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Behavior of Ultrasonic Consolidated Aluminum under Shock Loading DANIEL CASEM, GEORGE GAZONAS, US Army Research Laboratory — The shock response of Ultrasonic Consolidated (UC) aluminum is investigated by plane shock wave experiments. The UC material is manufactured by the Solidica company using a process during which thin layers (50 micron) of 1100 aluminum are bonded together by ultrasound to create what is effectively a solid state weld. The primary interest of this research is in determining the spall strength of these bonds and how it compares to that of solid 1100 aluminum. Of secondary interest is how shock waves propagate through the layered material, i.e., the effect on the development of the plastic wave and dispersion through the heterogeneous media.

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