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The shock and spall response of AA 7010-T7651 PAUL HAZELL, The University of New South Wales, GARETH APPLEBY-THOMAS, DAVID WOOD, JONATHAN PAINTER, Cranfield University — Aluminium alloys are used extensively in armour. Their use as armour materials is primarily due to their relatively low densities and their high strength characteristics. The aerospace-grade 7000-series alloy Al7010-T7651 is one possible contender for armour. In this study a series of plate-impact experiments were undertaken to investigate the behaviour of this alloy under shock. Manganin stress gauges and a heterodyne velocimeter system were used to interrogate both strength and dynamic tensile failure (spall) respectively; with microscopic analysis of recovered samples providing insight into the development of failure in the material.

Gareth Appleby-Thomas
Cranfield University

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