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Deviatoric response of the aluminium alloy, 5083 GARETH APPLEBY-THOMAS, PAUL HAZELL, Cranfield University, JEREMY MILLETT, NEIL BOURNE, AWE, Aldermaston — Aluminium alloys such as 5083 are established light weight armour materials. As such, the shock response of these materials is of great importance. The shear strength of a material under shock loading provides an insight into its ballistic performance. In this investigation embedded manganin stress gauges have been employed to measure both the longitudinal and lateral components of stress during plate impact experiments over a range of impact stresses. In turn, these results were used to determine the shear strength and to investigate the time dependence of lateral stress behind the shock front to give an indication of material response.

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