

Abstract Submitted  
for the SHOCK07 Meeting of  
The American Physical Society

**The Effect of Fibre Orientation on the Shock Response of a Glass-Fibre Epoxy Composite.** YANN MEZIERES, Assystem, JEREMY MILLETT, AWE, Aldermaston, NEIL BOURNE, University of Manchester — The response of a 2-D glass-fibre epoxy composite to one-dimensional shock loading has been investigated as a function of orientation of the fibres to the loading axis, in terms of its equation of state. When the shock axis is normal to the fibres, the response appears to be dominated by the epoxy matrix. In contrast, when the shock axis is parallel to a fibre direction, the shock front appears ramped at low stresses, steepening as the impact stress increases. Analysis of these traces suggests that a low stress amplitude wave is transmitted along the fibres at a high velocity, with a lower velocity wave is transmitted through the matrix between those fibres, taking the material to its final stress amplitude.

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Date submitted: 20 Feb 2007

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