

Abstract Submitted
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Spall Strength of Niobium and Molybdenum MATTHEW COTTON, JEREMY MILLETT, GLENN WHITEMAN, NIGEL PARK, AWE, Aldermaston — The shock response of niobium and molybdenum have been investigated as part of a wider programme on bcc metals. Previous work has studied shear strength development behind the shock front and related the observed behaviour to known deformation mechanisms. We now turn our attention to the dynamic tensile (spall) response of these materials. Although both are bcc in nature and adjacent to each other in the periodic table, they display very different behaviours. Niobium has been shown to be highly ductile, with a high spall strength. In contrast, molybdenum is brittle, with a low spall strength that reduces to near zero as stress amplitude increases. Results are discussed in terms of the deformation mechanisms.

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