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On the ballistic response of comminuted ceramics AMER HAMEED, GARETH APPLEBY-THOMAS, Cranfield University, PAUL HAZELL, University of New South Wales, DAVID WOOD, Cranfield University — Recent results have strongly suggested that the ballistic-resistance of different comminuted ceramics is similar, independent of the original strength of the material. In particular, experimental work focused on the ballistic response of such materials has suggested that ballistic response is largely controlled by shattered material morphology. Consequently, it has been postulated that control of the nature of ceramic fragmentation should provide a potential route to optimise post-impact ballistic resistance. In particular, such an approach would open up a route to control in multi-hit capabilities. In this study ballistic tests into pre-formed "fragmented-ceramic" analogues assembled from compacted alumina powders with two differing morphologies were conducted. These results strongly suggested that careful choice of initial ceramic morphology should provide a route to tailor post-impact ceramic properties.

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