A numerical investigation of sleeved Taylor anvil specimens J.C.
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lor anvil test is widely used for the validation of constitutive models in non-linear
continuum mechanics codes. Numerical simulations have been performed on two
modified specimen geometries: a sleeved cylindrical projectile and a sleeved conical
projectile. In this study the core material is aluminium and the sleeve material is
tungsten alloy, providing a large difference in impedance. The objective is to develop
concepts that allow the stress profile along the axis of the projectile to be controlled
and varied, allowing a greater range of material behaviour to be investigated through
anvil tests. The simulations show that by altering the lateral stress relief waves the
stress profiles are significantly altered. The sleeved conical projectile achieves sig-
nificantly higher compressive pressure on the axis than achievable through uniaixal
compression for a given velocity.

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