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Application of the Modified Mohr-Coulomb fracture criterion in predicting the ballistic resistance of 2024-T351 aluminum alloy plates impacted by blunt projectiles

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## Highlights

- Ballistic impact tests on 9.94 mm thick 2024-T351 aluminum alloy plates struck by blunt projectiles were conducted.
- Shear plugging was identified in the tests.
- FE simulations were carried out by using either the Johnson-Cook fracture criterion or the Lode dependent Modified Mohr-Coulomb (MMC) fracture criterion.
- FE simulations using the Lode dependent MMC fracture criterion reasonably predicted the ballistic limit and fracture behavior of the target
- FE simulations using the Lode independent Johnson-Cook fracture criterion obviously over-predicted the ballistic limit of the target.

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