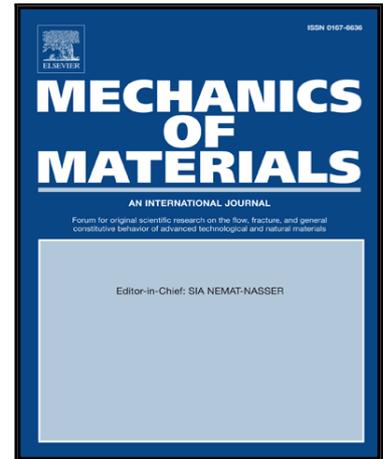


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Investigation and prediction of tearing failure during extrusion based on a modified shear damage model

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**Highlights**

- Metallurgical microstructure observed by OM and SEM were analyzed to investigate the mechanism of tearing failure.
- The new shear GTN damage model was used to predict material damage and tearing fracture during extrusion.
- Cohesive zone model was applied to the RVE to simulate the de-bonding of the grain interfaces
- Material evolution in severe shear zone of extrusion process was studied.
- The deformation and propagation mechanism of shear band during extrusion were discussed.

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