

## Accepted Manuscript

Stress-strain response and volume change of a highly filled rubbery composite: experimental measurements and numerical simulations

Pierre Gilormini, Paul-Aymé Toulemonde, Julie Diani, Antoine Gardere

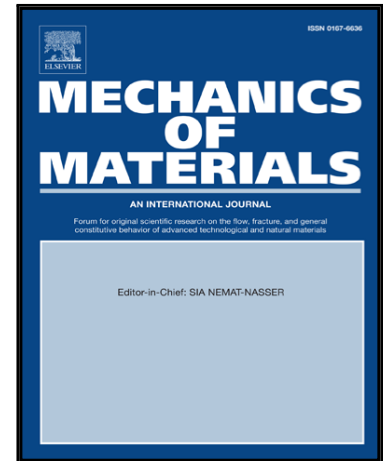
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**Highlights**

- A highly filled composite was prepared from an acrylate matrix and glass beads
- The applied force and the apparent volume were measured during a uniaxial tensile test
- Both curves were reproduced up to void coalescence with a finite element model using cohesive zones
- X-ray tomography scans allowed direct observation of the damage process

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