



Progressive Damage Modelling in Cross-Laminated Timber Structures by Computational Homogenisation and Cohesive Zone Models

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Summary:

In this paper we investigate the damage process in cross-laminated timber (CLT) structures by a computational homogenisation approach enriched with cohesive zone models. In order to predict the undamaged structural response, four spatial scales are interlinked within a multi-scale finite element modelling scheme. To simulate the cracking process in the material, a cohesive zone model (CZM) is adopted at the homogenised macroscopic scale. This double approach allows us to model successfully the progressive damage process in CLT plates subject to threepoint bending.

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