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Auto-Extinction of Engineered Timber: Application to Compartment Fires with Exposed Timber Surfaces

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Abstract

A series of compartment fire tests with multiple exposed timber surfaces have been undertaken to explore the effect of exposed timber on the fire dynamics and the potential for auto-extinction. A test with exposed wall and ceiling achieved auto-extinction after approximately 21 minutes. Firepoint theory is applied using temperature data at the charline, is shown to predict a mass loss rate dropping below the critical value at 20-21 minutes, and thus is successful in predicting auto-extinction. Additional uncertainties caused by delamination are explored, and recommendations for the use of auto-extinction in design are given.

Full paper

The full paper is available at: LINK

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