



Development of a Canadian Fire-Resistance Design Method for Massive Wood Members

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Summary:

The fire-resistance rating of a building element in an assembly has traditionally been assessed by subjecting a replicate of that assembly to the standard fire-resistance test ULC S101 in Canada, ASTM E119 in the USA and ISO 834 in most other countries. This paper presents two (2) calculation procedures for determining the fire-resistance of massive timber members in an attempt to develop a suitable calculation method that would provide accurate fire-resistance predictions when compared to test data and potentially be an alternative design method to conducting fire-resistance tests in compliance with ULC S101 and to the current Appendix D-2.11 of the National Building Code of Canada. Comparisons between the proposed methodologies and the experimental data for beams, columns and tension members show generally good agreement. Predicted failure times have been compared to experimental data that are publicly available.

Online Access: Free

Resource Link

http://schr.ws/hosted_files/wcte2014/44/ABS077_Dagenais_web.pdf