





## Sound Insulation Performance of Cross Laminated Timber Building Systems

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Summary:

In recent years Cross Laminated Timber (CLT) was introduced as an emerging building system in the North American market. CLT elements consist of multiple layers of wooden beams that are laid-out cross-wise and laminated together to form solid wood panels for floors and walls. As part of a multi-disciplinary research project a comprehensive study was conducted on the impact and airborne sound insulation of this type of elements in order to create a data base that allows building designers to predict the acoustic performance of CLT systems. Parametric studies were carried out on the direct impact airborne sound insulation of CLT floor assemblies (with/ without various floor topping and gypsum board ceiling variants), on the direct airborne sound insulation of CLT walls (with/without gypsum board linings), as well as on the structure-borne sound transmission on a series of CLT building junctions. The results were then used as input data for predictions of the apparent impact and airborne sound insulation in real CLT buildings using the ISO 15712 (EN12354) framework that was originally developed for concrete and masonry buildings. The paper presents the prediction approach as well as results of prediction and measurement series for apparent impact and airborne sound insulation.

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### Resource Link

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