



Curved Cross Laminated Timber Elements

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Material: CLT (Cross-Laminated Timber)

Topic: Mechanical Properties

Keywords: Rolling Shear
 Tensile Stress
 Strength
 Rigidity
 Density

Language: English

Conference: World Conference on Timber Engineering

Research Status: Complete

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 p. 1131-1138

Summary:

In timber construction, curved timber components have been used repeatedly. Yet the use of curved CLT elements is a relatively recent phenomenon. To obtain a European Technical Approval (ETA) for so-called radius timber (single curved CLT elements), Holzbau Unterrainer GmbH commissioned the accredited testing institution TVFA – Innsbruck to carry out the tests required for this purpose. To this end, overall 158 tests were performed in building component dimensions from December 2013 to May 2014, and several laboratory tests were carried out to monitor adhesive joint quality. Due to the single curved shape of radius timber elements, it is key to particularly focus on possible implications on load bearing capacity due to pre-stress of the slats and to the tensile stress perpendicular to grain resulting from deflection forces. To comply with the criteria laid down in the semi-probabilistic safety concept used in Eurocode 5, the impact caused by these pre-curvatures on strength, rigidity and gross density must be known.

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Ecological Thermal Refurbishment with Prefabricated Timber Framed Façade Elements for Mid-Rise Buildings

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Format: Conference Paper

Material: Light Frame (Lumber+Panels)

Application: Wood Building Systems

Topic: Energy Performance

Keywords: Mid-Rise
Façade
Thermal
Prefabricated

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Summary:

The thermal refurbishment of the building stock is one of the most fundamental challenges of sustainable urban development. Particularly the use of natural and local materials gets an increasing relevance, regarding the embodied energy. The focus of this work is the development of systematised solutions for thermal refurbishment with...

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