
Design of adhesively bonded timber-glass structures

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Résumé

Research has repeatedly pointed out the suitability of adhesive bonding to substitute to traditional joining techniques for numerous materials and loads, including timber to glass. Practitioners, however, are still reluctant to implement them into their designs. Adhesion as a method of joining, particularly in the context of hybrid structures, presupposes knowledge of all involved materials, including codes and procedures; most practitioners however tend to be focused on just a subset of materials. Taking the example of a pedestrian timber-glass bridge, this research shows how design and dimensioning of complex bonded hybrid structures can be performed in accordance with traditional engineering practice. The paper guides through every step, from the first concepts to the final design, including the manufacturing, of a pedestrian bridge where timber and glass act together as equivalent members. Possibilities to achieve compliance of this process with engineering models are emphasised.

Mots-Clés: Structural Adhesives, Wood Structures, Timber Joints, Hybrid Joints, Experimental, FEA

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