

#WeKnowWood

Flax-wood hybrid system

Researchers at the Fraunhofer WKI have developed a flax-wood hybrid beam for ceiling construction. It consists of four layers of flax-fiber fabric bonded with partially bio-based epoxy resin, which reinforces the tension zone of the ceiling beam.

As one of the main contributors to CO₂ emissions, the construction industry is under particular pressure to develop future-oriented solutions. Wood acts as a carbon sink. However, due to its specific strength and its lower modulus of elasticity compared to concrete and steel, it reaches its limits when it comes to large dimensions and loads.

One way of meeting serviceability requirements is through new hybrid lightweight-construction materials. In highly stressed zones, fiber composites can provide additional strength and stiffness in the overall system without significantly increasing the cross-section. Efficient and load-optimized material use saves resources and expands the application possibilities of timber construction.

Junior research group

The Fraunhofer WKI and the Institute of Building Materials, Concrete Construction and Fire Safety (iBMB) at the Technische Universität Braunschweig are offering young scientists the opportunity to set up a joint working group to develop innovative solutions for the buildings of the future.

A multidisciplinary junior research group is currently investigating the long-term behavior and durability of wood hybrid systems for load-bearing structures in building construction.

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