



Precast Timber-Concrete Composite Floor Structures for Sustainable Buildings-Experimental Verification

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Summary:

An effort to use renewable materials leads to broader utilization of timber structures also for multi-storey buildings. However, wider application of timber floor structures in multi-storey buildings is limited by lower lateral rigidity, worse acoustic and fire safety parameters in comparison to concrete floor structures. The composite floor structures based on high performance silicates and wood represent the beneficial alternative to the modern timber floor structures. Proposed timber-concrete composite floor structure benefits from lower weight of slender HPC or UHPC deck (compared to common RC slab) while improving acoustic parameters and fire safety of the structure (compared to timber floor structure). Experimental verification proved that effective mechanical connection can be ensured by gluing.

Key words: timber-concrete, high performance concrete, floor structures, experimental verification, glued connection.

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