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A Critical Review of Timber as a Structural Material

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Abstract

The structure refers to the component of the building that is responsible for its stability. The beam, column, slab, and foundation are the four major integral units of the structure. The major challenge while designing the structure for a building is to select materials for its units. Generally, Reinforced cement concrete (RCC) is used widely in the world. The search for the perfect material in replacement of RCC has been ongoing for decades. Timber can be that perfect material everyone has been searching for. It is made out of wood, which is harvested from trees of different plants. This paper focuses on the process of installation and mechanical properties that make timber suitable for construction. Timber has ideal characteristics and mechanical properties that make it fit for the structure. Several mechanical properties like compressive strength, tensile strength, density, and many others have been tested in the lab, concluding timber is a suitable replacement for RCC. There are several problems with timber too, which makes it questionable. Despite having several faults, timber still holds good credit. Major problems with timber, like low fire resistance, being comparatively hard to install, and decaying after contact with moisture, can be solved by applying respective remedies. In conclusion, timber can be one of the best replacements for RCC in terms of sustainability, cost, as well as installation time.

Keywords: *material, strength, structure,* reinforced cement concrete, *timber, wood*