Título: Hybrid wood/steel elements under fire

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Resumo: The main objective of this paper is to present a computational model for the fire resistance of wood/steel hybrid elements. Different design solutions will be presented. The most important factors for fire safety in hybrid elements are the thermal effects degradation and the charring depth formation in wood materials, and also the heat conduction extremely well in steel material. Unprotected steel elements under fire condition may suffer serious damage. The use of hybrid wood/steel elements could increase both structural strength and stiffness. Wood could be considered as an insulating material, the core section could remain at low temperature, function of fire exposure time and element cross section size. All presented results will permit to evaluate different design solutions, which facilitates the fire design of wood/steel hybrid elements. The presented study was conducted in order to articulate the best constructive solution using the finite element method.

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Light steel framing is now used successfully for housing in many countries (such as Canada, Australia, Japan, Korea, and the United States). In the United States approximately 1 percent of new housing starts are cold-formed steel (CFS) [5]. CFS is also used for applications such as fire separation walls within hot rolled steel-framed apartment and commercial buildings. Specialty features may also be on the head, one of which is cutting nibs under the head of a flat head design.

**STUDY ON THE STRUCTURAL BEHAVIOUR OF HYBRID WOODSTEEL STRUCTURES USING FINITE ELEMENT ANALYSIS**

This project involves a detailed study of steel-wood hybrid structures and their applications in the Construction industry. Hybrid structures combine benefits of dissimilar materials to overcome their individual limitations. Various advantages and challenges of steel-timber hybrid structures are presented. Benefits include increase in tensile capacity, seismic performance, fire resistance of the structure, and cost savings. Challenges with this type of hybrid structures originate from the differences in the properties of the materials used. Properties of Steel, Wood, and Concrete Types of Hybridization Case Studies of Hybrid Structures Software Packages Investigation Hybrid Steel Frame And Wood Shear Wall Model. Slideshow 373152 by ona. Modelling OSB as layered element with three linear orthotropic layers. Fig. 18. OSB Shear Wall. Feasibility Study of Hybrid Steel Timber Structures. Fig. 19. Steel frame modelled with Ansys. Feasibility Study of Hybrid Steel Timber Structures.