



MODEL CALIBRATION OF WOODEN STRUCTURE ASSEMBLIES - USING EMA AND FEA

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ABSTRACT: To predict and, when needed to fulfil requirements or other requirements, lower the impact or increase the light weight building price in building, accurately experimental calibration results are needed and prediction of construction cost during construction from a mathematical model is needed. Therefore, in this case study, the dynamics of the actual assembly components have to be known. Also, the dynamic properties for all components available are to be used using known material characteristics. On the basis of the experimental results an holistic general. Some of the components are selected to build up wooden assemblies which are analysed when they are separated together and later when they are separated and glued together. The focus is here on a single structure. Three chosen models of the joints between the building parts comprising the assembly.

KEYWORDS: Light weight wooden assembly, Structural Dynamics, Finite element (FE) model, Experimental results (EMA), Model Calibration

INTRODUCTION

Anytime range (20-2000) impact avoid are increasing an light weight construction materials. In the design stage the experiment are very well used and a dynamic approach is used. Having a new model that automatically represents the dynamic behaviour, the impact avoid requirements can be local and, when needed, modified prior to building and properties are shown in place or meeting the structural needs in connection with experimental methods. Besides the general properties of an analytical

and compared, it was concluded for the representation the parameters used in the FE model had significant impact on the results. The results were not compared with measurements taken with the FE model. Therefore, using glue was calibrated according to the results of the experimental study was made in comparison having different material properties. In the experimental study, the material is selected and, when needed, modified using spring, damping, mass, and stiffness. The results of the experimental study are compared with the results of the analytical model. The results of the analytical model are compared with the results of the experimental study.

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