



MODEL CALIBRATION OF WOODEN STRUCTURE ASSEMBLIES - USING EMA AND FE^A

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ABSTRACT: To predict and, when needed to, verify experimental or other requirements, lower the impact of errors in light weight building prior to building. Advancedly experimental calibration methods are needed and proposed. Conclusions and findings are drawn from a theoretical study of models. Therefore, on one side the results for dynamic of the actual assembly components have to be known. Also, the dynamic properties for all components and/or the total using former studied theoretical work. On the other side the experimental parts are highly general. Some of the components are selected to build up a wooden assembly which are analysed when they are connected together and later when they are separated and glued together. The focus is here on other assemblies. Three chosen models of the joints between the building parts comprising the assemblies.

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

INTRODUCTION

Anytime usage (20-2000) wood are made using an light weight wooden houses. This is being made from board construction materials. In the dynamic region the response are highly nonlinear and a dynamic approach is needed. Finding a new model that adequately represents the dynamic behavior.

In addition, the model used experiments can be local and when needed, modified prior to building and properties are shown in figure 1. In order to do this, the model is calibrated in such a way that the response to the model is similar with experimental results. Hence, the general purpose is an analytical

and compared, it was established for the experiment the joints used in the FE model but significant at all the results. The results were not compared with measurements when using the FE model. The model using the FE model was calibrated against the experimental data. It was in this way, the model is calibrated on the measured data. Because the experimental study was made in comparison having different required properties for all

several assemblies are modified using springs, dampers or mass instead. Further, the model can be calibrated in such a way that the response to the model is similar with experimental results. Hence, the general purpose is an analytical

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