Guideline on the assessment of timber structures: Summary.

Abstract:

The domain “assessment of existing timber structures” has experienced increased interest and gained application in practice over the past years. The objective of the guideline which is summarized in this short communication is to provide the reader with a collection of applicable assessment methods which have been evaluated by a group of experts against keywords like applicability, expenditure of time/cost, validity of results and possible constraints. Since each method only allows the assessment of certain types of material properties, damages or degradation processes, it becomes necessary to combine different methods in order to derive a full picture of the residual performance of the structure. Against this background, common approaches towards the assessment of timber structures are given. The results received from an assessment should be incorporated into analytical models. Different approaches towards the modelling and updating of existing structures are presented, including deterministic, semi-probabilistic as well as probabilistic verification methods. The guideline concludes with a discussion on the present state of the art for the assessment of timber structures. Potential objectives towards an optimization of the methods with respect to a simplified application are defined and necessary developments that finally enable more consistent estimations of the reliability of existing timber structures are highlighted.