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## **On site characterisation of the overall heat loss coefficient: comparison of different assessment methods by a blind validation exercise on a round robin test box**

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### **Abstract**

Several studies have shown that the actual thermal performance of buildings after construction may deviate significantly from its performance anticipated at design stage. As a result, there is growing interest in on site testing as a means to assess real performance. The IEA EBC Annex 58-project ‘Reliable Building Energy Performance Characterisation Based on Full Scale Dynamic Measurements’ focused on on site testing and dynamic data analysis methods that can be used to characterise the actual thermal performance and energy efficiency of building components and whole buildings. The research within this project was driven by case studies. The current paper describes one of them: the thermal characterisation of a round robin test box. This test box can be seen as a scale model of a building, and was built by one of the participants. During the project, its fabric properties remained unknown to all other participants. Full scale measurements have been performed on the test box in different countries under real climatic conditions. The obtained dynamic data has been distributed to all participants who had to characterise the thermal performance of the test box’s fabric based on the provided data. The paper compares the result of different techniques,

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