

## **The calibration of the partial factors to be used in the design of membrane structures**

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Membrane structures are widely used, although there does not exist a unified design approach as there exists for conventional buildings (partial factor framework, Eurocode).

Membrane structures have doubly curved shapes, are pre-tensioned and exhibit a non-linear structural behaviour. A study to calibrate the partial factors to be used for the design of membrane structures is valuable.

The current paper investigates an existing calibration method applied to a representative tensioned membrane structure. The reliability analysis is performed using a first order reliability analysis in combination with Latin Hypercube Sampling. The approach is illustrated for the load cases snow load and wind uplift load.

The results for the partial factors for prestress, snow and wind load are discussed. The calibration method is applicable for the studied membrane structure.