

The Development of a Link Between Prescriptive Regulations and the Performance Based Approach

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Abstract

Performance Based Design (PBD) has various advantages in the design of new and existing buildings. However, the lack of a well-defined framework causing excessive freedom in the design leads to a variety in achieved levels of safety. The need for a consistent level of safety is recognised if PBD is incorporated into a legal system. A robust framework can solve this inconsistency. Deterministic input parameters for a PBD framework are discussed. A possible solution is proposed to make the relationship between input parameters in a framework more explicit.

The focus of this thesis is the development of the New Zealand (NZ) PBD framework in the Belgian context. One of the adapted input parameters in the evolution of the NZ framework is shorter pre-movement times. A survey was conducted with a response of 194 participants. Results are not in favour for the application of short pre-movement times in Belgium. Belgium employs a prescriptive fire safety legislation. A deviation is possible but challenging and procedural complicated. A case study was performed on a compartment in a high-rise building using the NZ framework and a Belgian comparative approach. A higher level of safety was demanded in the NZ approach. However, an exact adoption of the PBD framework for Belgium would not be recommended.