

Practicability of New and Innovative Products – Method for the Evaluation of Innovative Façade Components

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Abstract

In construction, for general contractors the use of newly developed products is always a risk and therefore often leads to the rejection of innovative components. The reason is the lack of practical experience as well as normative regulations and test certificates. Furthermore, instructions and recommendations for the use under certain boundary conditions are also missing.

Due to this reason, a simple method was developed to review the practicability of new and innovative products in façade constructions. With specific technical questions developed with façade consultants the evaluation of innovative façade components for planning, erection, utilization, and demolition is possible. The aim was to make a substantial evaluation of innovative façade components regarding their practicability as well as the influence of the new product on resource efficiency and durability. Therefore, the cost-benefit analysis was chosen for the evaluation. The methodology was divided into two main process steps: in the first step the product is evaluated by means of predetermined selection answers and in the second step, a weighting ratio of the different criteria is set by the user. In total, the review consists of four main criteria, which are divided into 16 fine criteria with an overall of 40 evaluation questions. Thereby, the main criteria are differentiated according to the life cycle of a building and include planning, construction, operation, and removal of the building.

The results of the assessment of new and innovative façade components evaluate the potential of the new product to meet the requirements as part of future facade structures and identify weaknesses and risks of the products at an early stage. With this, the co-operation between manufacturers and executing companies can be tightened to optimize products before their market launch, especially in terms of practicability, durability and resource efficiency.

Keywords: façade components, innovation, durability, cost-benefit analysis