Project description

The objective of the research project is the extension of the useful life of building materials and building parts as well as studies of the building life cycles and the harmonization of the use of building materials and components.

Queried by questionnaire were experts, and 10 housing companies as well as another 10 companies interviewed and information obtained from building advisors, in particular, regarding damage to structures, considered.

Due to the lack of data on residential building, the selected reference period during the 1980s is an important source for defining expected life spans on the basis of expert experience, with the frequency of necessary repairs also being considered.

Irrespective of the quality of the building materials and components, the changing demands of the users are also important. Use periods between 20 and 40 years are given. The result shows that reliable results cannot be obtained when material is compiled by a static approach and average calculations are not sufficient. The opinion given by the majority of the companies interviewed must be considered and arguments allowed for deviation. As regards the assessment of damage risks, it should be stated that building components and materials can change as new developments take place.

The work defines a point in time which approaches the maximum lifetime and thus is above average, i.e., assumes proper, conscious maintenance and also optimizes the life span under economic aspects instead of laying down minimum or maximum spans.

On the basis of the results obtained, a list of components is drawn up on the line followed in DIN 276, which contains the body of data and considers the frequency of repairs; also included is a general characterization of components with life data, which regrettably are rare in the literature.