

Optimum Target Reliability Levels for Industrial Heritage Structures

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ABSTRACT: Numerous factories, warehouses, power plants and other industrial buildings have been registered as industrial culture heritage. At present considerable effort is aimed at re-use of these structures in order to preserve their cultural and heritage value and avoid wasting energy. The industrial heritage structures usually do not fulfil requirements of present standards. Decisions about adequate construction interventions should be based on the complex reliability assessment considering actual material properties and environmental influences. In the paper probabilistic procedure allowing for consideration of new information on structural conditions obtained by inspections and tests is proposed. A general approach to specification of target reliability levels is suggested using principles of total cost optimisation. The proposed procedures are applied in the assessment of a generic member of a heritage building. It appears that target reliability levels are primarily dependent on costs of safety measures and consequences of failure including loss of the cultural heritage value.

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