

Application of Italian Guidelines for Existing Bridge Management

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Abstract : The “Guidelines for Risk Classification, Safety Assessment, and Structural Health Monitoring of Existing Bridges” were recently approved by the Italian Government to define technical standards for managing the national network of existing bridges. These guidelines provide a framework for risk mitigation and safety assessment of bridges, which are essential elements of the built environment and form the basis for the operation of transport systems. Within the guideline framework, a workflow based on three main points was proposed: (1) risk-based, i.e., based on typical parameters of hazard, vulnerability, and exposure; (2) multi-level, i.e., including six assessment levels of increasing complexity; and (3) multirisk, i.e., assessing structural/foundational, seismic, hydrological, and landslide risks. The paper focuses on applying the Italian Guidelines to specific case studies, aiming to identify the parameters that predominantly influence the determination of the “class of attention”. The significance of each parameter is determined via sensitivity analysis. Additionally, recommendations for enhancing the process of assigning the class of attention are proposed.

Keywords : bridge safety assessment, Italian guidelines implementation, risk classification, structural health monitoring

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