

RELIABILITY ASSESSMENT OF EXISTING CONCRETE BRIDGES

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Abstract: The remaining working life of an existing reinforced concrete bridge is analysed considering the serviceability limit states of crack width. Two new models of crack width provided Eurocode EN 1992 and in the Model Code 2010 are applied. The probabilistic methods of structural reliability are used for assessing the crack width limits and remaining working life of existing concrete bridges. It appears that the initial reliability with respect to the serviceability requirements resulting from the original design of the bridge seems to satisfy the required target reliability level recommended in Eurocodes. However, the reliability index significantly decreases with the reduction of the reinforcement area due to corrosion.

Keywords: existing bridges, working life, failure probability, crack width

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