

Common pathologies in RC bridge structures: a statistical analysis

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ABSTRACT

One of the main tasks in bridge engineering is to maintain the existing bridge stock according to current and predicted traffic and safety requirements. Bridges deterioration commonly occurs due to a wide variety of pathological factors, with origin in, for example: unexpected traffic loads, vehicle impacts, environmental factors, earth movements, chloride attack, carbonation effect, lack of maintenance, de-icing salts, degradation of the drainage systems, pavement quality. Considering this, a statistical analysis of the most common pathologies in bridge structures, their origin and consequences, was carried out. This analysis was performed considering the pathologies for the overall structure, and for each bridge component. A total of 85 reinforced concrete bridges, representative of the bridge stock in Portugal, were analyzed. Additionally, a comparison of the obtained results with a similar study for Germany was developed. The main differences between the results obtained for each country within this study are pointed out.
