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Electrical Based Sensors and Remote Monitoring System for Assessing the Corrosion Related Activity in Concrete at Hangzhou Bay Bridge

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Concrete structures in marine environments are subjected to cyclic wetting and drying, corrosion of reinforcement due to chloride ingress and biological deterioration. In order to assess the quality of concrete and predict the corrosion activity of reinforcing steel in concrete in this environment, it is essential to monitor the concrete continuously right from the construction phase to the end of service life of the structure. In this paper a novel combination of sensor techniques which are integrated in a sensor probe is used to monitor the quality of cover concrete and corrosion of the reinforcement. The integrated sensor probe was embedded in different concrete samples exposed to an aggressive marine environment at the Hangzhou Bay Bridge in China. The sensor probes were connected to a monitoring station, which enabled the access and control of the data remotely from Belfast, UK. The initial data obtained from the monitoring station reflected the early age properties of the concretes and distinct variations in these properties were observed with different concrete types. Corresponding author's email: s.srinivasan@qub.ac.uk

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Ключевые слова:

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