

Applications of embedded sensors for in-situ corrosion monitoring in subsea tunnel

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Steel corrosion in reinforced concrete structures, particularly under coastal marine environments, is the main factor which influences the durability of concrete structures. In order to in-situ and long-term monitor corrosion of steels in reinforced concrete structures in Xiamen Xiangnan subsea tunnel of China, the commercial CorroWatch multisensors and the self-made ladder sensors were embedded in the selected critical concrete structures during the constructions of subsea tunnel. Correlations among the measured parameters and corrosion situation are discussed based on the real-time measured data collected for three years. Problems associated with the heavily operated Xiamen Xiangnan subsea tunnel of China are also pointed out.