

Use of polypropylene fibers to enhance deterioration resistance of concrete surface skin subjected to cyclic wet/dry sea water exposure

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Abstract: This paper presents results of a testing program in which the effects of addition of polypropylene fiber to concrete mix and adequate concrete curing in enhancing the deterioration resistance of concrete surface skin subjected to cyclic wet/dry seawater exposure have been evaluated. The results indicate that the addition of polypropylene fibers effectively retards the deterioration process of the surface skin of the concrete specimens cured in hot weather environment. Tests were carried out on 30 concrete slab specimens of dimensions $75 \times 375 \times 750$ mm ($3 \times 15 \times 30$ in.), made with and without polypropylene fibers. Some specimens were cured under laboratory-controlled conditions and were subjected to the wet/dry cycles for 85 weeks, while others were cured under field conditions and were subjected to the same cycles for 50 weeks.