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Durability Performance of Concrete Incorporating Spent Fluid Cracking Catalyst

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Abstract: The petrochemical industry uses, in its fluid catalytic cracking units, zeolites as catalysts. After several cycles of use and regeneration, the fluid cracking catalyst becomes spent (SFCC). Given its chemical composition (aluminosilicates), SFCC may be used as admixtures in mortar and concrete production. The aim of this study was to investigate the influence of SFCC in durability related properties of concrete, namely in air permeability, capillary suction, carbonation and chloride resistance, considering also its simultaneous use with corrosion inhibitors. An experimental program was developed comprising four concrete mixes, sampled in two batches. The water-binder (cement+SFCC) ratio and the plasticizer dosage were kept constant. Statistical analyses of results were performed. Although no synergic effect of the combined use of SFCC and corrosion inhibitor was

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