

عنوان مقاله:

Accelerated Testing for Evaluating the Reliability of FRP Bonded to Concrete and Steel Under Severe Environments

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خلاصه مقاله:

The research presented herein focuses on accelerated degradation testing techniques, and discusses the life prediction of identical samples of carbon FRP composites bond to concrete and steel subjected to severe environments. This paper presents some results of an on going accelerated testing program on the bond reliability of FRP to concrete and steel after being placed in simulated severe environments. The environments simulated consist of exposure to extreme temperatures greater than 120°F as in the desert of Arizona, chemicals with pH=3, pH=12, and pH=8.3 for respectively, acid rain or sewage, hydrated cements, and seawater, and hot, humid environments. The experiments consist of testing up to 2400 unidirectional carbon coupons attached to either steel or concrete blocks. The lap shear tests will evaluate the strength of the coupons, as well as, the bond stress distribution and bond shear strength as related to different exposure times. Results based on the initial tests show the excellent durability of FRP attached to concrete or steel, even in the most severe environments

کلمات کلیدی:

accelerated testing, life prediction, severe environments, fiber reinforced plastics, concrete, steel

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