11th INTERNATINAL SYMPOSIUM ON FIBER REINFORCED POLYMERS FOR REINFORCED CONCRETE STRUCTURES (FRPRCS11)

Title: Durability Issues of FRP for Civil Infrastructure

By

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Abstract : Application of fibre reinforced polymer (FRP) composites in civil structures have increased significantly in recent years. The durability of these materials, especially under severe environmental conditions, is now recognized as the most critical topic of research. The lack of data on durability of FRPs is a major obstacle to their acceptance on a broader scale in civil engineering. This paper summarizes the most significant research work published on the durability of FRPs related to external strengthening or internal reinforcement of concrete members. Their durability in both these types of applications has been extensively investigated in the past two decades. A comprehensive review of the literature including the degradation mechanisms, accelerated tests for long-term performance, and the effects of environment parameters such as moisture, salt solutions, ultraviolet, alkaline on the durability of FRPs will be presented and discussed. In addition, strength and environmental reduction factors adopted by current international design codes and guides will be reviewed.