

Influence of High Temperature and Humidity on Polymer Composites Used in Relining of Sewage

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Abstract : Some of the main causes for degradation of polymeric materials are thermal aging, hydrolysis, oxidation or chemical degradation by acids, alkalis or water. The first part of this paper provides a brief summary of advances in technology, methods and specification of composite materials for relining as a rehabilitation technique for sewage systems. The second part summarizes an investigation on frequently used composite materials for relining in Sweden, the rubber filled epoxy composite and reinforced polyester composite when they were immersed in deionized water or in dry conditions, and elevated temperatures up to 80°C in the laboratory. The tests were conducted by visual inspection, microscopy, Dynamic Mechanical Analysis (DMA), Differential Scanning Calorimetry (DSC) as well as mechanical testing, three point bending and tensile testing.

Keywords : composite, epoxy, polyester, relining, sewage

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