
Durability estimations of the rehabilitation method for sewer manholes using a high density polyethylene sheets with studs

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In the construction method used for the rehabilitation of sewer manholes, a sheet with studs is inserted into a plastered mortar that has not yet hardened. In order to confirm the durability in a sulfuric acid environment, a sulfuric acid immersion test of the sheet was conducted under accelerated conditions and for the deterioration resistance to long-term vibration under the road, an acceleration test was performed under repeated load assuming a manhole cross section under the road. Under the sulfuric acid environment assumed 50 years later, the bending stress and tensile stress decreased slightly, and the flexural modulus and tensile modulus also exceeded the design values. In addition, the deterioration resistance assuming the state of being installed under the main road for 50 years was 17.8% lower than that of the blank specimen in the adhesive strength between the mortar and the base material of the manhole, but the result fully satisfied the standard value.
