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The Performance and the Induced Rebar Corrosion of Acrylic Resins for Injection Systems in Concrete Structures

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Abstract : Commercially available methacrylate and acrylamide-based acrylic resins for injection in concrete systems have been tested with respect to the sealing performance and the rebar corrosion. Among the different resins, a methacrylate-based type of acrylic resin significantly inhibited the rebar corrosion. This was mainly caused by the relatively high pH of the resin and the resin aqueous solution. This resin also exhibited a relatively high sealing performance, in particular after exposing the resin to durability tests. The corrosion inhibition behaviour and the sealing properties after the exposition to durability tests were maintained up to one year. The other resins either promoted the corrosion of the rebar and/or exhibited relatively low sealing properties.

Keywords : acrylic resin, sealing performance, rebar corrosion, materials
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