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Suitability test for concrete screws with regard to hydrogen induced brittle fracture

Aim of the project was the development of a testing procedure with regard to hydrogen induced brittle fractures of concrete screws. Hydrogen induced brittle fractures may occur in corrosive environment within a short time. Hydrogen permeation measurements and and potentiostatic polarization experiments with statically loaded concrete screws were performed. To detect sensitive types of concrete screws, a static load test is proposed, the screw being placed in concrete and polarized potentiostatically to a potential of –1,2 V vs. a saturated calomel electrode.