

Flexural behaviour of reinforced beams by using corrosive rebar¹

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Abstract

At this research, the effect of pre corrosion rebar on the flexure behaviour of beams is investigated. The corrosion is induced at rebar, before using for reinforcing beams, by two methods. The first method is putting rebar in water with 10% salt concentration inside lab. The second method is surrounding rebars by salt outside the lab and leaving them to weather changing, like rain and different relative humidity. The second method is given more corrosion rate compared to first method. The beam are subjected to four loading test. Three ages of beams are investigated which are 30, 90 and 120 days. Two size of rebars (10 mm, 12 mm) are exposed to corrosion and used at this research. The results are shown that high corrosion rebar of 10mm carried maximum load with maximum deflection at mid span for all ages. The percentage of increasing load for this corrosion bar is 144.3%, 141.7%, 124.3% for 30 days, 90 days and 120 days respectively compared with low corrosion of same bar size. This percentage is 126.1%, 127% for 30 days and 120 days respectively compared with no corrosion of same bar size.