

Design Method for Corrosion of Reinforcing Bars in Concrete Structures by Water Penetration and Carbonation Progress

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The effect of water and carbonation on the corrosion of reinforcing bars was investigated by field surveys on members with different levels of water supply. In addition, a design method for corrosion of reinforcing bars due to water penetration was verified by comparison with the cover depth where spalling had occurred, or the design cover depth determined by consideration in terms of carbonation. Even if the un-carbonation depth (=cover depth – carbonation depth) becomes less than 10 mm, when water is not supplied, the risk of the spalling of concrete is low and the corrosion rate of the reinforcing bars is slow, thus, it is important to consider the impact of water supply for the reinforcing bars. It was also confirmed that the design method based on corrosion of reinforcing bars due to water penetration is applicable.