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Evaluation of the corrosion potential in armed concrete as a function of armature covering

Lázaro Rodrigues Penna¹, Maria Luísa Freitas dos Santos Honório¹, João Victor Laurindo Siqueira¹, Diogo Pereira dos Santos Kropff

(1) Scientific Initiation Volunteer Students of PROVIC/ISECENSA - Civil Engineering Course; (2) Adviser Researcher - Research Laboratory in Management and Technologies in Civil Construction - GETECC/ISECENSA - Civil Engineering Course - CENSA Higher Education Institutes – ISECENSA, 139, Salvador Correa Street, Campos dos Goytacazes, RJ, Brazil

In concrete structures, it is not uncommon to observe the presence of pathological problems that can often be associated with high temperature range, inadequate execution of works, inefficient projects, materials without quality control, unprepared labor, harmful external agents, among others. Among the pathological manifestations of hardened concrete is the corrosion of steel reinforcement, directly influencing the durability and strength of concrete structures. The object of this research is to analyze the influence of concrete cover thickness and chloride contamination on the potential readings of reinforcement corrosion. Since the cover thickness has a direct influence on the potential readings in chloride contaminated concrete. The corrosion potential measurement method will be used as an electrochemical tool to assist in the corrosion monitoring of reinforced concrete structures. As a standard for the evaluation results, the corrosion potential range recommended by ASTM C 876: 2015 and its relationship with the possibility of corrosion is normally used. With the results obtained during the application of this method, it is possible to identify regions where the reinforcement presents corrosion and how the process of steel depassivation is distributed in the region under study. Therefore, it is expected to verify the influence that the concrete cover has on chloride contamination and also influence the values of the corrosion potential.

Keywords: corrosion; concrete; chloride; covering; durability.

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