Short Communication

Corrosion Study in Reinforced Concrete Made with Mine Waste as Mineral Additive

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This work studies an alternative to reuse mine waste materials in reinforced concrete. It pretends to determinate experimental parameters of corrosion resistance in different systems of concrete assesed, (with 5%, 10% y 15% recycled material instead of cement Portland) in comparison to conventional reinforced concrete. Specimens of concrete were exposed in a corrosive environment using a salt spray chamber. At the moment of assesing of the steel-concrete system in relation to exhibition time were used techniques half-cell potential and electrochemical impedance. It is worth mentioning that the half-cell potential indicates specimens with mine waste material does not suffer a significant change in comparison to conventional concrete system in relation a monitoring time. The results obtained by Electrochemical Impedance Spectroscopy technique show systems with mine waste material presents a slight diminish in the values of corrosion resistance and the total impedances does not show a significant change between to conventional concrete and a specimen with 10% of mine waste material.

Keywords: Corrosion, concrete, mine waste, electrochemical impedance, half-cell potential.

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