

## Zamzam Water as Corrosion Inhibitor for Steel Rebar in Rainwater and Simulated Acid Rain

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**Abstract :** Corrosion inhibitors are widely used in concrete industry to reduce the corrosion rate of steel rebar which is present in contact with aggressive environments. The present work aims to using Zamzam water from well located within the Masjid al-Haram in Mecca, Saudi Arabia 20 m (66 ft) east of the Kaaba, the holiest place in Islam as corrosion inhibitor for steel in rain water and simulated acid rain. The effect of Zamzam water was investigated by electrochemical impedance spectroscopy (EIS) and Potentiodynamic polarization techniques in Department of Civil Engineering - IUT Saint-Nazaire, Nantes University, France. Zamzam water is considered to be one of the most important steel corrosion inhibitor which is frequently used in different industrial applications. Results showed that zamzam water gave a very good inhibition for steel corrosion in rain water and simulated acid rain.

**Keywords :** Zamzam water, corrosion inhibitor, rain water, simulated acid rain

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