**Engineering Editor2** <editor.eng2@su.edu.krd>

**To:**Dr Shawnim Rashid Jalal

Tue, Sep 1 at 11:05 PM

Dr Shawnim Rashid Jalal: Prof. Shawnim

This regards the manuscript "The Environmental Effect on Fatigue Behavior of Epoxy Coating Used for Water Tanks," which is under consideration by Zanco Journal of Pure and Applied Sciences.

Following the review of the previous version of the manuscript, the authors have now submitted a revised version of their paper. We would appreciate it if you could help evaluate it.

Please log into the journal web site by 2020-09-22 to indicate whether you will undertake the review or not, as well as to access the submission and to record your review and recommendation.

The review itself is due 2020-09-22.

Submission URL: <https://zancojournals.su.edu.krd/index.php/JPAS/reviewer/submission?submissionId=3713&reviewId=2650&key=2ShTTnMb>

Thank you for considering this request.

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"The Environmental Effect on Fatigue Behavior of Epoxy Coating Used for Water Tanks"

Abstract

The fatigue limit and lifetime of epoxy based coatings may be affected by various factors especially the environmental effects. In this paper, evaluate the effect of air, potable water media and pollution gases (CO2, H2S and SO2)on the fatigue performance of two types of epoxy based coatings (polyamine and polyamide epoxy based coatings) used as lining for potable water storage tanks. The fatigue test apparatus is assembled in the laboratory and utilized for testing. Different factors are discussed including absorption, adsorption, and reaction of environmental gasses with polyamine and polyamide coating surfaces. In addition, the influence of porosity the epoxy based coatings are experimentally determined and its effects on fatigue limit and fatigue life are discussed in detail. As a result the coatings applied improve the fatigue resistance of stainless steel. The fatigue limits of both types of coatings tested in potable water are lower compared with the value obtained when tested in air or gases environments. The fatigue limit of polyamine coating is greater than the polyamide coating. The microscopic inspection indicated that there is a different mechanism for initiating fatigue crack, and the test environments are effected in the nature of fracture surface.