

## عنوان مقاله:

Investigating the Effect of Explosive Welding Variables on the Corrosion Behavior of Explosive Joint of Two-Layered Inconel 718-AISI H13 Hot Work Tool Steel Plates in Salty Environment

## محل انتشار:

مجله مواد دوستدار محیط, دوره 2, شماره 2 (سال: 1397)

تعداد صفحات اصل مقاله: 7

## نویسندگان:

A. Norbakhsh - *Department of Materials Engineering, Bandarabbas Branch, Islamic Azad University, Bandarabbas, Iran*

M. R. Khanzadeh GharahShiran - *Center for Advanced Engineering Research, Majlesi Branch, Islamic Azad University, Esfahan, Iran*

A. Saadat - *Center for Advanced Engineering Research, Majlesi Branch, Islamic Azad University, Esfahan, Iran*

H. Bakhtiari - *Department of Materials Engineering, Najafabad Branch, Islamic Azad University, Najafabad, Iran*

## خلاصه مقاله:

In this research, the corrosion behavior and microstructural changes in two-layered Inconel 718- AISI H13 steel plates after the explosive welding process was investigated. The results of polarization curves showed that by comparing the first series of samples (explosive charge 2 and standoff distance of 3 mm), the third series (explosive charge 1 and standoff distance of 3 mm), and the fifth series (explosive charge 3 and standoff distance of 3 mm), it can be found that by increasing the explosive charge and the reduction of concentration at the intersection, the corrosion current density has been reduced. The metallographic results show a wave- vortex-like intersection due to the increased thickness of the explosive charge. The results of hardness testing also showed that when approaching the intersection of joint, the hardness in both samples has been increased. The impedance test results for the welded samples showed that the highest polarization resistance ( $9407 \Omega \text{ cm}^2$ ) was found for the fifth sample series (explosive charge 3 and standoff distance of 3 mm), followed by the second sample ( $8341 \Omega \text{ cm}^2$ ) (explosive charge 2 and standoff distance of 4 mm), and the lowest polarization resistance was seen in the third series sample.

## کلمات کلیدی:

Explosive Welding, Corrosion, Immersion Test, Polarization Test, Electrochemical Impedance Test

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/897100>

