

## **Cracking Phenomenon in Spot Welded Joints of Austenitic Stainless Steel**

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### **ABSTRACT**

The spot welds nugget cracking of austenitic stainless steel at temperatures between 700°C - 1010°C was investigated. Traditionally, the cracks have been observed around the spot nugget in welded temperature. Actually, these cracks are developed due to incomplete melting and inappropriate electrode pressure, which causes an expulsion of molten metal. These cracks start to grow and cause either the interface or plug fracture according to the loading type. In this work, the micro-cracks in the weld nugget were indicated for this type of steel at elevated temperature. Cracks appear in a certain range of temperature; about 700°C - 750°C. The cracks like defect and cavitations were presented. According to the fracture mechanics point of view, these cracks reduce the mechanical strength. Therefore, these cracks have to be taken into account with a certain precaution. Moreover, considering the working temperature and reducing the element may develop ferrite particles.