

## **Investigation of the Thickness Effect on the Fatigue Strength Calculation**

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### Abstract

The local stress concentrations around the discontinuities and the weld defects are fairly common. In this study, the investigation of thickness and stress concentration effects on fatigue strength (FAT) have been studied. The fracture mechanics tools and fracture analysis code (Franc2D) were used to consider these effects. The FE simulation of welded joints will provide a tool to determine the regions of stress concentration which in turn determine the crack initiating and FAT. Unfortunately, these tools are unable to calculate FAT at higher thicknesses. Therefore, the crack length was corrected with a suitable scale. The determination of fracture toughness values without the need to undertake experiments have been presented.