

# Effects of Boundary Conditions and Operating Parameters on Temperature Distribution during the Friction Stir Welding Process

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**Abstract:** This work deals with a numerical simulation of the friction stir welding FSW process of alloy material AA2195-T8. A 3D transient thermal model for simulating the heat transfer phenomena in the welding phase is applied. In this model, the FSW tool is considered as a circular heat source moving in a rectangular plate having a cooling surface and subjected to nonuniform and non-homogeneous boundary conditions. The thermal problem is solved using the finite element method as part of a Lagrangian form

**Keywords :** Friction Stir Welding, Heat transfer, AA2195-T8