

### **Thermal Deformation Analysis of Gas Pressure Welding of Rail**

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We developed thermal deformation analysis model by using numerical calculation in order to quantitatively understand deformation behavior of gas pressure welding of rail. We found that the deformation degree at the center of the rail base and the jaw part of the rail head are smaller than that of other parts. Furthermore, we also identified that the hot cracks occur at their parts in the simulative tests of the crack. This paper describes the developed thermal deformation analysis model of gas pressure welding of rail and its validation test results.