عنوان مقاله:

Finite Element Assessment of Residual Stress and Distortion for T-Joint-fillet and butt-weld joints using the Element Birth Technique

محل انتشار:

اولین کنفرانس بین المللی و هفتمین کنفرانس ملی مهندسی ساخت و تولید (سال: ۱۳۸۴)

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خلاصه مقاله:

This paper reports the finite element modeling of the electric-arc welding process for the assessment of the resultant residual stresses for two specific geometries. The simulation procedure was first carried out for a Butt-Weld geometry for which two different methods, i.e. the heat-flux-input and the prescribed-temperature, were used to obtain the temperature field. The obtained results were compared and the accuracy of these two methods was investigated. Next, the method of prescribedtemperature was used to obtain the temperature field induced by arc welding in a Tjoint- fillet weld and, conducting a thermo-elasto-plastic analysis, the residual stress distribution and distortions were computed. To simulate the effect of addition of the filler material during welding, the element birth technique was used. The results obtained for these two geometries were compared with similar results reported in .the literature

کلمات کلیدی:

Welding, Heat Source, Residual Stress, Distortion, Butt-Weld, T-Joint

لینک ثابت مقاله در پایگاه سیویلیکا: