7th African Conference on Non Destructive Testing (ACNDT) & the 5th International Conference on NDT and Materials Industry and Alloys (IC-WNDT-MI)

2016

Effect of resistance spot welding parameterson mechancial behavior of thin sheet

BENACHOUR Mustapha;, LARBI CHERIF Mohamed

Abstract : Different welding methods have been developedfor joining stainless steels; however, resistance spot welding is thepromising method for welding of thin sheets of these steels.Resistance spot welding is a non-solder process that uses thecombined effect of mechanical pressure and an electric currentpassing through the parts. In this study, commercially 304Lstainless steel sheets were welded by resistance spot welding atvarious welding parameters (welding effort, welding times andintensity of current welding. The results showed that theparameters, effort and welding time have little effect onmechanical properties compared with respect to the effect of theintensity of the current welding. The experimental results showalso that the welding current is an important parameter forjoining structures and its mechanical strength. The hardness andexternal aspects of spot were carried out in order to examine theinfluence of welding parameters on the welded joints. Hardnessmeasurement results indicated that welding nugget had thehighest hardness and this was followed by the heat-affected zoneand the base metal.

Keywords : resistance spot welding, hardness, mechanical strength, stainless steel, electric current, welding time