

ALUMINIUM DEFORMATION MODELLING IN CASE OF COLD-WELDING ON COGGED SURFACES

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ABSTRACT

Cold-welding on cogged surfaces can be performed by pressing a piece of aluminium on a cogged surface of a component made up of a more rigid, hardly mouldable material. The components have to be perfectly cleaned before being pressed. There have been made welded joints between aluminium (the soft, easily mouldable component) and copper, brass, carbon steel, stainless steel (the harder/more rigid component, cogged). Welding has been performed by deforming only the aluminium component with a degree of deformation of 20...30%. The numeric modelling of the aluminium component modeling has allowed studying the state of the tension and of the local deformations in the welded joint. Thus, the correct technological parameters have been established in order to avoid problems such as cracks or insufficient joints/ weak joints.

KEYWORDS: Numeric modelling, cold welding, aluminium joints.

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