Welding assembly of thin plates of 7075 T6 aluminium alloy

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Abstract: Assembly by welding of aluminum alloys, especially of structural hardening, is one of the major challenges of designers and manufacturers demanding a structural alleviation. In this work, an experimental analysis of the mechanical behavior and microstructural evolution of thin plates in aluminum alloys 7075 T6 welded by the conventional method TIG. A notable microstructural change occurred in our materials by the thermal effect, resulting in heterogeneous mechanical properties. Break is privileged in the connecting region, which is characterized by a columnar structure, contributing to reduce the ability of the material to deform plastically.

Keywords: welding, TIG, aluminium alloy, mechanical properties