Selection of the Proper Diffusion Welding Parameters for the Heterogeneous Joint Ti Grade 2/AISI 316L

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The creation of the heterogeneous joints at materials with the different physical and mechanical properties is always problematic. As one of methods by which can be achieved very good results is there a diffusion welding. The aim of paper is to show the possibilities of diffusion welding utilization at creation the heterogeneous joints between Titan grade 2 and high-alloyed austenitic steel AISI 316L. The fundamental theory of diffusion and also scheme and realization of experimentally created diffusion welds in the thermal-mechanical simulator Gleeble® 3500 is described in the article. Furthermore, procedure of technological parameters selection when optimization of heterogeneous joint strength properties including metallographic evaluation are taken into account, are also presented.

Keywords: diffusion welding, Gleeble® 3500 and 3800, 316L steel, Ti Grade 2, processing parameters

Acknowledgement

This paper was prepared thanks to support from the Aktion project No. 73p7.

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Paper number: M201742
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