

## INFLUENCE OF THE WELDING PROCESS ON THE MECHANICAL PROPERTIES OF THE WELDED JOINT

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### ABSTRACT

*Laser and TIG welding processes are suitable for welding of thin sheets. Welding of heat-treatable steels causes substantial increase of the hardness in the welded joint area. The increase of hardness does not necessarily have a negative influence on the mechanical properties of the welded joint. Butt welds of 2 mm thick heat-treatable steel sheets 25CrMo4 and 42CrMo4 were welded using laser and TIG processes applying different parameters, using argon and helium as shielding gases. Nd:YAG laser was used. The testing was performed on the geometry of the welded joint, the hardness and the dynamic strength, and a comparison of the results of laser and TIG welding was carried out.*

**KEYWORDS:** Laser, TIG, heat-treatable steel, hardness, dynamic strength.

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