Influence of the Welding Process on the Martensitic and Dual Phase High Strength Steels

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The subject of the study are martensitic 22MnB5 steel and dual phase steel with the ferrite-martensitic structure, which are used in the automotive industry. The main purpose of the performed analyses is a study of strength differences in heat affected zones of the spot welding. For the needs of the strength decrease assessment, the critical layer of the heat affected area was experimentally simulated by different thermal influence procedures. The aim of the work is to determine the most suitable methodology for evaluating the local changes of the elastic-plastic material response. The yield strength and the deformation hardening are required constructions of safety carbody parts.

Keywords: Martensitic steel, dual phase steel, heat affected zones, yield strength, weld-joint fractures, indentation

References