

The Spot Weldability of Carbon Steel Sheet

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Abstract

The specimens of thickness 0.8 mm carbon steel number 1.8902 in a strip form were welded. The strips of lap joints and curved peeljoints configurations have been welded. The welding parameters such as weld current and weld time have been investigated. The relation between the weld area and the joint strength properties has been presented. The obtained results were showing that the weld joint strength and the molten area (weld nugget volume) highly increase with the increasing of weld current. Therefore, the correlation between the maximum load (joint strength) and area has been given. The reliable weldability under the tensile and shearing loading was considered. Therefore, the new limits of weldability have been presented to consider these two types of loading. Moreover, the experimental results were compared with the empirical relations that consider the sheet thickness only.