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OF YOUNG RESEARCHERS AND SCIENTISTS**

under the auspices of

Tatiana Čorejová
Rector of the University of Žilina

**SECTION 7
CIVIL ENGINEERING**

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SECTION 7 CIVIL ENGINEERING

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**SECTION 5
MATERIAL ENGINEERING
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Optimization of Welding of the Truck's Rear Axle Semi-housing

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Abstract. The welding technology of the truck's semi-housing is presented in this paper. Steels of different mechanical properties and chemical composition were tested and influence of welding on those base metals was monitored. Their weldability was first analyzed (semi-housing tube, ring and flange), then the welding procedure and filler metals were selected and finally the welding technological parameters were defined. The analytical (computational) methods, the TTT diagrams were applied for estimates of the base metals weldability, as well as the experimental methods based on hardness measurements in the weld's critical zones and analysis of their microstructure.

Keywords: Welding, truck, semi-hosing, cored wire, high strength steel.

1. Introduction

The semi-housing assembly with the ring and flange is manufactured by welding. All the necessary dimensions are being measured from the front of the smaller diameter of the semi-housing tube (Figure 1) [1]. The welding procedure assumes welding of a flange (3) (fillet joint 5×5) and then the ring (2) with the fillet weld of the same dimensions. After that the other side of the flange is welded by the fillet weld of dimensions 7×7 which is turned towards the ring. During the whole welding period positioning was done by the special tools. The positioner also has a role to prevent appearance of deformation on the assembly.

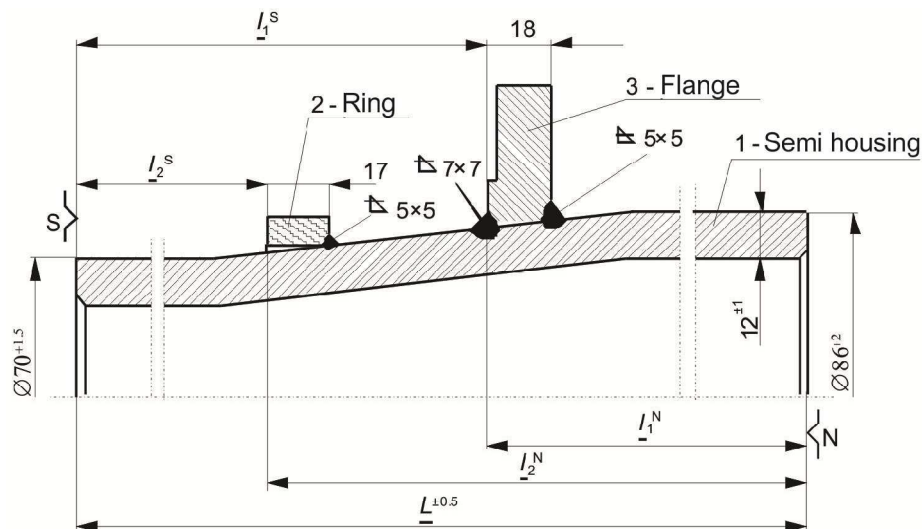


Fig. 1. Semi-housing assembly with the ring and the flange

