

# MECHANIZED WELDING OF HEAT EXCHANGER BELTS

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## ABSTRACT

The automation of the welding process for metal belts – either on generators or circular – subassembly that represents the belt of heat exchangers or of blast-pressure tanks, supposes specialized operation line.

Submerged arc welding), SF – code 121, may be considered a basic procedure for mechanized arc welding, continuously developed with respect to the complexity of SF welding products and advantages: high productivity, as well as very high quality and mechanical properties of the deposited metal. It has, however, its own downside in that it can only be applied to the horizontal PA position.

The paper presents the results obtained in SF welding of heat exchangers made from P355, P295 and 16Mo3, EN 10028 – 2 (20031)E material, with a ARMADA-1000K equipment from China, presented in fig. 1.



Fig. 1. SF welding equipment ARMADA 1000K: a) source; b) welding track

The results obtained on 6, 10, 20 mm samples have confirmed the possibility of replacing welding with a wrapped electrode (code 111) with SF welding whose hourly productivity in terms of deposited metal can reach as high as 25 kg or more, while in the same time simplifying the geometry of the welding joint.

The main technological welding parameters: voltage, current and welding speed, can be optimized depending on the thickness of the basic material and of the geometry of the welding joint.

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