

NEWS

CONSUMABLE-NOZZLE ARC-POOL WELDING OF RAILS

During 2009–2010 the specialists of the E.O. Paton Electric Welding Institute developed a special technology, equipment and welding consumables allowing carry out a high-performance quality welding of the rails of different dimension-types in field conditions. New technology, developed on the basis of the method of embedded-electrode arc welding previously proposed in PWI, was named as consumable-nozzle arc-pool welding. Its distinctive feature is usage of a self-shielded flux-cored wire fed through a longitudinal

used as a welding current source. Electricity is supplied by two-phase circuit of 380 V as well as independent diesel generator of 25 kV·A power, at that the power consumed in welding made up to 10 kV·A. An average production time of welding of R65 type rail joint makes around 20 min that allows achieving efficiency of up to 15 joints per shift. Present technology was widely used in reconstruction of a high-speed tram line in Kiev. Around 900 joints of R65, T-62 type rails and web-free tram rails were welded.



channel in special flat consumable nozzle. This allows welding at 15–18 mm and in certain cases up to 22 mm joint gap. Developed special welding apparatus ARS-4 differs by portability (weight 36 kg) and can be easily adjusted to welding of different rails. Inverter FOR-SAZh-500 of the Ryazan State Instrument Plant was

Carried out work showed that the consumable-nozzle arc-pool welding of rails is a high-performance process in comparison with manual arc-pool welding method and aluminothermic welding and can be used for welding of railway, tram and crane rails of different application.