

## SOLUTIONS FOR PRODUCTIVITY IMPROVEMENT OF THICK SECTIONS WELDING

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### ABSTRACT

*This study focuses on the optimum solutions applied to improve the productivity in case of thick sections welding by increasing the deposition rate, decreasing the weld metal volume (narrow gap welding) and improving the duty cycle. The submerged arc welding process (SAW) variants and different techniques used for the deposition rate increasing such as Twin Arc, Tandem and other combinations (tandem - twin, synergic cold wire etc) are presented in this paper.*

*Also, narrow gap welding (NGW) or narrow groove welding is presented as a great solution developed to weld thick components more economically. This welding procedure is suited for narrow joints with small angles, typically in the range of 2-20°, which requires less weld metal and less welding time to fill, comparing with conventional V, Y and X - grooves welds. That means lower heat input and smaller deposited metal volume that reduce thermal stresses which induce less residual stresses and strains. Narrow gap techniques are applied in case of submerged arc welding (SAW), gas shielded metal arc welding (GMAW) and tungsten inert gas welding (TIG) processes.*

**KEYWORDS:** Submerged arc welding, variants, productivity improvement.

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