Effect of Arc Speed Travel and Welding Current on Penetration of Submerged Arc Welding Process

SDG9 Industry, Innovation and Infrastructure

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Introduction

In industries and research organizations most widely used welding methods are shield metal arc welding (SMAW), gas metal arc welding (GMAW), gas tungsten arc welding (GTAW) and submerged arc welding (SAW). The SAW process is often preferred because it offers high production rate, high melting efficiency, ease of automation and low operator skill requirement. It was first used in industries in the mid 1930's as a single-wire welding system. The operating variables used in the SAW process results in varying heat input in the weldment. The consequence of this is the deterioration of the chemical constituents of the weld bead. Therefore, the properties of the parent metal cannot adequately match those of the weldment to ensure good performance in service, especially in low temperature services.