

ABSTRACT

An apparatus and method of short circuit arc welding two spaced ends of two pipe sections at a groove between the two pipe sections. The method and apparatus include the use of a cored metal electrode and moving the electrode toward the groove as the electrode is moved along the groove and about the outer peripheral surface of the pipe sections during the welding operation. The cored electrode is melted by an electric cycle which comprises a transfer portion and a plasma portion. The plasma portion is controlled to bridge the gap between the pipe sections for laying a root bead along the groove. The cored electrode is preferably a self-shielding electrode and includes alloying components in the core to form a root bead having a substantially similar composition as the composition of the two pipe sections. The apparatus and method has a selector to control the polarity of the individual cycles of a total welding procedure.

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