

Speaker 4



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Effects of cold-wire gas metal arc welding (CW-GMAW) process variables on energy input and deposition rate during repair of S275JR structural steel

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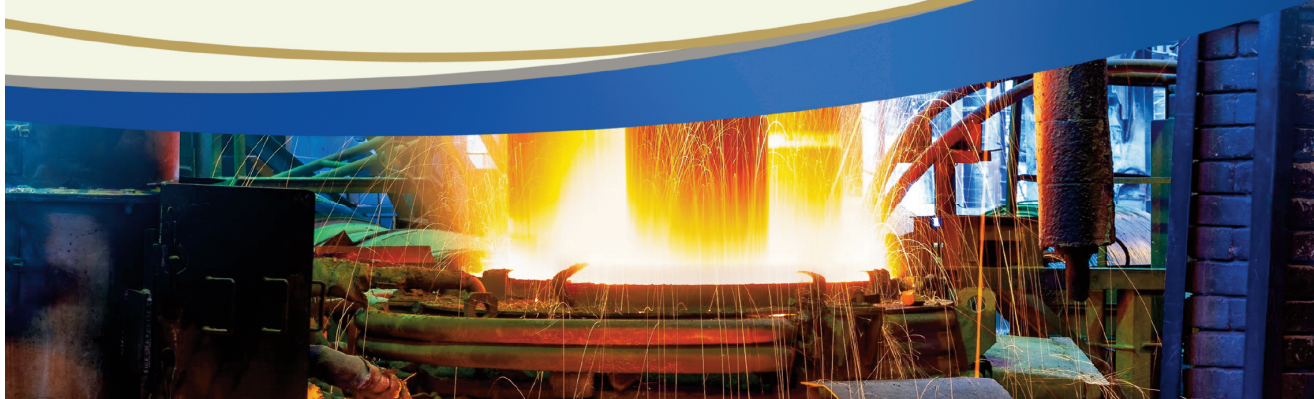
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ABSTRACT:

This study investigates the influence of adding a cold wire during gas metal arc welding (CW-GMAW) for the repair of S275JR structural steel. The research is aimed at improving repair productivity.

During weld repair, multiple passes with high energy input induce large number of thermal cycles producing huge thermal gradient on the material. This has an adverse effect on the material's properties. In this work, a systematic approach has been adopted to explore the effects of varying GMAW parameters, including welding current, voltage, travel speed, and specifically cold-wire feed speed on the energy input and deposition rate.

The findings reveal that specific combinations of CW-GMAW parameters can significantly decrease the energy input, minimize production energy, and increase the deposition rate. This suggests that with careful control of these parameters, it would be possible to do faster repair with minimal loss of integrity for critical structural steels.



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