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Title:
Welding Parameter Response to Depth Penetration—An Experimental Study

Journal:
Advanced Structures Materials, Volume 148, 2021

Document Type:
Book Chapter

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Full text link:
https://www.springerprofessional.de/en/welding-parameter-response-to-depth-penetration-an-experimental-/19151340

Scopus preview
https://www.scopus.com/inward/record.uri?eid=2-s2.0-85105669476&doi=10.1007%2f978-3-030-67750-3_22&partnerID=40&md5=f82755772fa04d043d66130123b354ff

Citation:
Ludin M.H.M., Ibrahim M.R., Razak T.A.A., Krishnan P.
Welding Parameter Response to Depth Penetration—An Experimental Study
(2021) Advanced Structured Materials, 148, pp. 263 - 270,
DOI: 10.1007/978-3-030-67750-3_ 22

Abstract:

To join ferrous and non-ferrous metals, metal inert gas welding (MIG) is an essential welding operation. The welding quality is affected by the MIG input welding parameters, and the weld bend geometry affects the weld quality. This paper describes the factors that affect the welding parameters (voltage, current, speed, and AISI 1020 steel penetration depth) during welding. The methodology involves the Taguchi technique for data acquisition and optimization of the welding parameters. Lastly, the conformations test results show the effectiveness of the analysis of penetration through the variation among the predicted and experimental values.