

모멘텀을 고려한 GMA 용접의 입상용적 이행에 대한 해석

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Analysis of Globular Transfer Considering Momentum in GMAW

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Abstract

The static force balance model (SFBM) has been used to analyze the globular transfer mode in gas metal arc welding. Although the SFBM is capable of predicting the detaching drop size in the globular mode with reasonable accuracy, discrepancy between the calculated and experimental results increases with current. In order to reduce discrepancy, the SFBM is modified in this work by considering the momentum of the molten metal flow, which is generated by the pinch pressure. The momentum increases with smaller drop size and becomes compatible to the electromagnetic force. The modified force balance model (MFBM) predicts the experimental results more accurately, and extends its application to the projected mode.

Key Words : 입상용적 모드(globular transfer mode), 모멘텀(momentum), 유동(flow), MFBM(Modified Force Balance Model)