

High-Efficiency Submerged Arc Welding for Corner Joint of Box Shaped Columns

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(1)

(2)

0.70 0.80

(3)

60mm

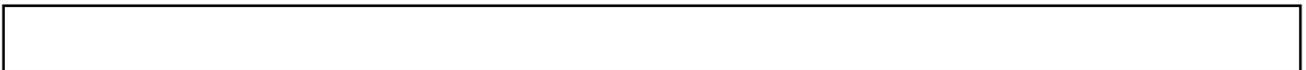
60mm

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Synopsis :

The effects of the addition of iron powder to agglomerated flux on welding performance and the optimum welding conditions for high heat input welding were investigated. The main conclusions obtained are as follows: (1) The addition of iron powder to flux increases the deposition rate and improves welding operability. (2) The cross sectional profile of the bead was influenced by the current ratio of the trailing electrode to the leading one. The optimum range of the ratio for avoiding the weld defect is ranging between 0.70 and 0.80. (3) The use of flux-containing iron powder together with the optimum welding conditions enabled the development of the high-efficiency welding techniques such as the tandem-wire one-pass submerged arc welding for the plates not thicker than 60 mm and the two pass welding for those thicker than 60 mm.

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## 要旨

厚肉ボックス柱の角継手を対象にしたサブマージアーク溶接に使

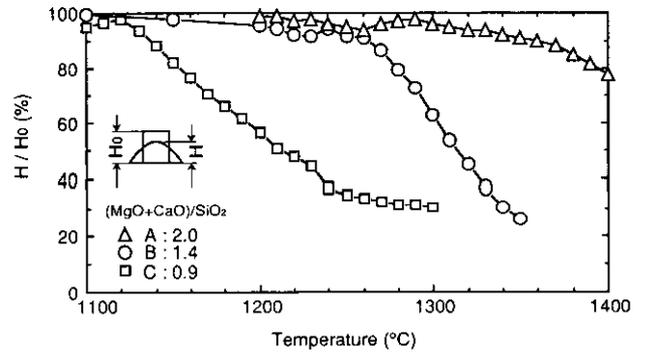
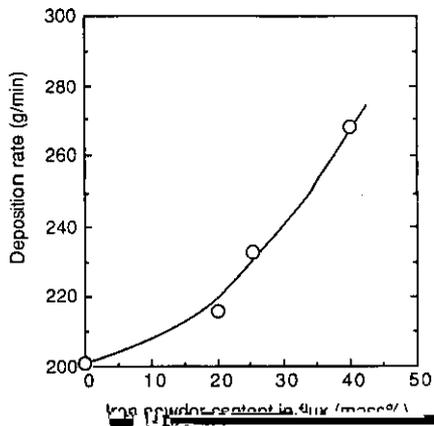
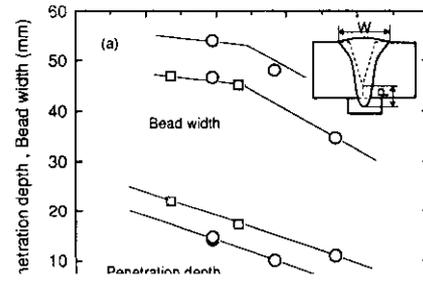


Fig. 2 Effect of the content ratio of (MgO+CaO)/SiO<sub>2</sub> on

Table 1 Welding conditions used for studying the profile of weld metal

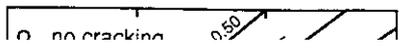
|                    |               |               |
|--------------------|---------------|---------------|
| Thickness (mm)     | 70            |               |
| Groove angle (deg) | 35            |               |
| Root face (mm)     | 15            |               |
| Leading electrode  | 2 300A<br>38V | 2 600A<br>40V |
|                    | 1 500 0 000 A | 1 050 1 000 A |





mm)

60



その、... 18 ... (9.4の平均値) ... 5.1 ... 1.5 ...