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KAWASAKI STEEL GIHO
Vol.12 (1980) No.1

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MAG-LAY Process-Electoro-Magnetic Contorolled Overlay Welding Process with ESW

p5 Û U4{ (Shozaburo Nakano) 0 Y £ (Nobôzu Nishiyama) Ę (Ö
(Toshiharu Hiro) ▯ - ¶ M4{ (Jun-ichiro Tsuboi)

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s @ " } € > * Q # Ý • + ^ 7 Á œ v 150mm r [Ñ ± [A S * x % P K ì b / 2 8 7 W b ± †
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5 ð b SUS308 (Ô P K 5 " b * x % _ 4 : # Ý K S) Ý c A f u Z , ò [6 W S

Synopsis :

縦磁場を利用したステンレスバンド肉盛溶接法
—マグレイ(MAGLAY)法—

MAGLAY Process — Electric Magnetic Controlled Overlay Welding Process with FSW

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Toshiharu Hiro

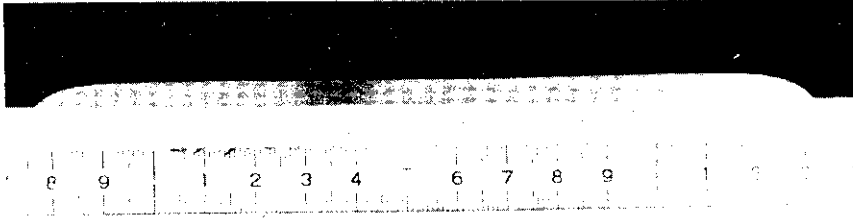
坪井 潤一郎***
Jun-ichiro Tsuboi

Synopsis:

~~Abstract of the paper is omitted here. The abstract is published in the original paper.~~

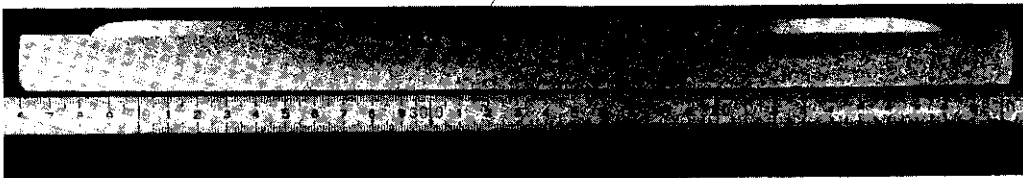
肉盛溶接技術の評価は、つぎの観点で行われる。

Transition
Arc



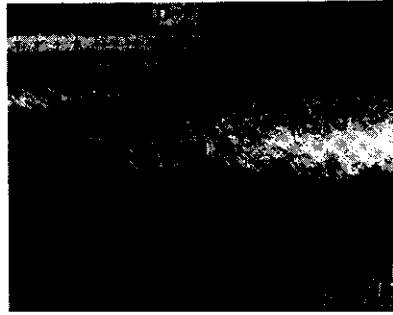
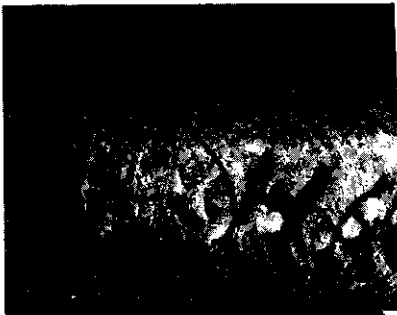
1 pass bead

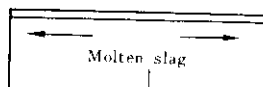
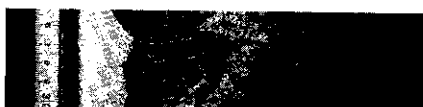
Location of overlap



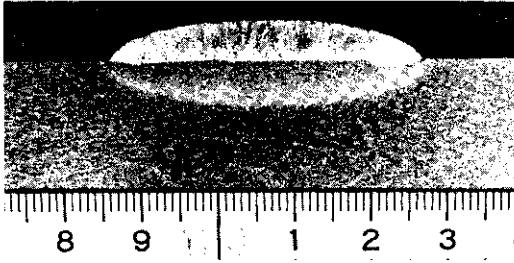
2 passes are laid in parallel

Photo. 3 Examples of transverse section of weld bead



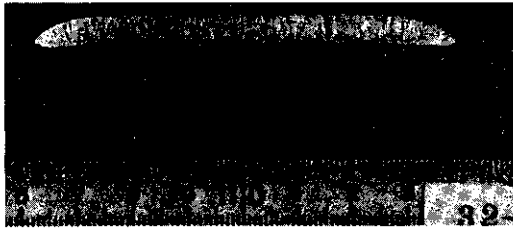


Electrode
width
37.5mm



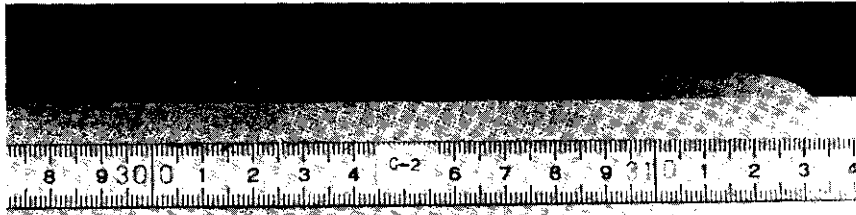
Without magnetic
control

75mm



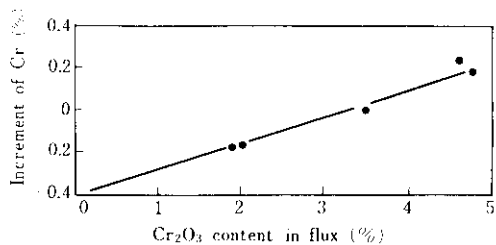
← With magnetic
control

150mm



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Photo. 7 Comparison of nonmetallic inclusion content between ESW and SAW overlay deposit metal ($\times 400$)



$$-1.25Mn_{elec} + \alpha \{3.2Cr_{base} + 3.2Mo_{base} + 1.6Nb_{base} - 2.5Ni_{base} + 4.8Si_{base} - 75(C_{base} + N_{base}) - 1.25Mn_{base}\} - 25.3 \dots (5)$$
 が得られる。さらに、フラックスにCr₂O₃を添加した場合には、(7)式を用いればよい。

$$\delta_3 = \delta_2 + 1.6(\%Cr_2O_3) \dots (6)$$

Fig. 10 Influence of Cr₂O₃ on the increment of Cr (%)

Fig. 10 Cr₂O₃添加によるCrの増加分の影響

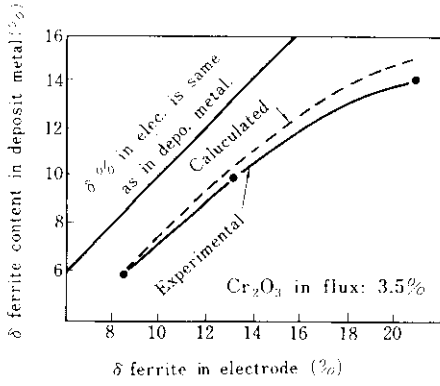
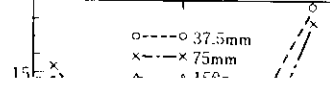
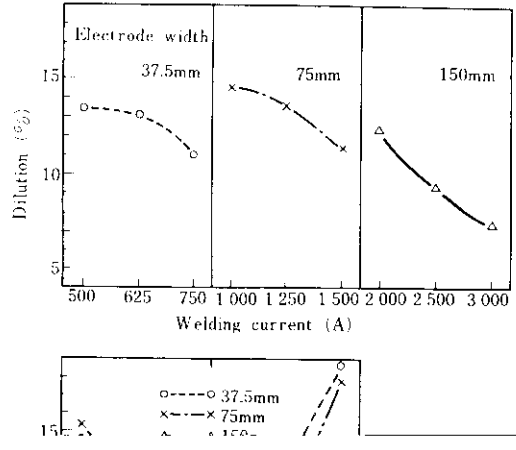
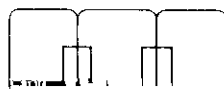


Fig. 13 Comparison of δ ferrite content in deposit metal and electrode

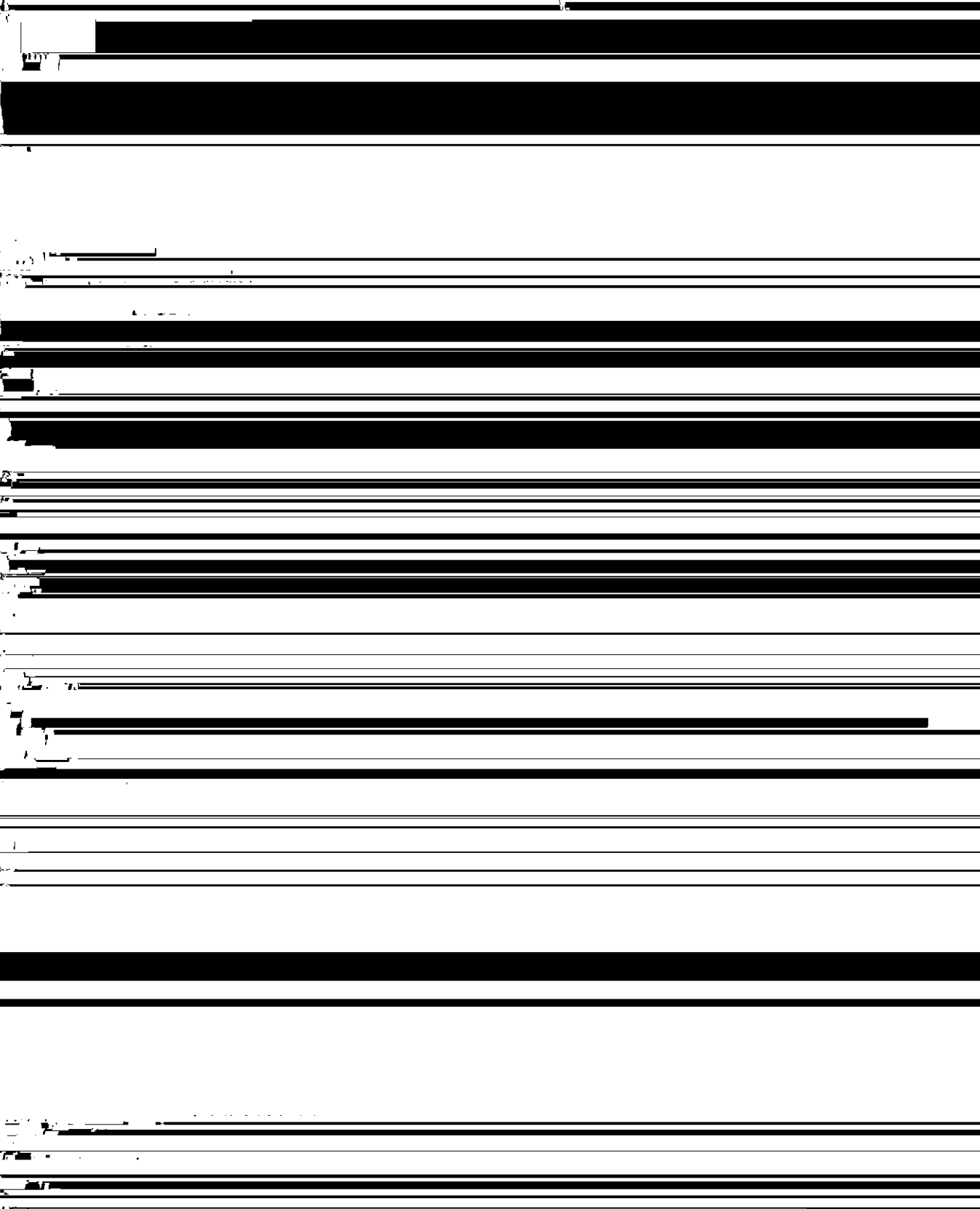


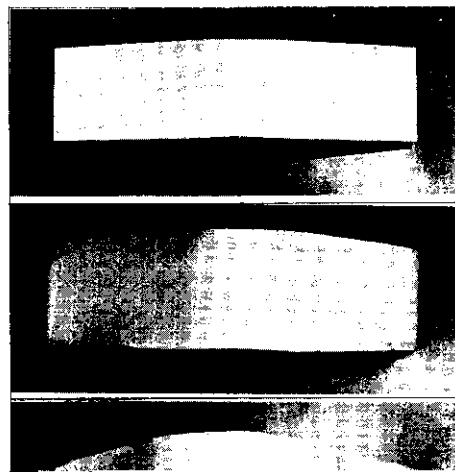
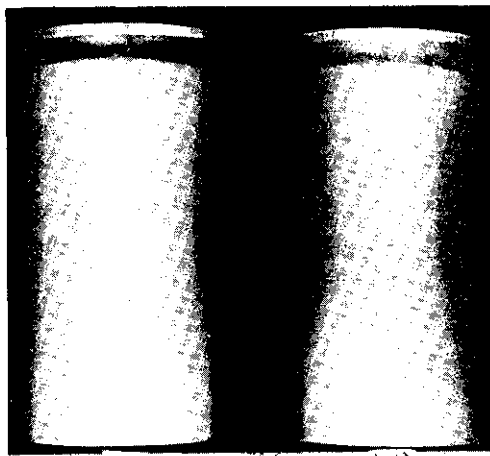
9. 溶着金属の確性試験



BL: Side bend (L)

— 110° (1) (2) (3) —





Bend El.
angle

45° 6%

90° 16%

熔融金属の流動を制御することにより、ビード重
わ部を含め きおめて高温の肉盛まで得られる

10. 註 三

またマグレイ法用に開発されたフラックスKFS-