

† q n %J / Ž } F † > ; 2 9 2 8 Z t œ l n ´

New Weathering Steels of Extremely-Low Carbon Bainitic Type with Excellent Weldability

] <sup>a</sup> T k (Kazuhiko Shiotani) d - s B (Fumimaru Kawabata) ` ± £ ? (Keniti Amano)

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† > S w<sup>2</sup> O<sup>TM</sup> 0.02mass¼ %F „ Ł Ž } F † > ; 2 9 2 8 Z & ' WCE~ + ( , € Œt œ  
l n ´ O μ ' Ł Ž ~ μ ' ´ ' ½g h i fl 570MPa š ) " X f ) ) " α - " i . ~ } F † >  
O%+ - ½1 > 4 6 8 = 2 4 z E A % " ° ! \* : 7 3 > 6

# 溶接性に優れた極低炭素ベイナイト型新耐候性鋼\*

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## New Weathering Steels of Extremely-Low Carbon Bainitic Type with Excellent Weldability



### 要旨

炭素含有量を約 0.02 mass% に低減した極低炭素ベイナイト型の  
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Conventional weathering steel

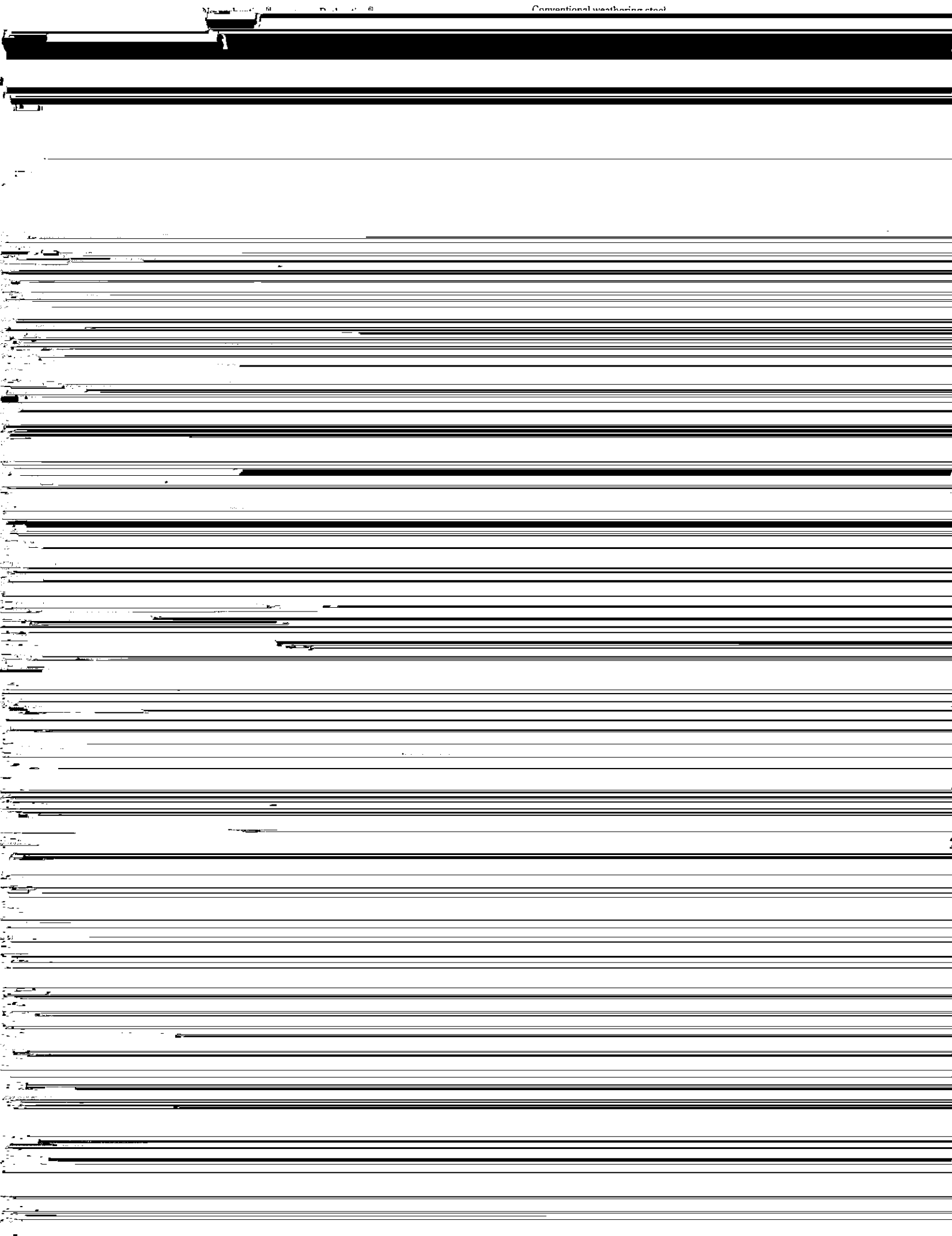
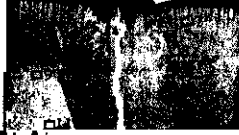


Table 1 Constituents of iron rusts for the 0.02C-2.7Ni steel and conventional one exposed in Okinawa for 1 year

	$\alpha$ -FeOOH	$\beta$ -FeOOH	$\gamma$ -FeOOH	Fe <sub>3</sub> O <sub>4</sub>	X-ray amorphous rust
0.02C-2.7Ni steel	14.4	2.4	15.6	0.6	67.0
Conventional weathering steel	14.5	2.7	26.1	0.9	55.8

(a)



Amorphous rust: No. 1~8  
 Granular  $\alpha$ ,  $\gamma$ -FeOOH: No. 9~10  
 Leaf-like  $\alpha$ ,  $\gamma$ -FeOOH: No. 11~14



### 3.1 化学成分

開発した田園用新耐候性鋼および海浜用新耐候性鋼の化学組成を Table 2 に示す。田園用新耐候性鋼は、耐候性合金元素として Ni, Cu, Cr を添加し、JIS G 3114 の成分規格に適合している。海浜用

Table 3 Mechanical properties of new weathering steels

		Thickness, <i>t</i>	Tensile properties*	V-notch Charpy properties**
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Table 4 Welding conditions for evaluation of weld performance of 490 MPa grade new weathering steel for coastal use and mechanical properties of welded joints

	Tensile test*	σ <sub>yk</sub>	V-notch Charov impact test***
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