

SA508Cl.3

Strain-Life Curve of SA508Cl.3 Pressure Vessel Steel in High Temperature Water Environment

373-1

103-16

288

, 288

SA508Cl.3

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Abstract

Strain-life fatigue tests were performed in air environment at room temperature and 288 , and in oxygenated water environment at 288 . On SA508Cl.3 steel, reduction in fatigue life in air at 288 is considered to be due to dynamic strain aging. Fatigue life in water at high temperature is lowerst. This result is considered to be synergistic effects of temperature and environments. Decrease in fatigue life is reduced with decreasing strain range. In lower strain range, longer fatigue life in water may be related to minimum threshold strain range for passive film rupture.

I.

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[1].

[2-3]. SA508Cl.3

[1,4-5].

[6].

[7].

[8-11].

[12]. SA508Cl.3

(1) 가

(2) 가 1%/s

(3) 가 150

(4)

(5) 0.003wt.%

[1,5,13].

II.

1.

가 grip

AUTOCLAVE 가

1

3.

0.5% ~ 2.4%

0.1%/s

-1

288

10MPa,

288

III.

6

가

가

가

가

가

가

가

가

가

가

IV.

1.

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2. SA508C1.3

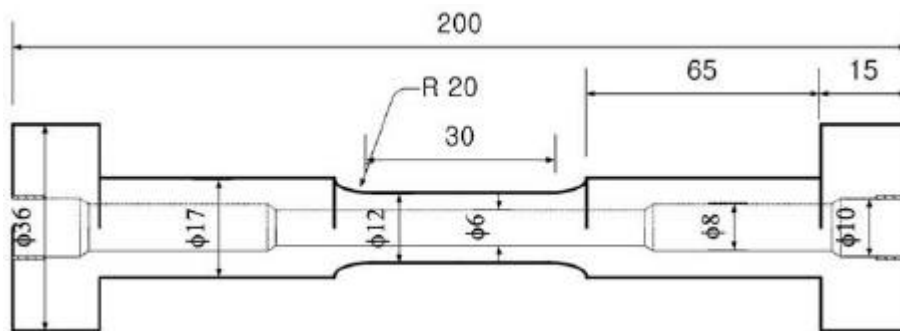
3. 가
가 가 가
가 가

2002

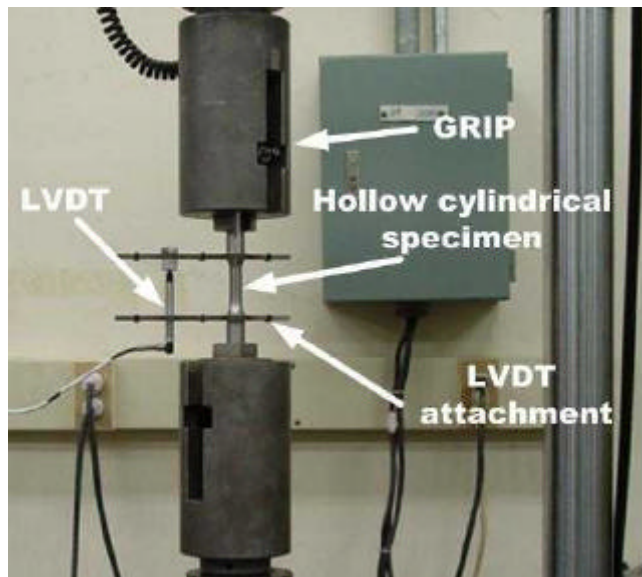
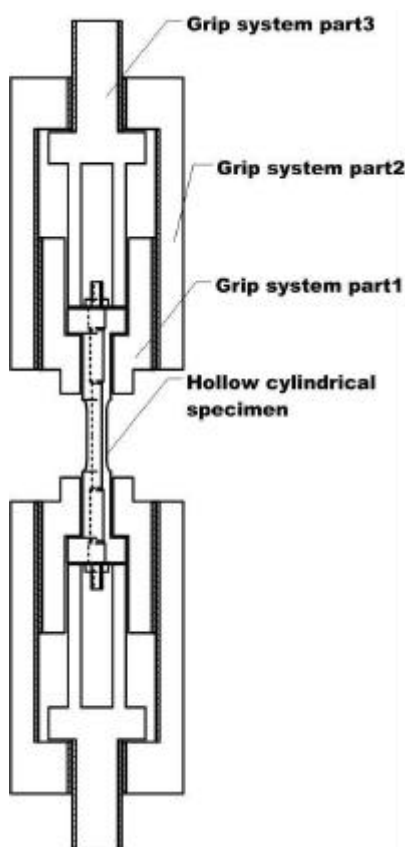
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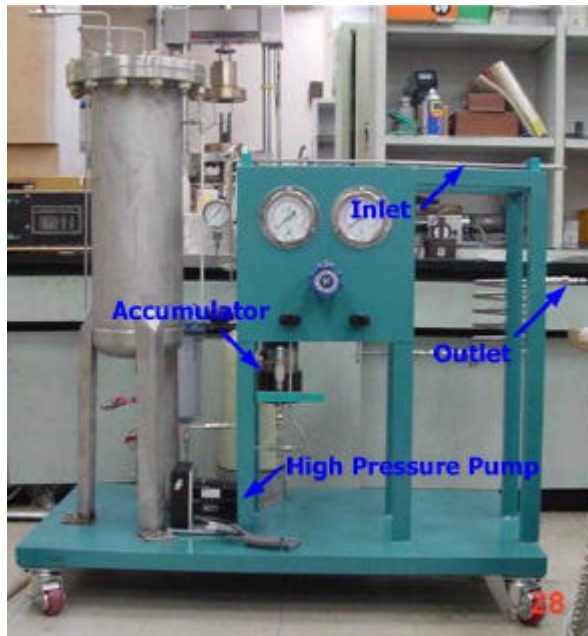
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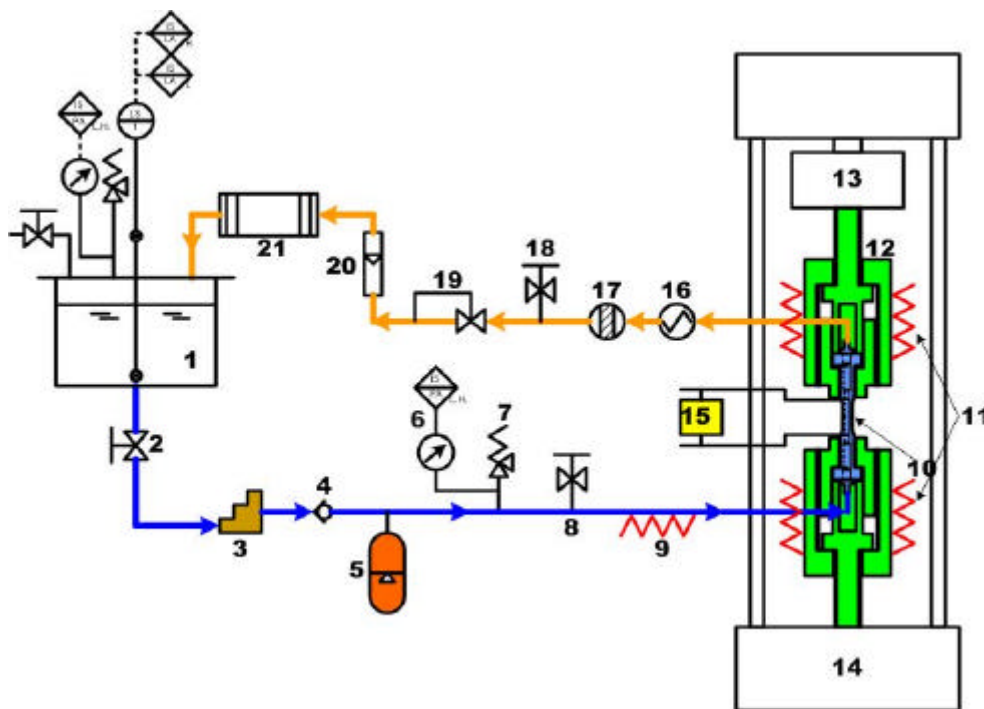
1. Hollow cylindrical specimen



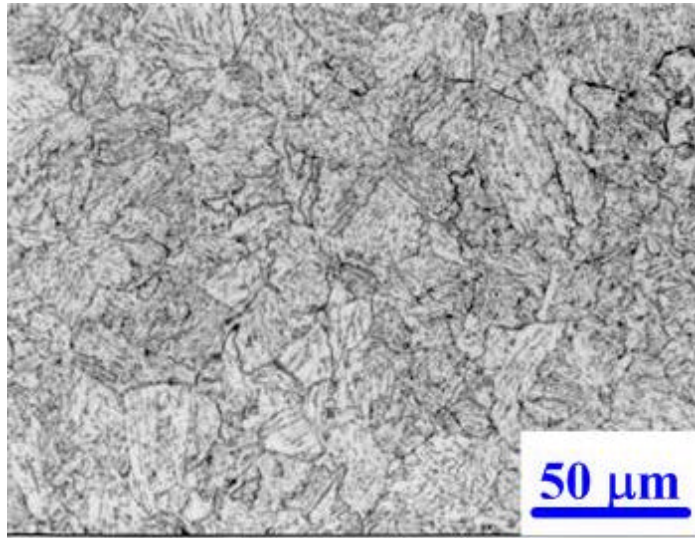
2. LVDT hollow cylindrical specimen



3. Water loop



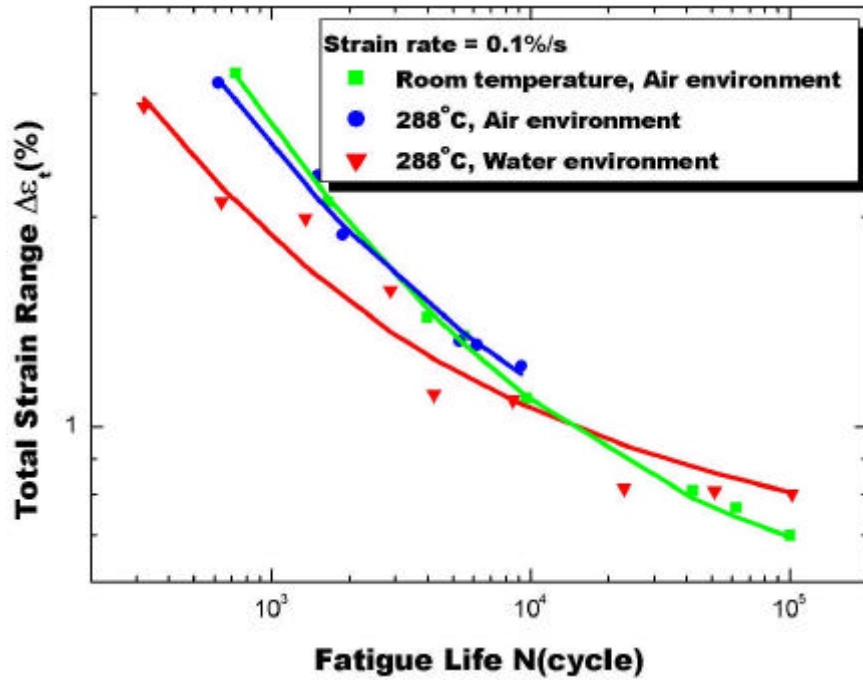
4.



5. SA508Cl.3

	C	Si	Mn	S	P	Ni	Cr	Mo	Al	Cu	V
wt%	0.21	0.25	1.24	0.002	0.007	0.88	0.21	0.47	0.008	0.03	0.004

1. SA508Cl.3



6. SA508C1.3