

./ : +7(499)1359668/+7(499) 1358680 [eva@imet.ac.ru](mailto:eva@imet.ac.ru)

95 -

B95 -  
; 1,42

95 , 1,26

V. Ermishkin, S. Kulagin, N. Minin, Yu. Solovieva

**COMPARATIVE ANALYSIS OF FRACTURE TOUGHNESS ALLOY B95 IN HO LODNODEFORMIROVANNOM AND HARDENED STATES BY PHOTOMETRIC ANALYSIS**

*The results of a photometric analysis of the kinetics of the destruction of the alloy V95 in the hardened and cold conditions are presents. It is shown that in the quenched state deforming load is almost twice higher than in cold; 1.42 times the time before a catastrophic crack growth of 1.26 times lower than the speed of crack development in the step of hardening the lung. In the alloy samples with V95 electric-notch, loads in the introduction of the wedge incision, were determined stress intensity factors for the samples investigated in two states. It is found that the cracks and plastic zones develop in the oscillatory mode. Thus the development of plastic zones is out of phase with the development of cracks.*

**Keywords:** comparative analysis, fracture, deforming load, the plastic zone photometric analysis.

**1.**

[1, 2].  
( )

2.

95

1 [3].

Zn	Mg	Cu	Mn	Cr	Al	Fe	Si		
5,0-7,0	1,8-2,8	1,4-2,0	0,2-0,6	0,1-0,25		0,5	0,5	0,05	0,1

6

20×20×6

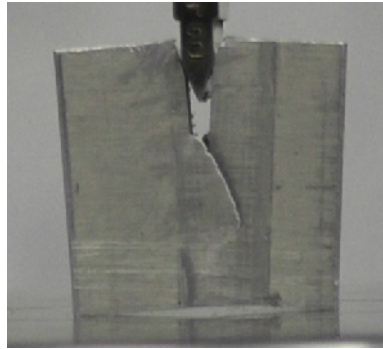
0,4

4

9 2

1 / -3382

.1.



.1.

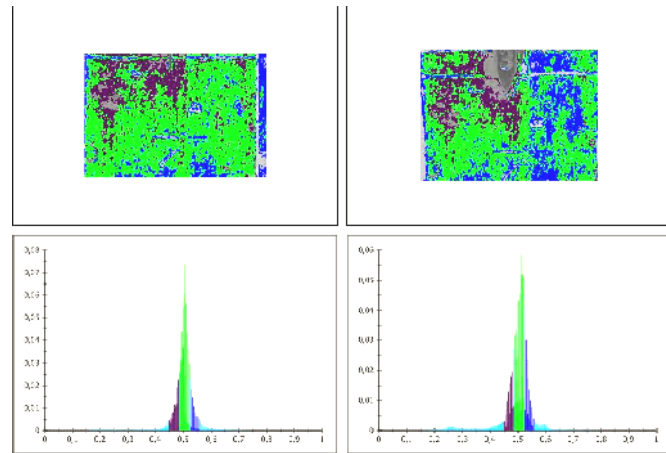
30

= 450°

(10 ., 5 ., 2 .)  
( ) ,

.2.

[4, 5].



2.

Z-1 (

245 .)

[6]

(Q)

(U),

$$U = A \cdot Q \tag{1}$$

Q.

[7]:

$$Q = \frac{\sigma^2}{2E} \tag{2}$$

[7]:

$$\sigma = \frac{M}{W} \tag{3}$$

: = P·l –

: bh<sup>2</sup>/6 , b –

l, W –

, h –

$$U_\sigma - U_0 = \frac{\sigma^2}{2E} \tag{4}$$

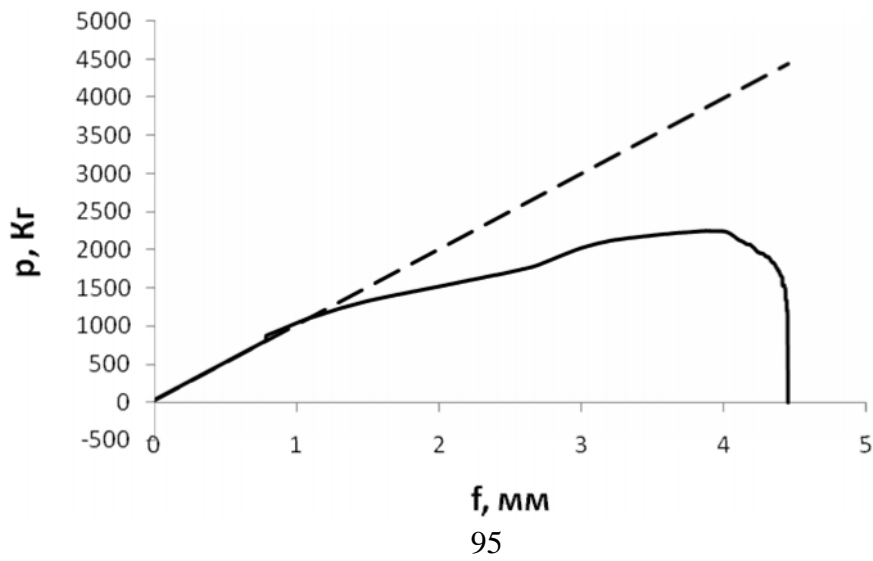
: U –

(1)

, U –

$$\sigma = \sqrt{2AE\Delta Q} \tag{5}$$

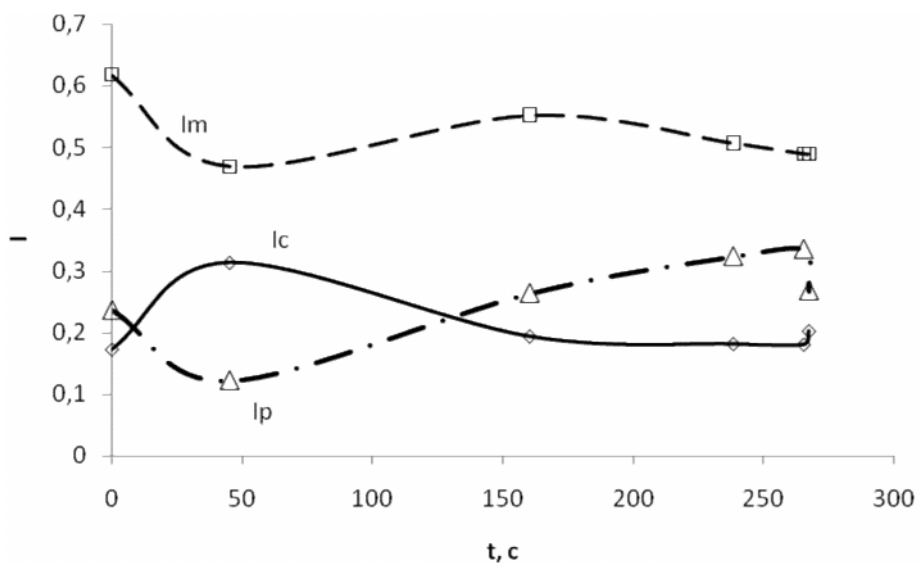
(5).



. 3.

.4

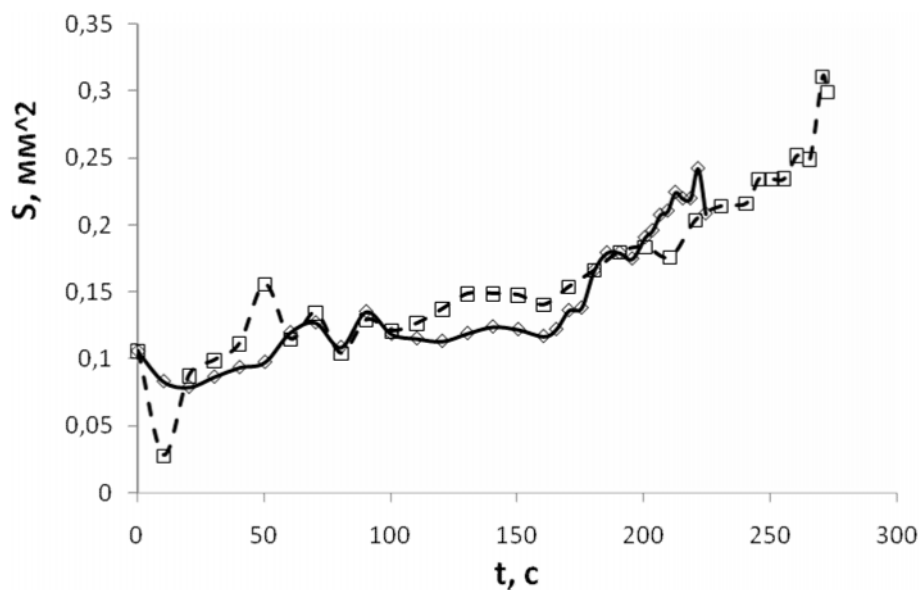
« »



4.

95 ( Im - , Ic - , Ip - )

5.



5.

( - - , - )

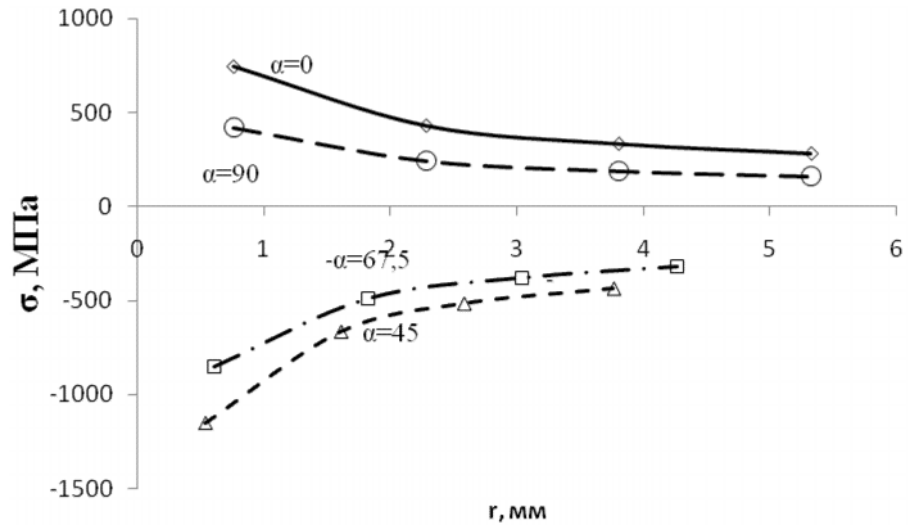
95

95



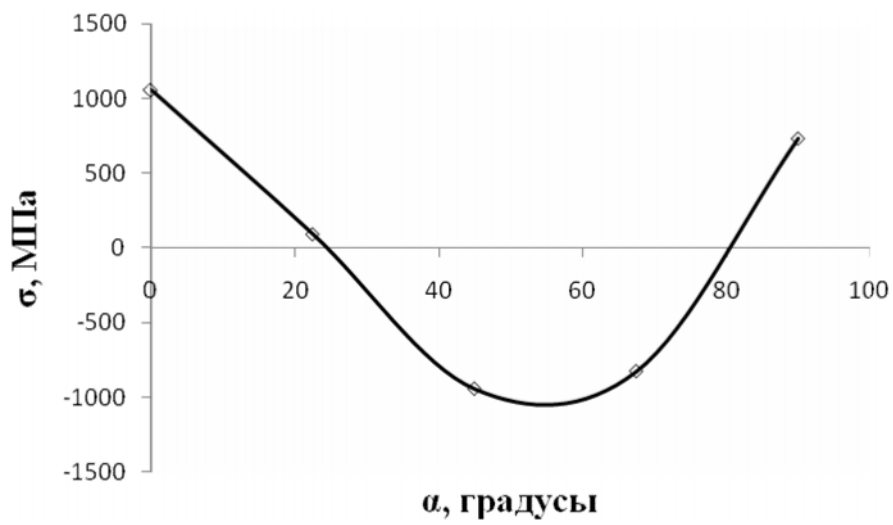
$r = 5,4$

.7



.7.

$y = f(r)$



.8.

$y = f(\alpha)$

$= 1$

