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 3. , -)
 (4. , , -
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 5. , , -
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 (Nb, Ti, V), -
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 (G) - , -
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 , $G < 0$, , -
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 , () :
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 (" ") -
 , -
 " " " Y_1 " " -
 " " (N), (-
 " Y_1 ". " - N , " " -
 " " " , -
 : - " " ; Y_2 - " " " ;
 ; Y_3 - .
 , $1/2$, . . . r
 $0,5 \dots 0,6$ ($0,56$).
 " " (" ; " " , -
) " " " " " -
 () " " : $r = 0$.
 (=) " " (-
 " " (-

(r)

).

:

$$r = \operatorname{tg} \left[\frac{1}{4} \operatorname{arcCos} \frac{\left(\left(\frac{r}{r} \right) - 1 \right)^2 - 2}{\left(\left(\frac{r}{r} \right) + 1 \right)} \right]$$

r / r - " " " " " "

$$r = r + (0,56 - r) \cdot \left(\frac{-}{1-} \right)^b$$

b -

$$b = \begin{cases} 1 & \frac{r}{r} < 10 \\ \operatorname{lg} \left(\frac{r}{r} \right) & \frac{r}{r} \geq 10 \end{cases}$$

$$Y_1 = \begin{cases} 0 & < \\ r & \geq \end{cases}$$

$$Y_2 = \frac{2\sqrt{N-1}}{N}$$

$$0,3 < < 0,7 \quad (\quad)$$

$$-0,30 \dots 0,32, \quad :$$

$$N = 11,6 \cdot (1 -)$$

$$N = 11,6 \cdot (1 - 0,32) = 4,888 \quad 5.$$

N 2,

" " " " " "

$$r = 0,56 \quad Y_2 = 1.$$

(),

$$N = (10 \cdot \text{Sin}^3(0,5 X) + 3) \pm 1.$$

Y2

$$N > 2,$$

$$N = N - 2$$

$$= 0.$$

Y2 N

$$F = k \cdot \Delta L,$$

$$F = E \cdot \frac{\Delta L}{L} \cdot S$$

$$F - ; S - ; E - ; k - ; L - ; L -$$

$$(L = 1)$$

$$= V + V$$

0,5...0,7

$$= Z \cdot$$

()

10 2 20-55 (200 800),
 -10 , - 08 2 ,
 Autrod 12.24, BOEHLER Ni2-UP, BOEHLER EMS 2Mo.
 : BOEHLER BB24, EN 760: SA FB 1 65 DC H5;
 -67 , 14-11-309-95; Flux 10.62, EN 760: SA FB 1 55 AC H5.

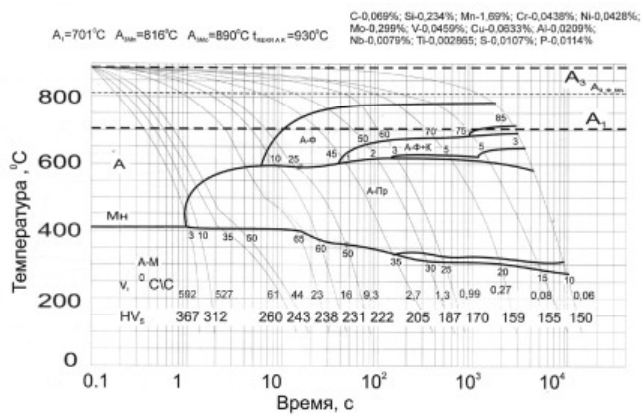
()

10 2 ,
 BOEHLER EMS 2Mo 0,1%,

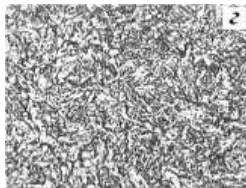
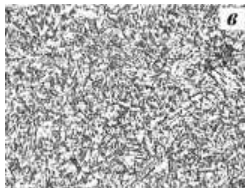
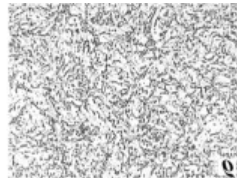
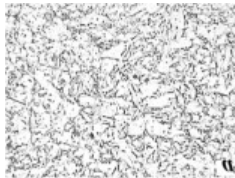
BOEHLER EMS 2Mo (

07 2),

07 2 (.1).



07 2 80. (07 2 80) ()
 07 2 80 07 2 - 1050⁰ , 80 - 1300⁰ .
 , (7-13° /)
 80
 , 10° /
 (660-610°). 07 2
 (.2, ,),
 9,3-16° / 25-10%
 50-60% .
 (20-70° /) 80,
 07 2
 07 2
 .2, , .



.2 - 07 2 (500). -
 9,3° / ; - 16° / ; -
 44° / ; 61° /
 .3 07 2
 80, .3 ,
 80, ,
 07 2 .

80

07 2 . 07 2

80

610° ,

07 2 - 600-770° .

660-

80

600-480°

07 2

620-300° .

0,5-

300°

80

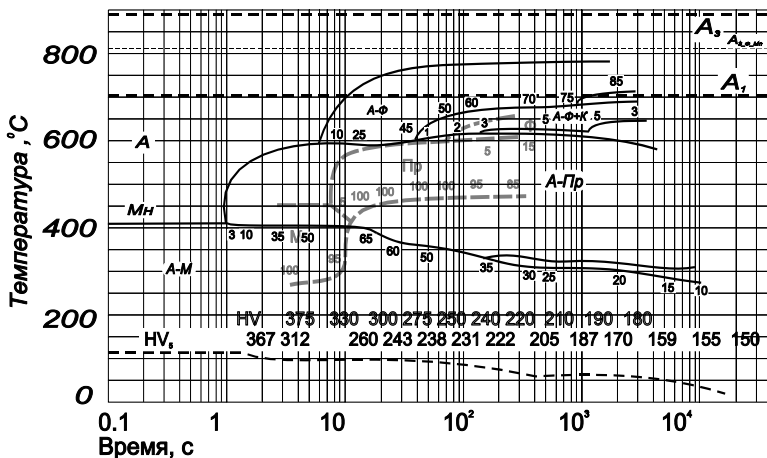
07 2

600-710° .

80

450-270° .

07 2 - 420° .



. 3 -
80 07 2

(07 2)

60,

70.

()

5...20 – 68...72 –
 IBM Crew XMP
 "M90", "Facehard", "Brun45" Turbo Paskal Basik.
 (40 – " "
 10 – " ") (~ 2000 – " " 40000 –
 ("Facehard"), – –
 " " " " NVNC –
 " – " " 2 ,
 " 7 ; " 4 " –
 " " " " :

$$V = (V_2 - V_1)^{-0.5}$$
 V – ; V₂ –
 ; V₁ –
 (75-80 %)
