



[7].

[8–10].

[11],

$$\sigma_c = (\sigma_{\text{с}} + \sigma_{\text{ср}}) \geq [\sigma] = 9,80 \dots 14,70 \cdot 10^6 \text{ Па}; \quad (1)$$

$$\sigma_p = (\sigma_{\text{п}} + \sigma_{\text{пр}}) \geq [\sigma] = 1,47 \dots 1,96 \cdot 10^6 \text{ Па}. \quad (2)$$

(1) (2).

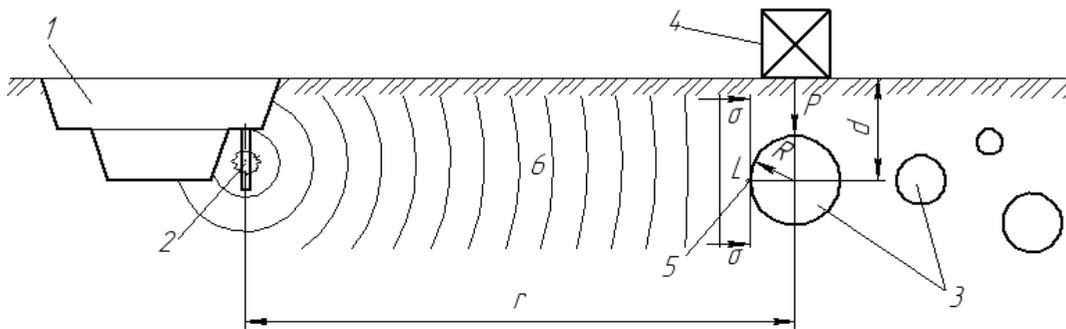
( . 1).

( , 36°).

( R = 15 ),

30  
= 0,25 [12].

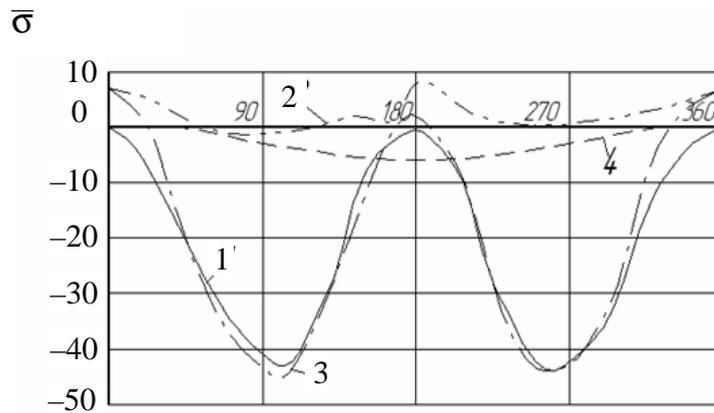
$0,2 \cdot 10^6 /$   
 $g = 0,25 \cdot 10^4 / ^3$   
 $= 0,1 \cdot 10^5$



. 1. : 1 - ; 2 - ; 3 - ; 4 - ;  
5 - ; 6 -

. 2

( $\sigma = +$ )

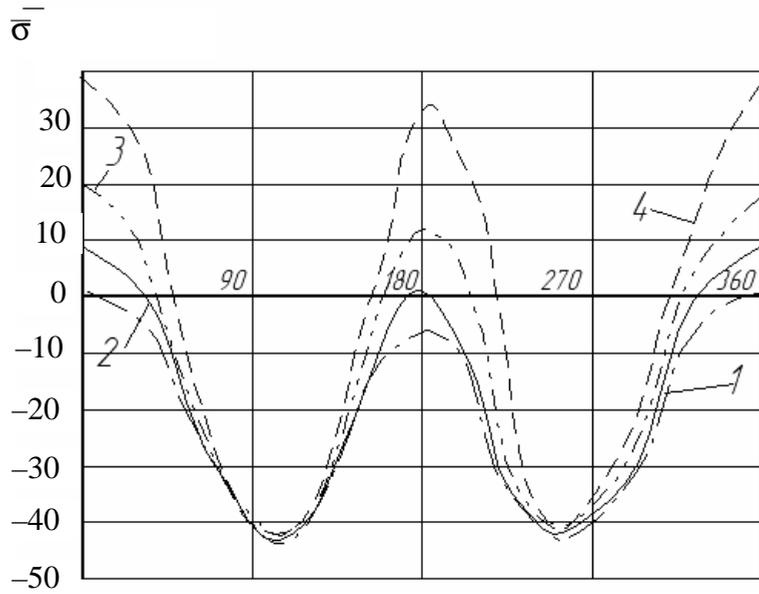


. 2.

; 3 - ; 4 - : 1 - ; 2 - ,

(1) (2)  
= 108°. . 3 ,

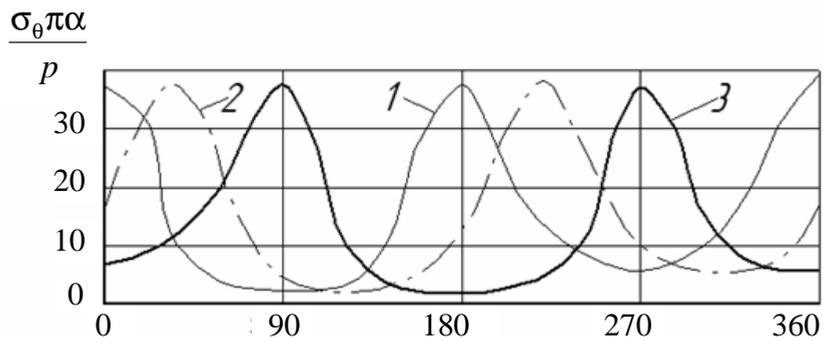
= 0° 180°.



. 3.

: 1 -  $\rho = 0$ ; 2 -  $\rho = 0,2 \cdot 10^5 / ^2$ ; 3 -  $\rho = 0,5 \cdot 10^5 / ^2$ ; 4 -  $\rho = 1,0 \cdot 10^5 / ^2$

( . 4).

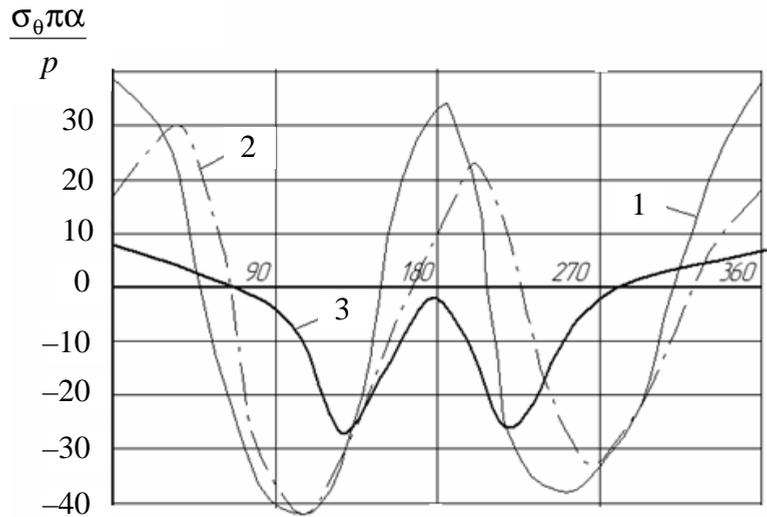


. 4.

: 1 - 0°; 2 - 36°; 3 - 90°

= 36°,  
( . 5).

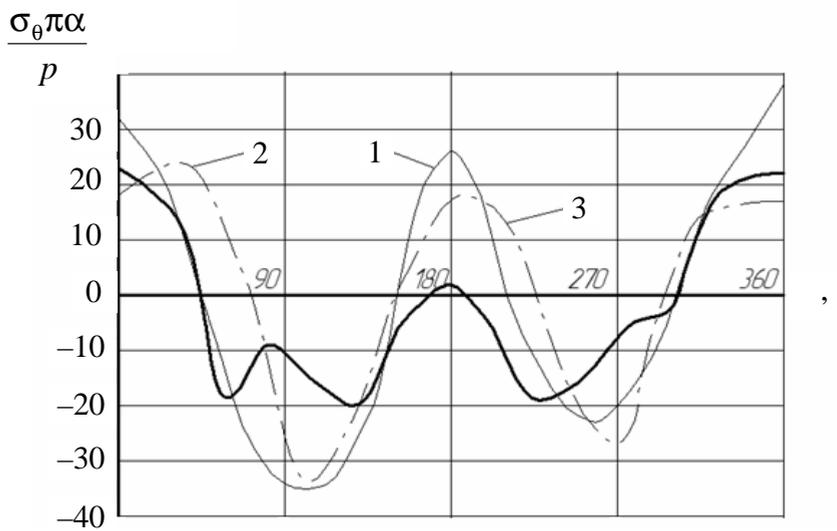
138° 202°



. 5.  
2 - 36°; 3 - 90°

: 1 - 0°;

( )<sub>max</sub> ,  
( , ) .  
( . 6) .



. 6.

: 1 - 0°; 2 - 36°; 3 - 90°

= 36°, = 0° 180°. = 40°



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