

## **DEFINITION OF CURVATURE OF THE GENERAL VIEW WORM SURFACE**

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**The Abstract.** Expressions, defining basic criteria of a surface curvature of a general view worm thread, and radiusses of curvature in plane sections is obtained.

**Keywords:** worm, surface, coordinates, cross-section, curvature, differential.

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**544.344:664**

$$\frac{1}{r_1}, \quad \frac{1}{r_2}, \quad \frac{1}{r_3}, \quad \frac{1}{r^I},$$

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$$\sigma_r(r) = \frac{E\alpha(T_2 - T_1)}{2(1-\mu)\ln\left(\frac{R_2}{R_1}\right)} \cdot \left( \ln\left(\frac{R_2}{r}\right) + \frac{R_1^2}{R_2^2 - R_1^2} \left( 1 - \frac{R_2^2}{r^2} \right) \ln\left(\frac{R_2}{R_1}\right) \right), \quad (1)$$

$$\sigma_\theta(r) = \frac{E\alpha(T_2 - T_1)}{2(1-\mu)\ln\left(\frac{R_2}{R_1}\right)} \cdot \left( 1 - \ln\left(\frac{R_2}{r}\right) + \frac{R_1^2}{R_2^2 - R_1^2} \left( 1 + \frac{R_2^2}{r^2} \right) \ln\left(\frac{R_2}{R_1}\right) \right), \quad (2)$$

*E* - ,  $\mu$  - ,  $\alpha$  - ,  $T_1$ ,  $T_2$  - ,  $R_1$  -  $R_2$  - , 673 , . . . (1) (2)

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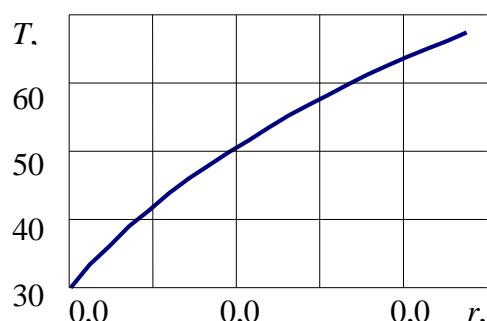
PLANE77  
PLANE82

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,	273	373	473	573	673
,	$2 \cdot 10^{11}$	$1,9 \cdot 10^{11}$	$1,8 \cdot 10^{11}$	$1,6 \cdot 10^{11}$	$1,5 \cdot 10^{11}$
	0,28	0,29	0,3	0,31	0,32
	53	51	49	44	43
	$11,9 \cdot 10^{11}$	$15,1 \cdot 10^{11}$	$15,5 \cdot 10^{11}$	$15,6 \cdot 10^{11}$	$15,7 \cdot 10^{11}$

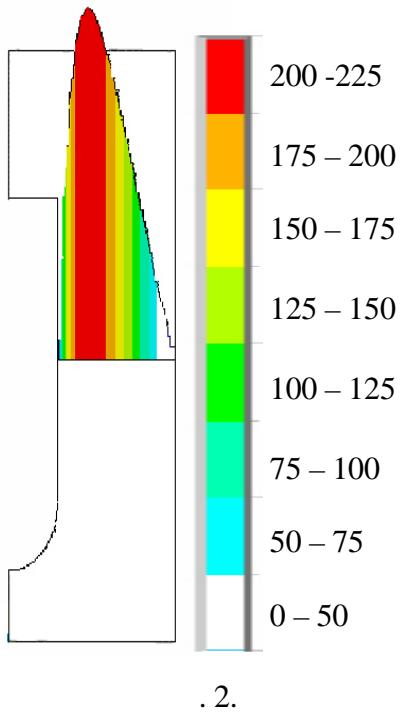


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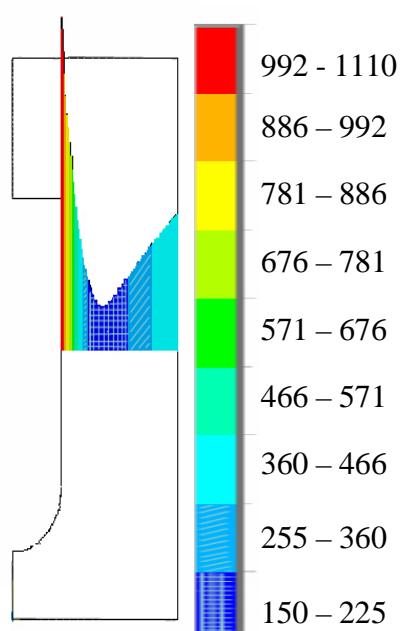
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$$\sigma_{eq} = \left( \frac{1}{2} ((\sigma_1 - \sigma_2)^2 + (\sigma_1 - \sigma_3)^2 + (\sigma_3 - \sigma_2)^2) \right)^{1/2} \leq [\sigma],$$

$\sigma_{eq}$  -  
 $\sigma_1, \sigma_2, \sigma_3$

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(1),



3.

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$$\sigma_r \quad (1)$$

$\sigma_{eq} \quad (2)$

$r$ ,  $[\sigma] = 1520$

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$\sigma_r$

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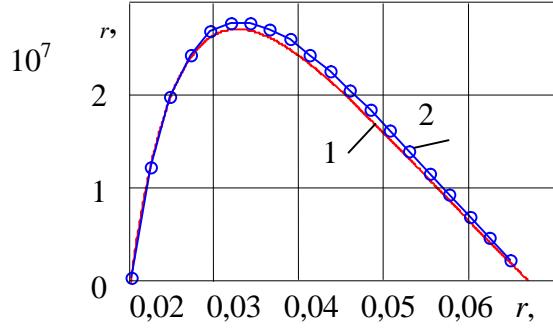
(1),

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$\sigma_r$

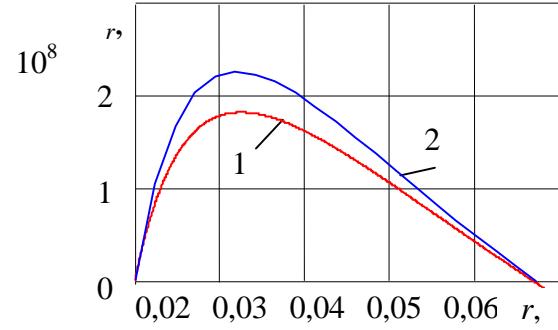
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$$\sigma_{r1} = 1.81 \cdot 10^8$$

3.



$$\sigma_{r1} = 2.25 \cdot 10^8$$

20 %

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## **THE INVESTIGATION OF THE TEMPERATURE STRESSES OF THE WORKING CHAMBER FOR FLUIDS PRODUCTION**

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**Abstract:** The methodic of calculation of the working chamber for fluids production is considered at ANSYS program. Verification is done based on Lame's formulas. The temperature stresses of working chamber during loading is obtained.

**Key words:** fluids, working chamber, thick-walled cylinder, model, ANSYS, temperature stresses.

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