

66.045.2.045.5-032.1

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On the basis of free convection concept a diagram is cited for thermal engineering calculation of transformer oil air-cooling system. This diagram duly considers design, hydrodynamic and physico-chemical process parameters and may be used to develop heat exchangers under free convection conditions.

[1-2]

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h, ;

Q, ;

t, ;

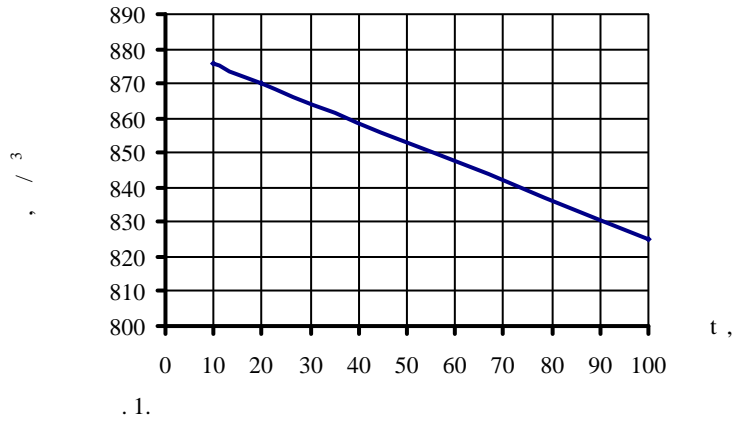
F, ²;

/(·);

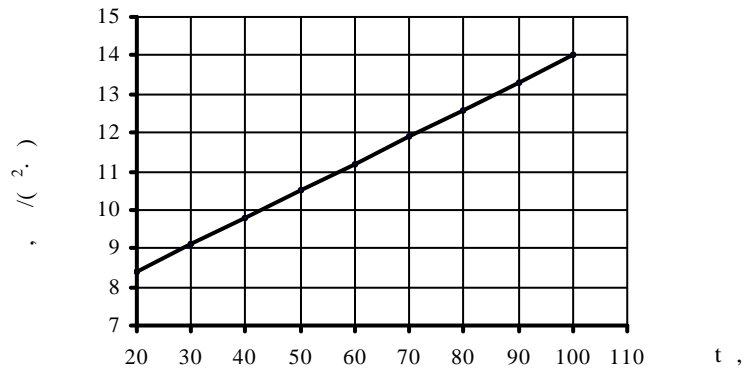
/ ³;

[3], $\frac{d...}{dt}$, / (³ ·);

. 1,



[4], .2.



.2.

$$r = \frac{1}{5} \cdot r \approx 5,5r \quad (1)$$

(1),

$$\left(\frac{u}{\dots} \right)$$

(1),

$$= 0,846r \quad (2)$$

$$n = \frac{Q}{\Delta t \cdot F} \quad (3)$$

$$\Delta t = (t_2 - t_1) \quad (4)$$

(4) t

$$\begin{cases} Q = C \cdot n \cdot G \cdot \Delta t \\ \frac{d...}{dt} \Delta t = \frac{(t+1) \cdot w^2 \dots}{2g \cdot h} \end{cases} \quad (5)$$

$$G = f \cdot w \cdot \dots$$

(5),

$$w = 1,26 \left[\frac{Q \cdot g \cdot h \cdot \frac{d...}{dt}}{C \cdot n \cdot f \cdot (i + 1) \cdot ...^2} \right]^{0,33}, / \quad (6)$$

$$\Delta t = 0,794 \left[\frac{(i + 1) \cdot Q^2}{C^2 \cdot n^2 \cdot f^2 \cdot g \cdot h \cdot \frac{d...}{dt}} \right]^{0,33}, \quad (7)$$

(4) -

t .

1. 1969.-439 . 2. 1971.-784 . 3. 1947.
 - 415 . 4. 1966.-247 .

27.04.06