

The invention relates to the methods of non-cutting shaping of metals and may be used in automatic rolling mills at lengthwise plug rolling of weldless tubes. The method of lengthwise rolling of tubes in sizing rolls on a short immovable mandrel, at which the deformation of a billet along the radius is made up to the plan and behind the plan of centers of rolls, and simultaneous increase of external diameter and reduction of the wall of billet is made in the outlet cone of deformation core, and in this case the reduction of the billet wall with simultaneous increase of its external radius is made in such a manner that in the plan of points of pass the intensity of deformation of wall consequently increases, and the intensity of deformation of external radius is monotone increasing, in this case the forming of billet is made in such a manner that in the plan of points of pass the intensity of deformation makes $I_{\max}=0,05 \div 0,30$, the intensity of deformation of external radius in the plan of beginning of reduction of the billet wall with simultaneous increase of its external radius makes $I_{\min}=(0 \div 0,8)I_{\max}$, and the ovality of pas of rolls depends on the intensity of deformation of external radius in the section of withdrawal of finished tube from the deformation core according to the formula:

$$\lambda_k = (0,99 \div 1,01) \cdot \left(\gamma - \frac{\gamma - 1}{\sqrt{I_{\max}^2 + 1}} \right),$$

where $\lambda_k = \frac{b_k}{h_k}$ - ovality of roll pass; b_k - width of pass, mm; $h_k = 2 \cdot \left\{ R_i - [R_i - (R_t)_h] \cdot \sqrt{1 + I_{\max}^2} \right\}$.

$\gamma = \frac{2R_i}{h_k}$ - index of pass depth; R_i - ideal radius of pass, mm; $(R_t)_h$ - external radius of tube in the plan of points of pass, mm. The invention ensures the quality increase owing to elimination of defects on tubes and reduction of rejected finishes products for 2-5 % .