

EXPERIMENTAL RESEARCHES REGARDING THE WORKING CONDITIONS FOR COLD PLASTIC DEFORMATION OF METALS

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Abstract: The paper shows the experimental researches require working conditions (material, half-finished, working equipment, devices and measure and control apparatus) and working parameters for cold plastic deformation (force, working feed and driving roller speed). The experimental results show that the work parameters for which the values of the form irregularities (ovality and conicity), as well as the dimensional irregularities of the exterior diameter of the ring are minimum are: $P = 4.5$ MPa, $A = 4.0$ mm/min, $n_a = 95$ rot/min. The subsequent experimental attempts for establishing the minimum values for the quality parameters of the profiled rings (the roughness of the rolling surface, the form irregularities- oval shape, circular shape-as well as the micro-hardness of the rolling surfaces) will be performed with the values mentioned for the work parameters.

Key words: cold plastic deformation, device, force, measure, control.