

## Summary

The paper presents the research results of the process of bending steel profiles in a three-roll bending machine. A review of the methods and devices used to shape the curvature was carried out, with particular emphasis on bending in roll (tube) bending machines. On the basis of the literature analysis, the scope of research work was determined.

On the basis of the research, the influence of initial deflection on the value of the bending radius was analyzed. The research included experimental tests in a three-roll bending machine and theoretical analyzes, which were carried out for a flat bar, cold-formed and hot-rolled angle sections, square and rectangular sections. The obtained experimental results were compared with the results of theoretical analysis, including MES.

Measurements of the radius dimension non-compliance and the deformation of the cross-section of the profiles, which emerged as a result of shaping the curvature, were performed. On the basis of the measurement results, the dependence of the cross-section distortions from the initial deflection was obtained. The obtained dependencies make it possible to determine the correct parameters of the process and to forecast the quality of products.

On the basis of the obtained experimental and theoretical results, conclusions were formulated and the scope of further research was determined.