

# The study of simulation for the hot roll forming process



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## Abstract:

Nowadays, 3D finite simulation are widely used in industrial process of manufacturing. Roll forming is a significant forming method in modern industry manufacturing. The numerical results of longitudinal strains and displacement are developed in this simulation. Through the study in this paper, the bending phenomenon is observed. The simulation was elaborated by the finite software ABAQUS using the explicit, dynamic solutions. According to finite element analysis results, the bending occurs after roll forming. Therefore, we can make comparison of the spring-back and forming force under different temperature from the finite element analysis. A flexible roll forming setup was developed. The finite element analysis simulation results are compared with the experimental data from the flexible roll forming setup. Results show a good agreement and confirm the finite element analysis.