MONITORING OF GEOMETRIC FAILURES OF THE HOT-ROLLED SEAMLESS TUBES AT THE STRETCH-REDUCING MILL BY USING NUMERICAL SIMULATION

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Abstract
This article describes and analyses the thermo-deformation processes of the seamless tube rolling process at the stretch-reducing mill. Stretch-reducing mill is one of the main machinery for the tube rolling. The final dimensions of seamless tube are reached after rolling and cooling on the cooling bed and the final mechanical properties after heat treatment. Two basic geometric failures (non-homogeneous wall thickness at the ends and polygon) are created during the tube reducing. These failures reduce the quality of hot-rolled seamless tubes and the non-homogeneous wall thickness at the ends increases the industrial scrap. We have used the numerical simulation software - DEFORM 3D for the description of creation of these failures.

Keywords: Hot rolling, Stretch-reducing mill, Polygon, Wall thickness, Simulation

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