Numerical Investigation of Clinch Connection Manufacturing Process

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Abstract

© 2017 The Authors. Published by Elsevier Ltd. In the framework of the finite element method, an approach to the solution for the contact interaction problems for elastoplastic deformable bodies with considering friction in the contact zone is implemented. The geometrically nonlinear approach to the description deformation based on the definitive relationship between the increment of true stresses and deformations, a static statement is given for elastoplastic problems in three-dimensional structures, which have complex geometry. The algorithm of the solution is drawn based on "modified Lagrangian approach" to describe the motion. The problem of body deformation of steel sheets which involve clinch connection, and sample in under punch has been solved, also the distribution of residual stresses in the zone of the clinch joint has been determined.

Keywords

Clinch conecction, punch, true stresses

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