

REMARKS ON MACHINABILITY FUNCTIONS REGARDING THE FORMING FORCES FOR THE COLD ROLLING WITH RACK OF THE CYLINDRICAL GEAR WHEELS

Authors

Doina IACOMI, Eduard NITU, Viorel NICOLAE
University of Pitesti, Romania,

Abstract

The manufacture of gear wheels by cold - forming processes requires the knowing of the forming force in the process in order to choose efficiently the right machine-tools. The paper presents a methodology of determination of the forming forces as multivariable regression functions and contains the main mathematical relation concerning the function form, the experiment structure, the coefficients calculus, the regression analysis (the model adequacy and the coefficients significance analysis), the statistical errors and the confidence interval. The presented theoretical-experimental researches allow to establish the influence of the different technological and constructive factors on the forming force and implicitly on materials machinability, i.e. a methodology which allows to determine the most favorable processing conditions.

Keywords

cold rolling, gear wheels, forming forces, machinability functions.