

## عنوان مقاله:

An Analytical Method for Bearing Design in The Forward Extrusion Process

## محل انتشار:

هفدهمین همایش ملی و ششمین کنفرانس بین المللی مهندسی ساخت و تولید (سال: 1399)

تعداد صفحات اصل مقاله: 6

## نویسندگان:

Amin Seyyed Nosrati - PhD Graduated of Mechanical Engineering, School of Mechanical Engineering, University of  
, Tehran, Iran

Karen Abrinia - Professor of Mechanical Engineering, School of Mechanical Engineering, University of Tehran, Iran

## خلاصه مقاله:

Bearing design is a major issue in controlling material flow and producing high quality extruded products. The purpose of this study is to design the bearing land of forward extrusion dies using an analytical approach for metal extruded sections. This method is based on a generalized kinematically admissible velocity field to obtain uniform velocity at the die exit. A new formulation was developed to define the geometry of the deformation zone. The response surface methodology was employed to optimize the relative extrusion pressure, deviation of the mean value for the velocity at die exit and subsequently the bearing length for the extrusion die. Using this theoretical method, extrusion of T-shaped section was investigated and compared to previous work. Finite element simulation was carried out to validate the suggested analytical method. The proposed analytical method gave a unique answer for the required bearing design in a few seconds contrary to finite element method which required many timely and costly trials

## کلمات کلیدی:

.Extrusion-Bearing-Finite element method

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1277984>

