عنوان مقاله:

The Relationship between Constant Friction Factor and Coefficient of Friction in Metal Forming Using Finite Element Analysis

محل انتشار:

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خلاصه مقاله:

Frictional shear stress is usually determined by utilizing the coefficient of friction or theconstant friction factor models. The present study deals with finite element analysis of double cupextrusion process to determine the relationship between constant friction factor (m) and coefficientof friction (μ), since the metal flow in this process is very sensitive to frictional conditions.Therefore, the Finite Element-Code Deform 2D is used which is capable of utilizing both μ and m.According to this analysis, a new equation between constant friction factor (m) and coefficient offriction (μ) is suggested. Moreover, in order to evaluate the suggested equation and to compare itwith the previous equations, finite element analysis of barrel-compression test is carried out. Finiteelement results indicate that the new equation can accurately predict the relation between m and itsequivalent μ value. The importance of converting these factors to each other is speciallyhighlighted to introduce the frictional conditions in some professional and commercial finiteelement software.

کلمات کلیدی:

Metal forming, Friction coefficient, Constant friction factor, Finite element analysis