

عنوان مقاله:

The application of different ductile fracture criteria in prediction of bursting failure in tube hydroforming

محل انتشار:

دومین کنفرانس بین المللی و هشتمین کنفرانس ملی مهندسی ساخت و تولید (سال: 1386)

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نویسندگان:

M.H Kargarnovin - *Professor Mechanical Engineering Department, Sharif University, Tehran, Iran*

Y Ashouri - *MSc student Mechanical Engineering Department, Sharif University, Tehran, Iran*

خلاصه مقاله:

The possibility of the application of ductile fracture criteria in prediction of bursting failure in tube hydroforming under combined internal pressure and independent axial feeding is examined. Using the finite element method, different ductile fracture integrals was calculated independently from the histories of stress and strain curve in each element and then the position where the fracture initiates is located and consequently the forming limit is identified. The needed material constants for each criterion are determined from uniaxial tension test or forming limit diagram. The calculations are carried out for the axisymmetric tube bulging under different loading paths. The comparison of obtained results with experimental ones show that the implementation of ductile fracture criteria for hydroforming process are reliable, and hence can be extended to a wide range of practical tube hydroforming processes.

کلمات کلیدی:

Tube hydroforming; Forming limit; Ductile fracture criteria; FEM

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