

ROTATION OF LOCAL COORDINATE FOR ANALYSIS DRAWING PPROCESS OF METAL POLYGONAL SECTION BY (FEM)

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ABSTRACT -The most important activity of metal forming technology is the correct design of stages geometry for economic consideration in order to increase the metals utilization coefficient and the productivity realized products with high dimensional accuracy and a finer quality of worked surface. In this Study the rotation of local coordinate by using finite element method through (M. S. C / Nastran) are investigating with influencing of some parameters such as , Reduction area , Simi die angle and friction factor to obtain the stresses and strains developed during the drawing process of polygonal section from round section .The results show that its possible to use the technique of rotation of local Coordinate in all programs of (F.E.M) to analysis metal forming process especially when the friction factor = 0.1 , Simi die angle = 9° , Reduction area =35% which are gives good agreement to the results of (U.B.T)and the practical results.

1. INTRODUCTION

Attention is being increasingly paid to the drawing of section rod from round stock as this operation offers the promise of an economic production route the process is attractive also, because draw machines are readily available and the necessity to purchase expensive section stock corresponding to multiplicity of required section was eliminated , However the direct cold drawing of section rod from round bar through a single die has not been practiced widely because of the difficulties experienced in establishing the optimum die profile to form an accurate section and in allocating the work to draw machines, Equally , theoretical consideration of this operation has been neglected a simple analytical techniques can not yield valid relationships consequently ,Some consideration is now given to the mechanics of