

CFD ANALYSIS OF THE HYDRODYNAMIC LUBRICATION IN PRESSURE DIE: APPLICATION TO WIRE DRAWING

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ABSTRACT

The modern wire drawing machines facilitated with pressure die to draw wire at high speed. Pressure die, These dies are basically combination of two nibs, first of pressure nib and second draw nib. Pressure nib is the one which build pressure at the entry of wire drawing nib in pressure die. There are no standards available for this pressure nib design. The Tattersall equation provides guide line to design the pressure nib. In this work analysis of wire drawing process under hydrodynamic lubrication has been done and effort made to validate the Tattersall equation using Computational Fluid Dynamics (CFD).

KEYWORDS: Wire Drawing Die, Hydrodynamic Lubrication, CFD, Pressure Die