

/ ON THE WRINKLING OF SHEET METAL DURING DEEP DRAWING

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Wrinkling is an undesirable phenomenon which occurs during deep drawing of thin sheet metal pressings, particularly those with sloping wells. Some recent studies on the wrinkling behaviour of sheet steels have shown that wrinkling will occur upon the attainment of a critical ratio of the major strain ϵ_r to the minor strain ϵ_θ and this has been represented on the forming limit diagram as a wrinkling limit curve.

The present investigation has shown that for a given material the critical factor in wrinkling is the ratio of the stresses, σ_r/σ_θ or the ratio of the increments of the plastic strains $d\epsilon_r/d\epsilon_\theta$ rather than the ratio of the total strains $\epsilon_r/\epsilon_\theta$ as has been postulated by previous researchers.