

Metal Flow and Die Filling in Coining of Micro Structures with and without Flash

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Keywords: miniaturization, tool, micro metal coining

Abstract. The continuing miniaturization of production systems and products poses a challenge for metal forming technologies to produce precise small scale products with microscopic geometric details. Thin metal plates with channel structures are considered to be typical examples for microfluidic applications [1,2]. In this study the coining process of sheet metal to produce channel and rib structures is examined in terms of geometrical die parameters and tool design. For this reason extensive experimental series and numerical simulations have been realized and evaluated.