Title (en)

Method of predicting damage of dies

Title (de)

Verfahren zur Vorhersage des Versagens von Matrizen

Title (fr)

Méthode de prédiction de la défaillance des matrices

Publication

EP 1714717 A1 20061025 (EN)

Application

EP 06008110 A 20060419

Priority

JP 2005120660 A 20050419

Abstract (en)

Disclosed is a method of predicting damage of dies for plastic processing of metallic materials, typically, forging dies, by predicting brittle fracture ("great crack" or "initial crack") dominating die lives contribute to die design including choice of materials, hardness and configuration of the die. The method is characterized in that the die design is carried out by choosing the condition that none of the anticipated values of brittle fracture, F c1 to F c3 , calculated by the formulae 1 to 3 below exceed the critical values depending on the material used. [formula ## 1] ## F c 1 = (Ã m / Ã e q) [formula ## 2] ## F c 2 = (Ã m / Ã 1 max) [formula ## 3] ## F c 3 = (Ã 1 max / Ã e q) Ã m : mean normal stress loaded to the tensile side of the die Ã eq : Von Misese's equivalent stress Ã 1max : maximum principal stress

IPC 8 full level

B21J 13/02 (2006.01); **B22C 9/06** (2006.01)

CPC (source: EP US)

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Citation (search report)

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