

Capability Database of Injection Molding Process— Requirements Study for Wider Suitability and Higher Accuracy - DTU Orbit (09/11/2017)

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Generally, there is little disagreement that an early consideration of dimensional accuracies achieved in production is conducive to the success of development of injection molding products. While different process capability databases (PCDBs) provide guidance for a meaningful estimation of the expected part variation, the adoption of corresponding guidelines and (proprietary) software tools seems to be, however, limited in industrial practice so far. This research paper addresses the gap between the available PCDBs and the requirement of designers in practice and investigates the key drivers for an improved applicability of corresponding database solutions in an industrial context. A survey of database users at all phases of product value chain in the plastic industry revealed that 59% of the participating companies use their own, internally created databases, although reported to be not fully adequate in most cases. Essential influences are the suitability of the provided data, defined by the content such as material, tolerance types, etc. covered, as well as its accuracy, largely influenced by the updating frequency. Forming a consortium with stakeholders, linking database update to technology changes and connecting dimensioning standards to database offerings are proposed solutions

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