

Design for sintering club project – dealing with the anisotropy of dimensional changes in real parts

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In previous work the anisotropic dimensional change on sintering has been investigated in depth. An anisotropy parameter has been identified depending both on geometry and on sintering conditions and it has been used to define a model for the anisotropic behaviour. A design procedure accounting for anisotropic dimensional changes has been proposed. This work summarizes the main results obtained within the Design for Sintering Club Project aimed at validating and enlarging the aforementioned design procedure by the application on real industrial parts. Project partners provided axi-symmetric parts which were measured both in the green state and after sintering in standard industrial conditions. The real dimensional changes were compared to the dimensional changes predicted by means of the design procedure based on the anisotropy model. The results also compared to the attainable dimensional tolerances allowed validating the design procedure and showing directions to further improvement.

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