

Comparison of Material Behavior and Economic Effects of Cold and High Temperature Forming Technologies Applied to High-strength Steels

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Abstract. The focus of *forming high-strength steel at elevated temperature* is to improve its forming properties like elongation and to reduce the power requirements during the forming process in opposite to cold forming. Because of the undefined and large spring-back effects parts made by cold forming are not able to achieve the demanded dimensional accuracy, which is necessary for laser welding operations in car body assembly. The reduction of the spring-back behavior is another advantage of the temperature controlled forming technology. On the other side the forming at elevated temperatures requires increased costs for forming tools and tempering equipment. For a fundamental evaluation of this technology, expenditures for the complete process chain have to be considered.