ESI’s solutions for welding and assembly - predicting the “as manufactured” quality and performance

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Abstract

Welding is important in both original manufacture and repair in many industries. For the automotive industry, managing the distortion of welded assemblies on a vehicle assembly line is achieved by appropriate tooling and choice of assembly sequence. ESI’s welding and assembly solution enables designers to make the right manufacturing decisions early in the design cycle and also to look ahead to the impact on product durability and crash performance. In other industries, including the energy, nuclear and heavy industry sectors welding is used extensively for repair. In such circumstances, predictive simulation of single and multi-pass welding provides essential information on residual stresses and material properties that can be transported to ESI’s Virtual Performance Solution so that product performance models properly reflect the “as manufactured” components.

This presentation details what has been developed in the last 12 months and what will be done in near future to satisfy the ever increasing demand for productivity, quality, and the control of cost of welded assemblies.