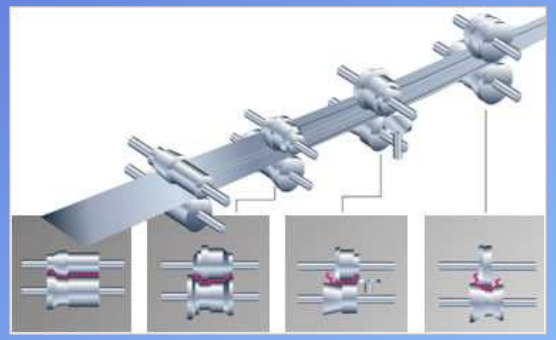
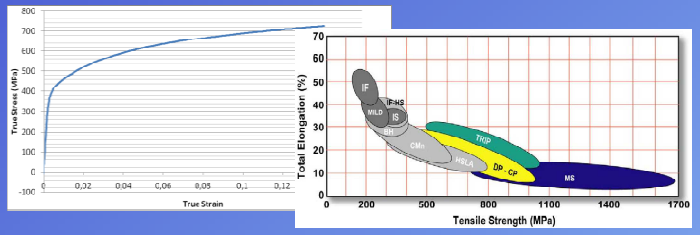
Innovative Manufacturing Processes

Modeling of Roll Forming of Advanced Steels

A long strip of metal is passed through consecutive sets of rolls for producing the desired roll-formed profile.

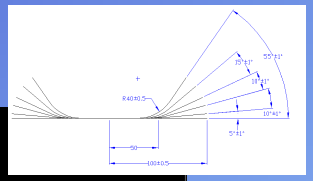


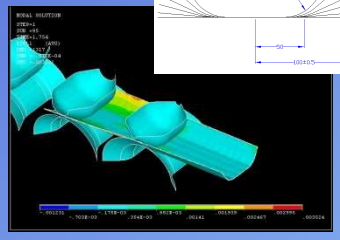
Modeling of Roll forming of Advanced steels is used to:
- **Acquire a deeper understanding about the process**
- **Optimize major operating parameters**
- **Reduce undesired machine down-times**
- **Avoid forming defects and to reduce the process development efforts**



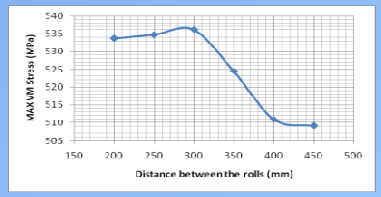
Greater forces are generated on the rollers and the frame with the usage of Advanced Steels, such as DP and TRIP series

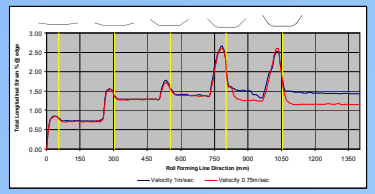
Greater influence of redundant deformations on springback and defects





Modeling of V-Section roll formed profile for optimizing process parameters (line velocity, rolls inter-distances, rolls gap, rolls diameter, etc) for minimum longitudinal and transversal strains at strip edge





REF: Salonitis, K., P. Stavropoulos, J. Paralikas and G. Chryssolouris, "Modeling of Cold Roll forming process: a preliminary theoretical investigation", Proceedings of the IFAC Workshop on Manufacturing Modelling, Management and Control, Budapest, Hungary, (November 2007), pp. 211-216.