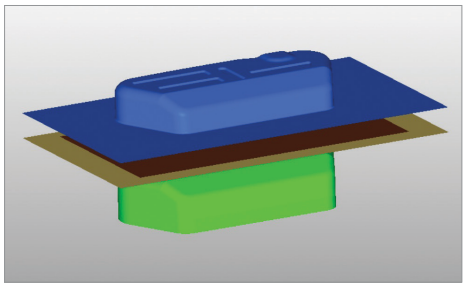
Altair Inspire Form Helps Pragati Engineering Address Sheet Metal Formability and Inconsistent Thinning Issues While Reducing Physical Try-out Time by 50%

Overview

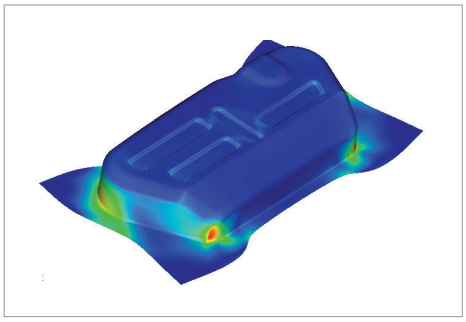
Pragati Engineering, established in 2004, is one of the leading press tool design and manufacturing companies in India. The company manufactures quality made-to-order dies and fixtures for a variety of customers. At Pragati, dedication is rooted in the form of a deep sense of responsibility towards their customers.

Pragati is an ISO 9001:2008 certified organization and has solutions for all kinds of tooling requirements. The company has a national reach and successfully carries out projects riding on the robust shoulders of qualified and dynamic engineers from their Design department and Tool Room division. The company relies on their skilled manpower and prides on their stringent quality control measures, which they adhere to at every stage of the manufacturing process. The company's competency lies in manufacture of Press Tools Fixtures and Panel Checkers for various critical sheet-metal components and assemblies. With new technologies, facilities, and experience in Press Tooling, the company is confident of seamlessly catering to any requirement in the sheet-metal forming segment.

Pragati has an impressive list of clients from various sectors and supplies automotive sheet metal parts to leading companies such as Mahindra & Mahindra, Hitachi, JBM, TATA Ficosa, and Federal Management.



Tool Setup



Plastic Strain

"With Altair HyperWorks™ at our disposal, we are able to detect errors early in the design stage and hence accelerate our development cycle. The DesignTech team with thorough training helped us understand Altair Inspire Form and its applications better. The training and support provided by both Altair and DesignTech was great. With constant support we are able to handle projects independently and are exploring other Altair solutions for newer applications in our domain."

Ram Kale
Managing Director, Pragati Engineering

Reducing Prototype Iterations

The Pragati team deeply believes in continuous product quality improvement through innovation with every new product that they manufacture for their clients. The team employs world class solutions and technology such as CAD, CAM, CAE, and PLM to give only the best to their clients. On their way to becoming a formidable player in the area of their expertise, the Pragati team regularly faces many challenges. The team not only beats these challenges, but also thrives on them.

The team faced one such unique challenge of cracks and wrinkles formation in one of their products being formed. Because the team earlier used their traditional method of trial and error, they were unable to predict these occurrences. The traditional trial-and-error method

forced the team to do die corrections manually and also rebuild a new tool. These unplanned iterations and physical die tryouts substantially increased the product development time and cost and impacted delivery schedules. Product quality and output accuracy was also an issue with the traditional method.

Using Altair HyperWorks to Nullify Errors

In their quest of finding a reliable solution to fix the issue of crack and wrinkle formation, the Pragati team came across Altair's Inspire Form through one of their vendors, who was already using the software. The vendor strongly recommended Altair Inspire Form as a robust solution to the team.

The team was sure that simulation would play a vital role in improving product quality and reducing the number of physical prototypes. Pragati procured Altair Solution and started using it for all their product lines. Altair Inspire Form proved them right as it helped the team in finding out instances of failure, wrinkles, or cracks in sheet metal panel components right at the design stage. This breakthrough eliminated soft tool manufacturing and drastically reduced the number of physical trials.

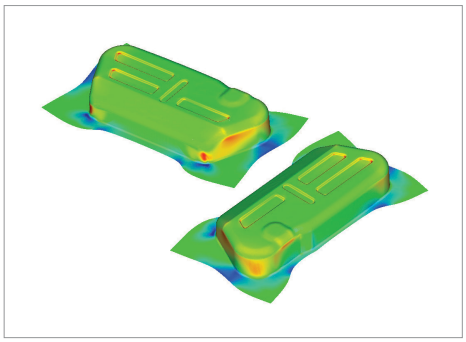
The Pragati team found immense value in Altair Inspire Form as the solution reduced product development time and also increased design and output accuracy.

Error-free Manufacturing Saving Time and Cost

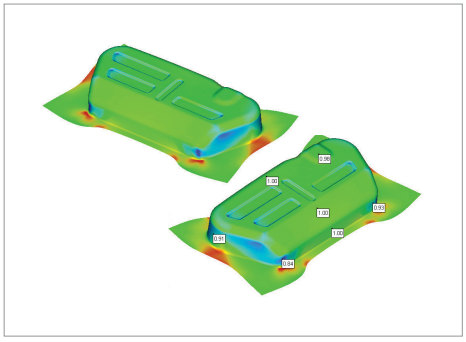
The Pragati team is delighted with their choice of Altair Solutions. They have ample reason to be so, because they obtained very accurate and precise results in terms of formability (FLD), thinning variation, and plastic strain through Altair Inspire Form. Altair Inspire Form also helped the team to easily optimize process parameters, which drastically reduced errors and improved the life of tools. The team was able to reduce the tooling delivery cycle time to just between one and two weeks through Altair Inspire Form, which earlier used to take almost a month by using their traditional trial-and-error method. Altair Inspire Form reduced the physical tryout time by an impressive 50% along with improving design accuracy and product quality.

The team used Altair Inspire Form extensively in the Mahindra U321 Shock Tower project and got accurate and speedy results, which enabled them to deliver the product within the set timelines and as per agreed quality benchmarks. The team now saves time and development cost by using Altair Inspire Form in all their projects and has done away with their traditional method, which was prone to errors and resulted in inaccurate prototypes and inflated prototyping cost.

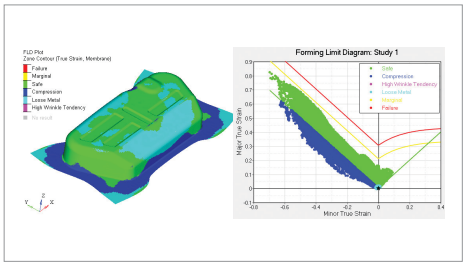
The Pragati team is highly impressed with Altair Solutions and plans to further reduce their design cycle time through an increased use of other Altair offerings in the future.



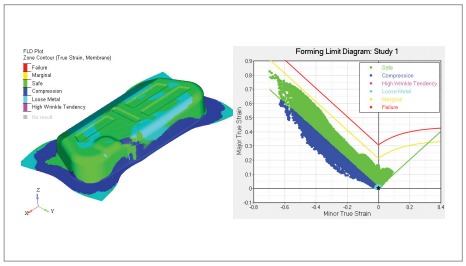
Fuel Tank Thinning



Fuel Tank Thickness



FLD Plot



FLD Plot

Key Hightlights

Industry

Manufacturing

Challenge

To reduce errors and product design and development cycle time and cost with increased design accuracy and provide quality products to customers through simulation.

Altair Solution

- Use Altair Inspire Form simulation and nullify crack and wrinkle errors at the Design stage.
- Achieve highly accurate and speedy results during product development cycle.

Benefits

- Realized product longevity by nullifying occurrence of cracks and wrinkles in products at the Design stage.
- Drastically reduced product development cycle time and cost and increased product quality.

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