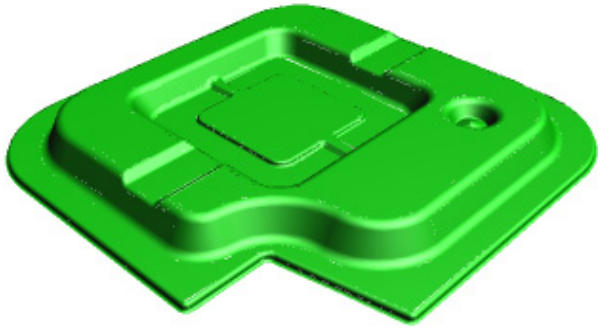
SimulateLite® - Virtual Tryout

Job No: 4319

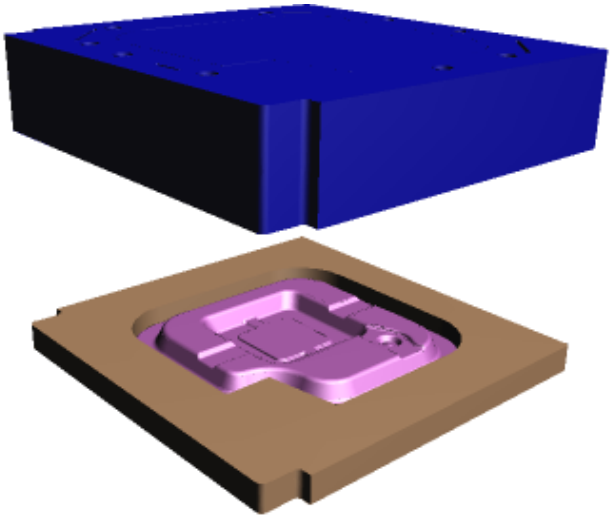
Client: zzSample Job John Citizen john.citizen@mail.com

1



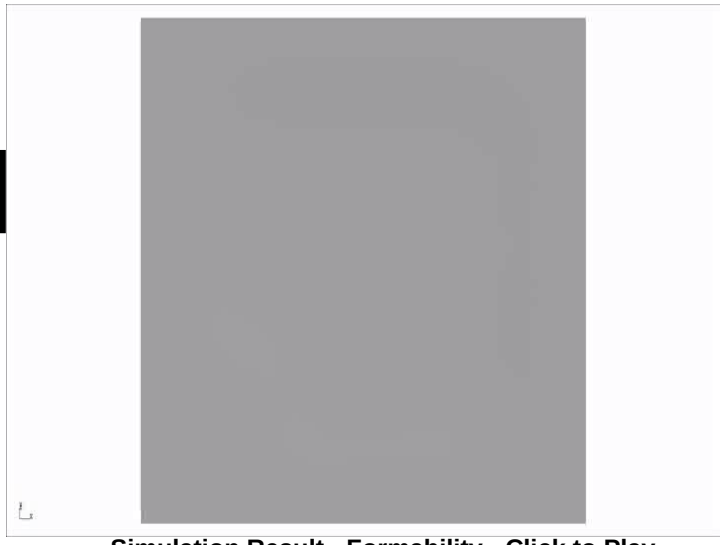
3D Product Design Geometry

2



3D Tool Design Data

3



Simulation Result - Formability - Click to Play

Introduction
The client provided product design and tool design data and requested a virtual tryout of the draw process.

The aim was to determine if splits experienced in reality, were expected OR caused by other unknown influences.

Simulation Inputs
Material: Extra Deep Draw Steel
Thickness: 1.6mm
Yield Stress: 172 Mpa
Tensile Strength: 311 Mpa
n value: 0.23
r value: 1.8
Binder Force: 71.3 tons
Surface Friction Coefficient: 0.15
Other: Cold rolled, Un-coated

Simulation Setup
As per the tool design, no draw beads were used with a square blank. The lower binder travelled down, under the applied binder force.

- Splits
- Excess thinning
- Risk of splits
- Safe
- Insufficient stretch
- Compress
- Thickening

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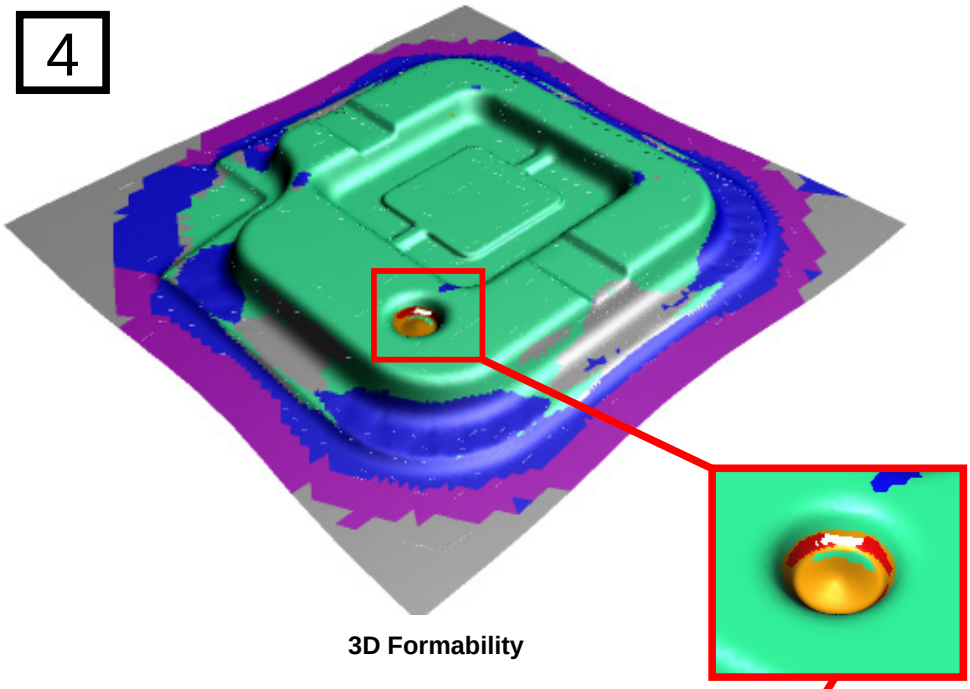


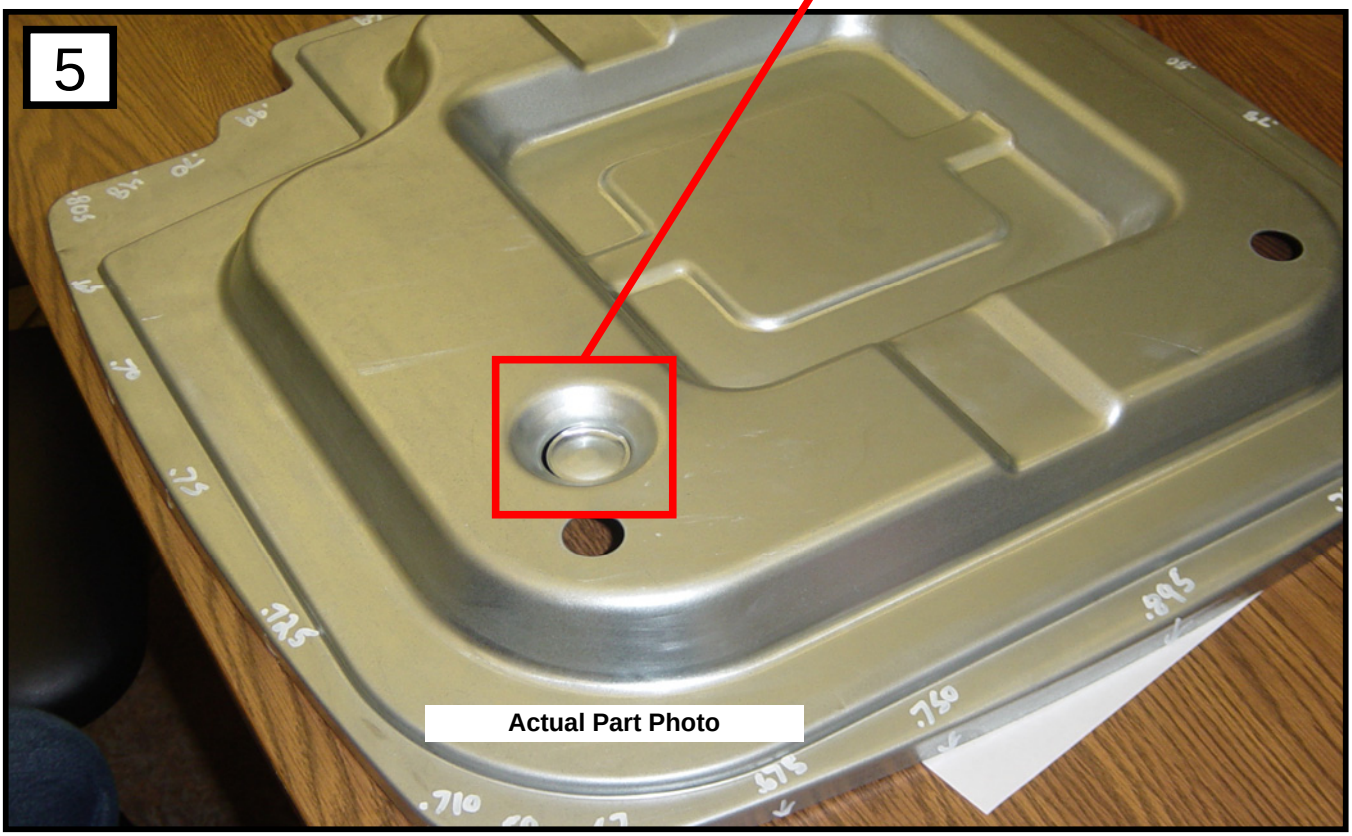
3D Formability

Results
The outputs from the simulation show that simulation matches reality and that splits are predicted.

Outcome
This problem could have been avoided by using simulation BEFORE tooling fabrication.

Although not reported here, using simulation a solution to the problem was developed and presented to the client to resolve the splitting problem.

5



Actual Part Photo

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