

# 3DCS FEA CM - Compliant Modeler Add-on

## Apply Finite Element Analysis (FEA) to your 3DCS model

### Utilize FEA Methods to Accurately Simulate Variation of Compliant Parts and Assemblies

3DCS FEA Compliant Modeler Add-on adds to traditional variation methods of 'rigid-body' by simulating the effects of welding, clamping, heat and gravity.

#### Advanced Simulations Include Force

Most commodities like sheet metal, plastic and aluminum can be heavily influenced through the manufacturing process. Compliant Modeler accurately depicts these influences, adding them to your tolerance analysis.

#### FEA Mesh and Analysis - The How

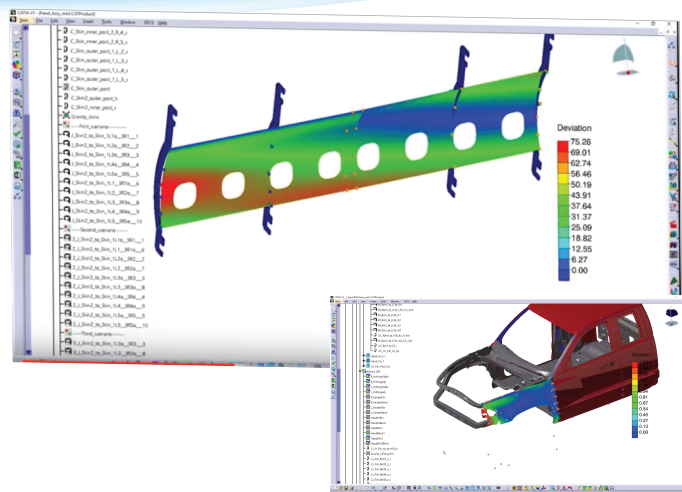
3DCS FEA Compliant Modeler uses a material mesh connected to nodes along the part surface. The analysis is then done within 3DCS, adjusting the nominal build based on the force applied. This makes it easy to add finite element analysis to Monte Carlo simulations and other variation analyses.

#### Get the Most Accurate Results - The Why

3DCS FEA Compliant Modeler enhances the ability to model flexible parts and assemblies that contain deformable parts such as sheet-metal, plastics, composites, aluminum or glass. The software simulates the dimensional variation of part deformation resulting from spring-back, gravity, heat and manufacturing operations (clamping, unclamping, welding, fastening, force application) to allow you to account for this additional variation in your design in order to improve product fit, finish, assembly and function.

#### Use FEA Mesh from Any FEA Software

Regardless of your FEA Solver, you can generate a mesh file for your CAD parts to enhance your simulation. The FEA Analysis is completed within 3DCS and does not require any pre- or post- analysis in a separate software.



### Key Product Highlights:

#### Account for Gravity and Heat -

See how the mass of the product affects its function, or how the heat from environmental changes affects the dimensional integrity.

#### Study Spring-Back -

Learn how spring-back affects the parts and optimize your assembly process to account for the changes.

#### Apply Clamps and Welds -

View the effect of clamps and welds on your parts.

#### Determine Optimal Processes -

Test different patterns of clamps or welds to determine optimal patterns to reduce deformation.

#### Include Multiple Forces -

Include welds, clamps and gravity in the same model.

#### Get Accurate Results -

Be confident in your results as tested against leading FEA software packages.

#### Test Different Materials -

Find out how different materials affect the dimensional integrity of your products.

