HELIUS:MCT NOW WITH COHESIVE

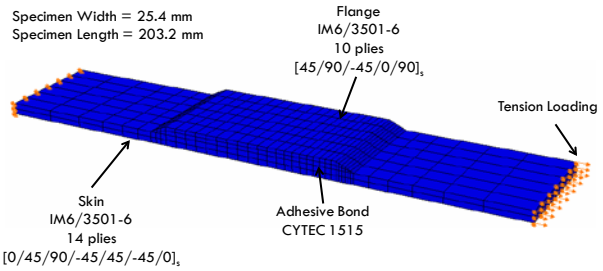
ADVANCED COMPOSITES SIMULATION | FIREHOLE COMPOSITES

CONVERGING ON DELAMINATION

Helius:MCT improves composite delamination prediction capability by combining its Intelligent Discrete Softening Method (IDSM) with cohesive zone modeling (CZM) to provide robust simulation convergence.

How does Helius:MCT compare to the state-of-the-art composite analysis method currently available?

In this example, consider the analysis of a composite skin stiffener loaded in tension. Here, Helius:MCT with Cohesive is compared with the cohesive technology provided within other commercial FEA platforms. The same FEA model and work station are used for both cases.

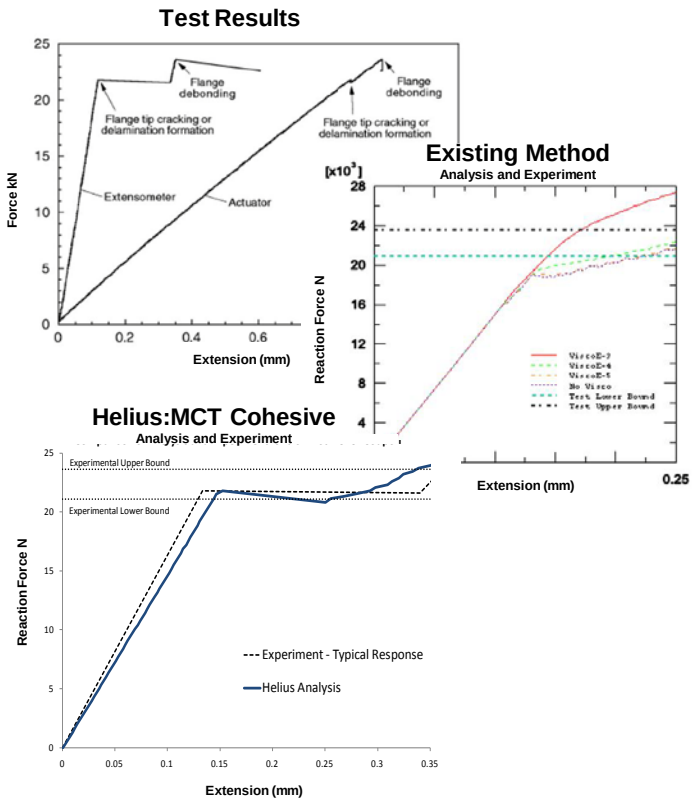


RESULTS

Results of the existing COTS solution are shown at right for 4 different values of viscosity (required to aid in convergence).

- There are 4 different solutions for 4 viscosity values
- None of the solutions match the load/deflection response from the experiment.
- No matrix cracking is reported, only debonding is modeled
- **Run time = 179 minutes** (x 4 viscosity values)

In comparison, Helius:MCT does not require a viscosity study and is able to simultaneously capture matrix cracking in the skin and flange as well as the debonding in a fraction of the time.



	Helius:MCT	Competition
Global Response	Accurate	No
Local Response	Accurate	No
Run Time	13 minutes	180 minutes
Viscosity Study	No	Yes

HOW IS THIS POSSIBLE?

The key is Helius:MCT's unique combination of multiscale progressive failure technology and the convergence-enabling Intelligent Discrete Softening Method (IDSM).

HOW CAN THIS POSITIVELY IMPACT YOUR DESIGN PROCESS?

CZM has been shown to be the most accurate method for predicting the initiation and progression of composite delamination, but its computational burden and convergence issues have precluded it from many analysis efforts. Those limitations need not exist.

Helius:MCT gives you an accurate, efficient solution to delamination analysis.

EXPAND YOUR SIMULATION CAPABILITY

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