



ESAComp – MSC.Patran Laminate Modeler Interface

Even the most advanced finite element software tools have shortages in their pre and post processing capabilities for composites. ESAComp, a specialized composites analysis and design software, provides solutions to overcome these shortages. With the export and import interfaces for major FE software and pre/post processors such as MSC.Patran, ESAComp integrates as part of the design cycle of composite structures.

Designing composites with ESAComp

ESAComp analysis and design capabilities together with the Data Bank for composite materials form an interactive environment for designing laminates. Laminates created in ESAComp can be exported to FE software together with the material data. After analysis of the complete structure with FEA, the results can be imported to ESAComp for detailed post processing. This allows, for instance, the use of graphical displays for visualizing layer stresses and strains. Failure analyses can be performed with a wide variety of composites failure criteria

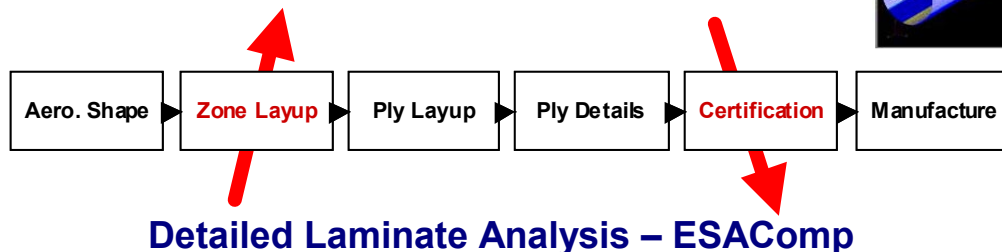
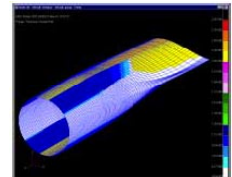
and failure modes such as sandwich face sheet wrinkling can be considered. Thus, the feasibility of the design can be verified. When design iterations are needed, new laminate configurations can be studied with ESAComp before running a new FE analysis of the structure.

Interface for MSC.Patran Laminate Modeler

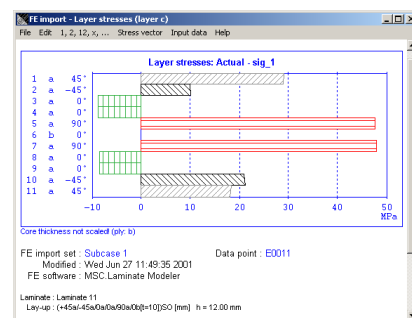
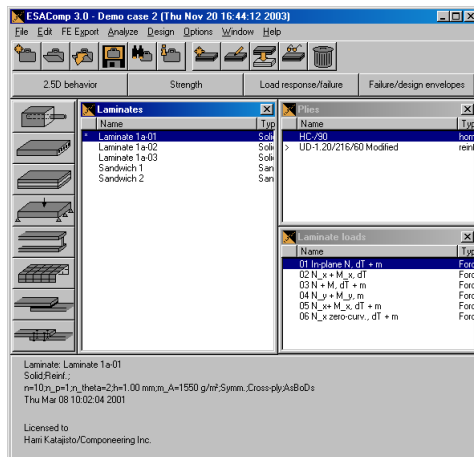
The interface between MSC.Patran Laminate Modeler and ESAComp allows two-way exchange of data:

- Import of materials and laminates from ESAComp to MSC.Laminate Modeler during zone definition.
- Export of materials, laminates and loads from MSC.Laminate Modeler to ESAComp during certification. Elements to be studied are selected in the Laminate Modeler and ESAComp is launched for detailed post processing.

Structural Analysis – MSC.Patran Laminate Modeler



Detailed Laminate Analysis – ESAComp



The ESAComp–MSC.Patran Laminate Modeler interface has been developed jointly by Compoeneering and MSC.Software. It is available in the software versions ESAComp 3.0 / MSC.Patran 2003 and newer.

Currently the interface capabilities are being enhanced to allow transfer of ESAComp results back to Patran to be displayed as contour plots.