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Ingenuity for life

Überreicht durch:



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What's new in Fibersim 15

Maximizing specification-driven composite design to enhance accuracy

Benefits

- Strengthen automation when designing ply boundaries with limited geometry
- Deliver increased efficiency throughout the development and manufacturing data generation process for parts with self-overlapping plies
- Reduce potential for errors during initial design iterations through bi-directional analysis
- Improve organized data management so you can spend more time on designing a part rather than finding the objects to work with on the design
- Facilitate review process for mass properties to ensure composite parts meet mass targets throughout the enterprise

Summary

The latest version of the Fibersim™ portfolio of software for composites engineering is used to optimize the end-to-end composite design and manufacturing workflow so users can deliver completed projects that close the gap on accuracy between as-designed and as-manufactured parts. Enhancements have been made to volume fill, spine-based transition, overlapping plies and producibility simulation, making it possible to accurately define and calculate outputs, significantly reducing the potential for errors in the initial design and iteration phase.

Updates have also been made to the computer-aided engineering (CAE)/Fibersim exchange, data filtering and the integration of Teamcenter® software, providing a more consistent and direct means for managing and communicating essential information. As a result, the project focus has shifted from managing data to design.

Efficiently define volume-fill part types

Using Fibersim 15 enables you to efficiently define volume-fill part types so you can achieve a more accurate manufacturing producibility simulation and flat-pattern generation based on draped surfaces. You are now able to use volume fill to accept multiple fill-to-surfaces that are parallel or at an angle to the original laminate surface. The user feedback and curve manipulation workflow has also been enhanced, which significantly reduces time spent on determining intersections of controlling volume surfaces to calculate ply boundaries.

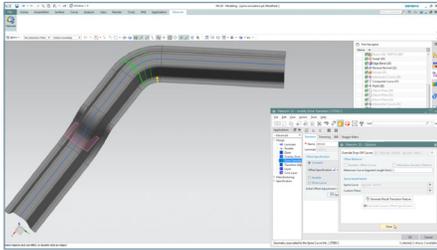
Automate design of spine-based transitions and ply boundaries

In Fibersim 15, spine-based transitions have been updated in order to improve the process design engineers must go through to create or modify ply boundaries. Using Fibersim enables you to automatically create transition curves using intersections with either a plane normal to a curve or a custom plane at an angle to a curve. This improvement will enable you to more quickly create or modify geometry to obtain the desired ply boundaries.

Increase efficiency of parts with self-overlapping plies

Improvements in Fibersim 15 make it easier for engineers to define a wrapped ply with a simple overlap that can be used to create cross sections, run manufacturing producibility calculations or generate flat patterns. This improvement replaces the once labor-intensive task of authoring, documenting, validating and generating

What's new in Fibersim 15



flat patterns for composite parts with self-overlapping plies. This single improvement will increase efficiency across the development and manufacturing process as it facilitates generating data for self-overlapping plies.

Close the gap between as-designed and as-manufactured fiber orientations

Fibersim 15 offers the user the ability to see what to expect manufacturing producibility to look like based on the simulation process (layup process) or fiber orientation in relation to the direction of the layup. Without this capability, parts are often overbuilt because of variances between as-designed and as-manufactured fiber orientations. As a result, manufacturing scrap rates are well above what is acceptable. This enhancement allows engineers to generate flat patterns based on the production process, and create more accurate correlations between as-designed and as-manufactured fiber orientations.

Eliminate potential for errors during initial design and iteration

A lot of attention was given to enhancing the iterative analysis and design workflow in Fibersim 15. Material specifications and plies can now be traced from the finite element model throughout the design process. This improvement will provide a cost-effective and efficient approach to bi-directional iteration with analysis, and prevent composite parts from being overbuilt due to lack of traceability.

Focus on design rather than data management

Data management capabilities such as sort, group and find have been upgraded in Fibersim 15. More time can now be spent designing a composite part instead of locating the right objects to work with on the design. Active laminate filtering allows all composite design objects in an assembly or part to be filtered by the laminate that is being worked on. Updates to the show-selected-filtering feature means

that data that has already been filtered can remain in the filtered state even after the user moves on to another object.

Facilitate the creation and sharing of composite data

In Fibersim 15 the integration with NX™ software and Teamcenter has been enhanced to provide an enterprise solution that makes it easy for users to create, manage, share and review composite design data during every step of the part development process. New improvements allow designers to share characteristics of their composite designs, such as mass, center of gravity and moment of inertia, through an assert into NX weight management, which then populates the data in Teamcenter. Single sign-on for Teamcenter has also been implemented in Fibersim 15.

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