SIEMENS
Ingenuity for life

Fibersim Flat Pattern Export

Generating optimized flat pattern data for nesting and automated cutting

Benefits

- Efficiently exports the most accurate flat patterns, eliminating the trial-and-error aspect of creating templates
- Generates flat patterns optimized for any nesting or automated cutting system
- Ensures data management and revision control when used with Teamcenter and the Fibersim integration with Teamcenter

Features

- Exports flat patterns for leading nesting and cutting solutions in native formats
- Optimizes flat patterns during export to achieve the best cut rates

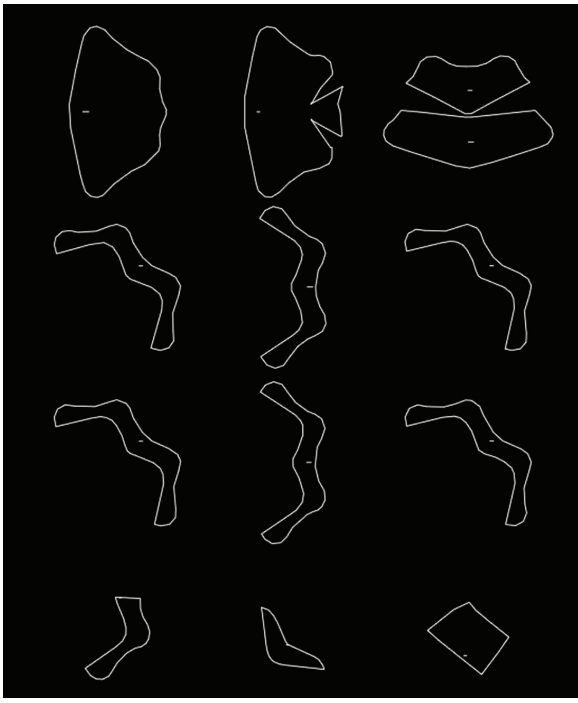
Summary

Deriving a flat pattern template from a mold tool is time-consuming and inaccurate because it is based on a trial-and-error process. However, the Flat Pattern Export module in the Fibersim™ portfolio of software for composites engineering from Siemens Digital Industries Software eliminates the challenge of developing 2D flat patterns by re-using the engineered composite definition.

The Flat Pattern Export module can be used to automatically generate flat pattern data files from the engineering definition and leading-edge producibility simulations that take into account part shape, material and layup process, thus eliminating trial-and-error scrap. Production quality is enhanced with the ability to provide information in the flat pattern file, such as markers that are used to assist in the layup process.

Working directly from the composite model, the flat patterns can be automatically created and managed. Customers using Teamcenter and the Fibersim integration with Teamcenter have the added benefit of revision controlled flat pattern data.

As a result, the Flat Pattern Export module reduces errors and saves valuable time through process automation. The Flat Pattern Export module increases engineering and manufacturing productivity and makes it easy to update and maintain flat pattern data. Fibersim flat pattern software supports NX™ software, CATIA V5 and PTC Creo.



Pictured are flat patterns for a shroud that have been automatically generated and sorted using the flat pattern layout function in Fibersim. The flat patterns are optimized and exported directly from the composite model, ensuring that they are always accurate.

Fibersim Flat Pattern Export

Ensures data integrity and accuracy
The Flat Pattern Export module provides a seamless export of flat pattern data from the composite master model to Teamcenter, or a specified directory for use with a nesting solution or automated cutting system. Engineering changes are communicated quickly and correctly to the manufacturing floor due to process automation.

Optimizes flat patterns for cutting
The Flat Pattern Export module enables you to optimize flat patterns so that manufacturing productivity is maximized. Cutting time is decreased by optimizing flat pattern geometry through line smoothing and filleting operations that minimize stop and start sequences. Sharp corners and line segments in the flat patterns are detected and optimized, allowing the cutter to proceed at a smooth, consistent rate.

Maintains flat pattern attributes
Existing attributes from the ply definition, including part name, ply name, material, orientation and sequence, are included in the files that are exported to the nesting and cutting systems. Attributes such as laminate name, ply name and material are automatically oriented to fit on the flat pattern, and markers that are used to assist in the layup are placed on the appropriate layer for printing if the automated cutter is equipped for it. That eliminates the need for the tedious and error-prone process of manually creating or modifying information for these systems.

Flexibility for users
In addition to generating native format input files for all major automated cutting and nesting systems, Fibersim flat pattern export software generates standard IGES and DXF files to maximize the flexibility of data usage. The Flat Pattern Export module also allows you to list flat patterns and associated attributes and customize the information for export.

Siemens Digital Industries Software
siemens.com/plm

Americas +1 314 264 8499
Europe +44 (0) 1276 413200
Asia-Pacific +852 2230 3333

29835-C13 5/19 Y