Creo Composite Design and Manufacturing Extensions

Design and manufacture lightweight, durable parts

From the Aerospace and Defense industry to the Wind Energy industry, composites are increasingly being incorporated into the engineering design process. Composites offer a unique solution to optimizing products or parts.

Throughout the engineering design process, there are a multitude of ways one can navigate building a product or part. Traditional methods of manufacturing look like high-speed milling or molding. More and more companies are taking advantage of the benefits of composite materials within their design process. Using these materials offers a sustainable and optimized solution for the engineering design process.

Carbon fiber, fiberglass and Kevlar are some examples of composite materials. These composite materials are often woven or stitched together to form a fabric. The design is shaped by stacking the composite materials on top of one another and using a resin to glue the pieces together. Once the materials harden, you're left with a strong yet lightweight structure.

Composites provide the benefit of being able to mix and match fabric to create strength, flexibility, and impact absorption very locally within the design. The resulting structure that we are left with is incredibly optimized for meeting your correct engineering goals.

Introducing Creo Composite Design and Manufacturing Extension (CDM) and Creo Composite

Design and Manufacturing Advanced Extension (CDMA—the latest additions to the Creo suite. While both extensions provide composite support, CDMA is more focused on manufacturing benefits and more advanced workflows when designing composites.
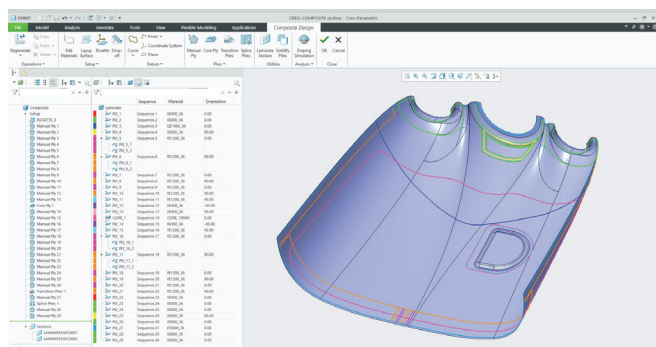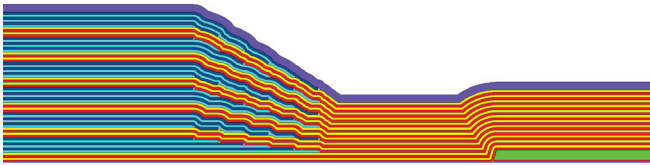
Key Benefits

- Fully integrates composite design into Creo

- Design, simulate and validate composite products without leaving the Creo environment

- Ensures ply producibility and correct flat ply contours for manufacturing

- Automates the generation of process documentation

- Reduces production rework and scrap

- Fully integrates automatic interaction with Creo Simulate

- Includes transition and splicing features

Capabilities and Specifications

Ply Features

- Aid ply definitions with new curve types

- Support for cores, including defining tapers

- Easily visualize ply stackup with special ply section

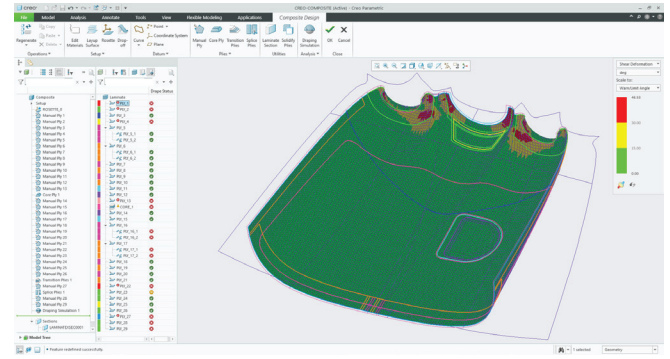- Automate plybook generation

Lamination

- Easily manage ply management through a dedicated laminate tree

- Solid laminate and IML (inner mold line) quilt option

- Calculate full laminate mass properties

Analysis and Integration

- Producibility analysis with advanced draping simulation

- Roll width violation alert

- Full integration with Creo Simulate

- Integration with Windchill

- Interfacing to 3rd party analysis tools

Language Support

English, German, French, Italian, Spanish, Japanese, Chinese (Simplified and Traditional), and Korean, Russian and Brazilian Portuguese.

Platform Support and System Requirements

For more information and system requirements, visit: PTC Support page.

To Learn More

Visit: https://www.ptc.com/en/products/creo

>>> THE CREO ADVANTAGE

Creo is the 3D CAD solution that helps you accelerate product innovation to build better products faster. Easy-to-learn Creo uses a model-based approach to seamlessly take you from the earliest phases of product design to manufacturing and beyond. Combining powerful, proven functionality with new technologies including generative design, real-time simulation, advanced manufacturing, IIoT and augmented reality, Creo helps you iterate faster, reduce costs and improve product quality. Creo is also available as a SaaS product, providing innovative cloud-based tools for real-time collaboration and streamlined license management and deployment. The world of product development moves quickly, and only Creo delivers the transformative tools you need to build competitive advantage and gain market share.