

Martifer Group

INTEGRATING A GLOBAL CONSTRUCTION, ENERGY, AND BIOFUELS COMPANY WITH SOLIDWORKS



Martifer uses SolidWorks CAD, Simulation, and Enterprise PDM software to manage its explosive growth in product development.

CHALLENGE:

Integrate a global enterprise spanning 20 countries to leverage the company's diverse expertise and decrease production costs.

SOLUTION:

Standardize on SolidWorks integrated CAD/CAE/PDM solutions to manage the company's diverse operations and design data.

RESULTS:

- Reduced development cycles by 15 percent
- Increased innovation
- Decreased material costs
- Integrated a diverse global organization

Martifer Group is on a mission to remake the way the world looks and runs. From the stunning steel structures and aluminum and glass façades that the company has created for stadiums, shopping malls, and airports to the wind tower farms, renewable energy systems, and biofuels equipment it manufactures, Martifer has grown to become a global leader in the development of large-scale metallic structures and cutting-edge energy technologies.

Managing the company's explosive growth – Martifer now comprises 120 companies across 20 countries – has presented a host of technological challenges, according to Antônio Caroço, director of information systems and best practices at Martifer. "The company has grown so quickly that we needed to take our systems and processes to a completely new level," Caroço explains. "We embarked on a huge transformation program that involved a thorough assessment of our processes, software, and systems in an effort to integrate our design work, take advantage of our diverse expertise, and generate greater efficiencies across the organization.

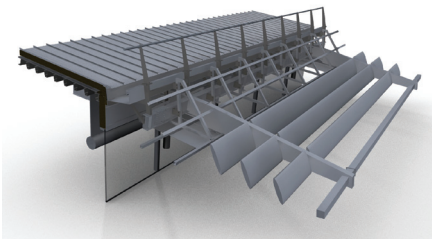
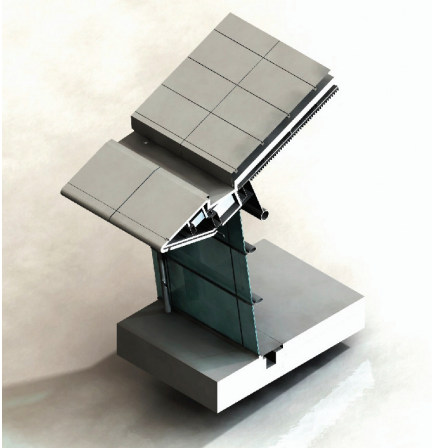
"Our design groups used to work in silos," Caroço continues. "We wanted to standardize our software solutions and establish best practices as a strategy for encouraging our divisions to work more closely together. After exploring the product lifecycle management (PLM) concept, we ultimately decided to work with Sqédio (Integrated Technology Solutions) to further customize and expand upon our proven SolidWorks® CAD and CAE solutions by adding SolidWorks Enterprise PDM (product data management) software."

Martifer chose to implement SolidWorks Enterprise PDM software because of the success it had realized with SolidWorks products, the flexibility it afforded in customizing solutions, and the system's ease of use. The company implemented 100 seats of SolidWorks Enterprise PDM at its Aluminum division, and 30 seats at its Wind Energy Systems division, in addition to its 49 licenses of SolidWorks Premium, seven licenses of SolidWorks Simulation Premium, and four licenses of SolidWorks Flow Simulation software. Martifer has since added 3DVIA Composer documentation software at its wind tower factory.



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**António Caroço,
Director of Information Systems
and Best Practices**



From automating the design of sophisticated aluminum structures to simulating weight, wind, and temperature loads, SolidWorks gives Martifer the solutions it needs to grow and compete on a global scale.

Design success expands usage

Although the Wind Energy Systems division blazed the SolidWorks trail at Martifer with its first seat of SolidWorks CAD software in 2004, the company's subsequent implementation of SolidWorks at Martifer Aluminum in 2006 set the stage for the shortened design cycles – a 15 percent reduction – and reduced production costs the company has enjoyed since moving to SolidWorks. Working with Sqédio and the open SolidWorks Application Programming Interface (API), Martifer undertook one of the largest SolidWorks customization projects to date by automating the design of sophisticated aluminum structures.

"The ability to work with very complex 3D structures in such an automated way really differentiates our approach to the market and gives us a competitive advantage," Caroço maintains. "SolidWorks enables us to do what no one else can. The success of our CAD effort gave us the confidence to move ahead with additional SolidWorks Simulation and PDM tools."

Simulation pays dividends

Integrated SolidWorks Simulation software has enabled Martifer engineers to validate conceptual designs early in the development process, resulting in reduced materials costs while avoiding costly errors and prototypes. The integrated solution decreases production costs and shortens development time throughout the company, including in its metallic construction, gearbox, wind tower, solar array, and wave energy operations.

"SolidWorks Simulation tools allow us not only to study the effects of stress, flow, and temperature on our designs, but also to ensure an appropriate factor of safety," Caroço notes. "These capabilities enable us to save time and reduce costs while increasing innovation and improving our entire product line."

PDM automates wind tower factory

The implementation of SolidWorks Enterprise PDM software at the Martifer Wind Energy Systems division marked the first step in a company-wide deployment that is designed to solidify best practices and establish standardized workflows across Martifer. Working with Sqédio and the SolidWorks API, Martifer customized its PDM solution to meet its specific needs. In addition to facilitating design revision control, promoting collaboration, and encouraging design reuse, the system has reduced the company's data storage expenses.

"Remaining autonomous is a part of Martifer's DNA," Caroço stresses. "We view PDM as the key data foundation of the organization and plan on replicating our initial implementation throughout Martifer. SolidWorks Enterprise PDM fits our needs because it is easy to learn, requiring minimal training; uses open source code, making it easy to customize; and is integrated with our engineering systems, supporting our goals of formalizing best practices and improving efficiency."



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