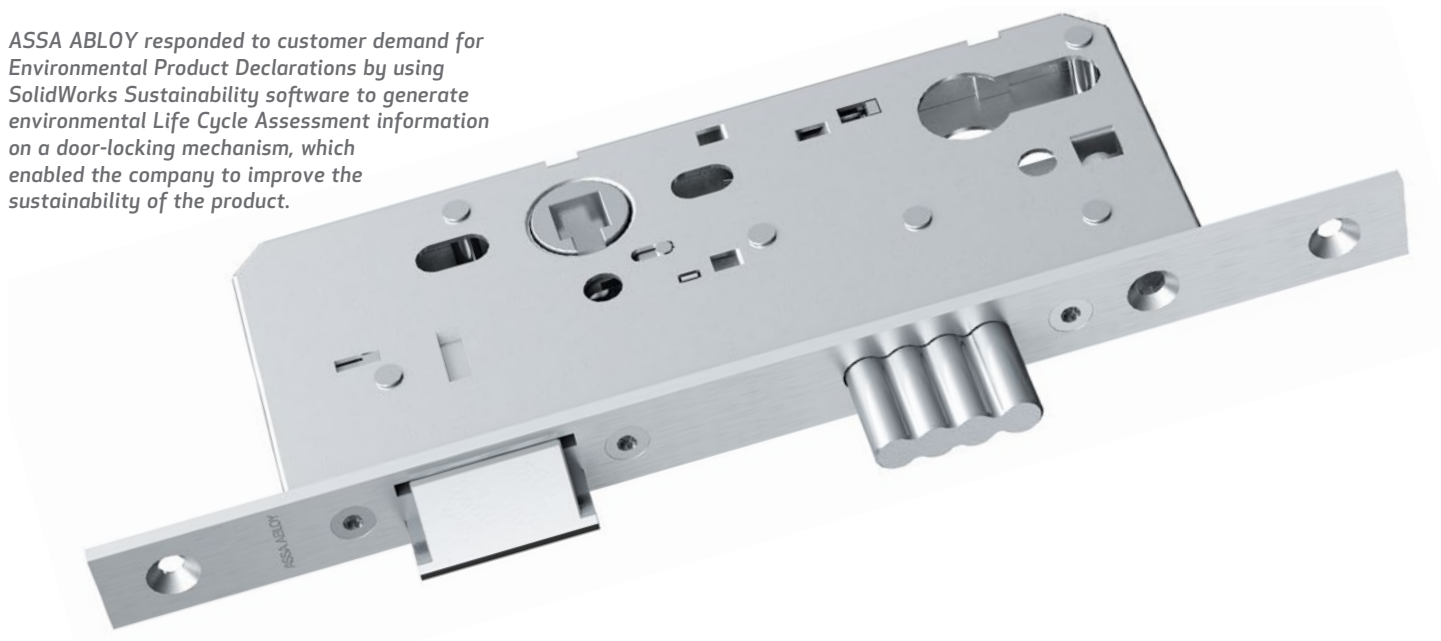


ASSA ABLOY SICHERHEITSTECHNIK GMBH

Adding green locks to green buildings with SolidWorks Sustainability

ASSA ABLOY responded to customer demand for Environmental Product Declarations by using SolidWorks Sustainability software to generate environmental Life Cycle Assessment information on a door-locking mechanism, which enabled the company to improve the sustainability of the product.



When it comes to opening doors—whether to events, museums, airports, hotel rooms, office buildings, or homes—an ASSA ABLOY product is probably at work. As the global leader in door-opening solutions, ASSA ABLOY offers a complete range of locking, access control, identification technology, entrance automation, and hotel security systems. With more than 43,000 employees and annual revenue of SEK 5.4 billion, the manufacturer maintains market leadership positions in Europe, North America, Asia, and the Pacific.

The company attributes its success to its commitment to listening to its customers. ASSA ABLOY periodically conducts “voice of the customer” interviews with architects, door manufacturers, and others involved in specifying and purchasing its products. According to Markus Bade, director of innovation, Central Europe, recent customer outreach has resulted in one of the company’s most important R&D projects: implementing a sustainable product development program.

“Our customers are asking for Environmental Product Declarations (EPDs) for our products,” Bade says. “They need this information to attain DGNB, LEED, and BREEAM environmental certifications for green buildings. ASSA ABLOY will need to provide environmental impact information on our products as a matter of doing business.”

The first step in calculating an EPD—an environmental Life Cycle Assessment (LCA) study that is tailored to the building construction industry—is to conduct baseline sustainable engineering on an existing product. ASSA ABLOY’s engineering team in the Netherlands undertook a pilot project to redesign a door-locking mechanism. The Dutch team needed an engineering tool to assess and compare the environmental impacts of existing and modified designs. They chose SolidWorks® Sustainability software.

“We discovered SolidWorks Sustainability software at an innovation conference and decided to use it on the pilot project,” Bade recalls. “The next era in innovation will be about sustainability. Many of our operations use SolidWorks design software, so we had confidence that SolidWorks Sustainability software could help our team improve the sustainability of this product.”

Challenge:

Add sustainable design practices to the development of doors and locking systems to meet customer demand for environmental impact information for inclusion in green buildings.

Solution:

Implement SolidWorks Sustainability software as a first step toward applying sustainable design practices and generating Environmental Product Declarations for its products.

Results:

- Cut product cost by 15 percent
- Lessened product environmental impact
- Reduced material usage
- Launched effort to create EPD generator

Saving money and protecting the environment

Using SolidWorks Sustainability environmental impact assessment and SolidWorks Simulation design analysis software, ASSA ABLOY engineers designed a new door-locking mechanism. The team not only lessened the product's environmental impact, they also reduced manufacturing costs by 15 percent. The team cut the number of materials used, replaced custom nickel- and chrome-plated materials with stainless steel, and redesigned the latch tail. SolidWorks Simulation analyses indicated that the design was overly strong, so they also reduced material weight and thickness. Other changes included closing the lock case, riveting the cover, and screwing on the front plate.

"The material savings are quite dramatic," Bade stresses. "When you cast nearly a million metal parts each year, every gram that you can cut from each part means less impact on the environment and lower cost. We were pleasantly surprised to learn that by evaluating the environmental impact of a product, we can save money and protect the environment."

The first step toward sustainable design

The success of the project has led ASSA ABLOY to develop plans to incorporate SolidWorks Sustainability for new product development as well as modification of existing products. Although SolidWorks Sustainability produces accurate estimates of the carbon footprint, energy consumption, and water and air impacts associated with a particular design, the construction industry requires additional environmental data for an EPD.

Fortunately, the database inside SolidWorks Sustainability is provided by LCA industry leader and SolidWorks Partner PE International, Inc., and also drives additional environmental assessment solutions. "The SolidWorks Sustainability report is an excellent starting point for embracing sustainable design and provides the preliminary figures that we need to complete a full-scale LCA," Bade notes.

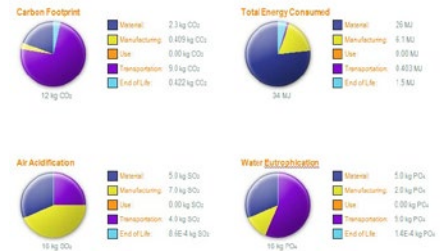
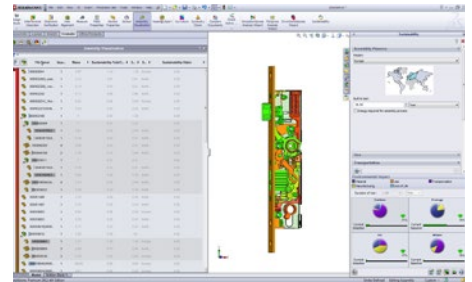
On the path to generating EPDs

ASSA ABLOY is working with PE International to develop a web-based EPD generator that builds on SolidWorks Sustainability environmental assessments. "The traditional business view of sustainable design is that it makes products more expensive," Bade explains. "The pilot project with SolidWorks Sustainability demonstrates that this view is invalid and that sustainable design practices can improve processes and save money.

"In many ways, sustainable design and EPDs have the same potential that ISO 9001 certification had 20 years ago," Bade adds. "At first, many thought that the ISO certification process just cost money. However, as companies completed the process and streamlined and improved their operations, efficiency and productivity grew, saving time and money. We envision a similar path for sustainable design. Companies that can show reduced environmental impacts will win out in the future."

"THE TRADITIONAL BUSINESS VIEW OF SUSTAINABLE DESIGN IS THAT IT MAKES PRODUCTS MORE EXPENSIVE. THE PILOT PROJECT WITH SOLIDWORKS SUSTAINABILITY DEMONSTRATES THAT THIS VIEW IS INVALID AND THAT SUSTAINABLE DESIGN PRACTICES CAN IMPROVE PROCESSES AND SAVE MONEY."

Markus Bade
Director of Innovation, Central Europe



Using SolidWorks Sustainability and SolidWorks Simulation tools, ASSA ABLOY not only made the door-locking mechanism design more sustainable but also reduced material costs.

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