CASE STUDY: Composite Garage Door

BACKGROUND

The client, one of the premier garage door companies in the world, wanted to grow their business. They had made a strategic decision to achieve this growth by delivering a differentiated class of premium products to the market. The premium product would be a line of fiberglass garage doors with the beauty of natural wood and the durability of steel.

They chose Aptimise as a key partner to lead the project. The project would include market research, design, specification, process development, and prototyping.

CHALLENGES

The first challenge was in the size and molding detail or the product. Garage doors can be very large parts, up to 18 feet long and 8 feet tall. The individual panels are manufactured from sheet molding compound (SMC), the same fiberglass body material as the Chevy Corvette, using up to 2000 tons of pressure. In addition, the final product required molded-in high definition wood grain. Further, new, precise processing controls for finishing were required to ensure color matching of multiple panels installed together.

Adding to the project's complexity, resources from five different U.S. and international companies would be involved in the project.

Finally, the client wanted to display product at the International Builders Show (IBS) – a key marketing opportunity that occurs just once per year. This left just 14 weeks to go from concept to marketing-ready prototypes. Given the compressed development schedule, project planning and execution would be critical.

SOLUTIONS

To meet these challenges, Aptimise leveraged product development and project management disciplines. Thus, they were able to not only assist the client with defining the end product, but were also able to orchestrate the activities of several groups working in multiple locations.

A prototype field installation: Aptimise fully developed the technology for the door's window frames in the same high definition wood appearance. This subproject was completed in only four weeks.

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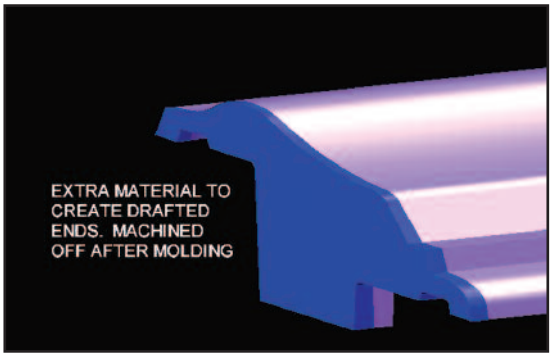
877-258-3255 www.aptimise.com 9910 Dupont Circle Drive East ■ Suite 140 ■ Fort Wayne, IN 46825

CASE STUDY: Composite Garage Door *(continued)*

SOLUTIONS

Initial efforts were focused on transforming the client's concept into a fully specified design. Aptimise supplemented marketing data on the U.S. garage industry. Then, they drew upon their expertise in market popularity of various wood species and molding techniques to achieve those wood looks.

Next, Aptimise provided insights into aesthetics of wood layout and worked with the customer's designers, the molder's engineers, and the toolmaker's craftsmen to develop state-of-the-art compression molds. As part of this service, Aptimise provided the final 3-D solid CAD models of the product, enabling transfer of data direct to the toolmaker's machining center.

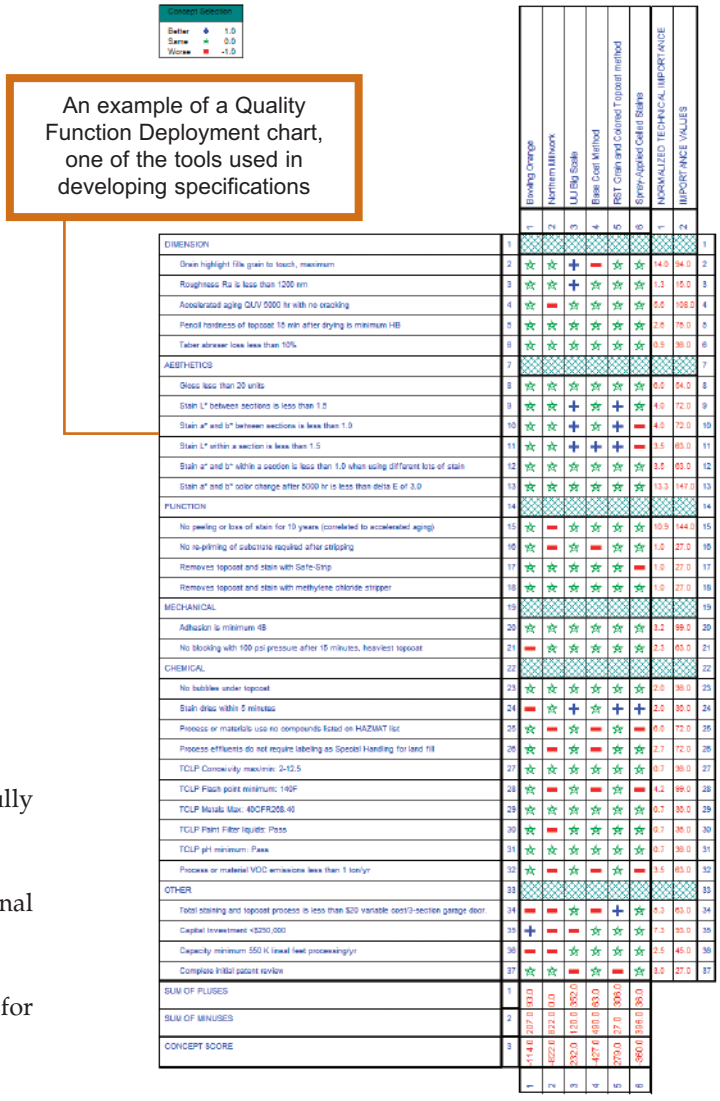


In development of a manufacturing process, Aptimise assisted the client's engineering staff with process specifications, adhesive selection, and materials handling.

In addition, Aptimise fully developed the technology for the door's window frames in the same high definition wood appearance. This subproject was completed in only four weeks.

Finally, Aptimise delivered prototypes needed for the IBS, as well as preparatory samples.

An example of a Quality Function Deployment chart, one of the tools used in developing specifications



RESULTS

The client unveiled their new product line at the IBS as the start of a successful product launch. The award-winning product has been embraced by the market. As a result, the client has requested that Aptimise assist with building additional molds.

KEY ACHIEVEMENTS

- Project completed on time, on budget, and fully meeting client specifications.
- Product readily accepted by market – additional tools ordered.
- Client received nationally recognized award for this innovative product.