

# LIXIL's American Standard Brand Drives Faster Time-To-Market

With Creo, American Standard streamlines the product development process



## Challenges:

In order to remain highly competitive in the kitchen and bath industry, American Standard had to significantly streamline product development in order to drive faster time-to-market.

## Results:

Through the power of Creo, American Standard was able to realize faster time-to-market. By implementing a Model-Based Product Development (MBPD) approach, late-stage changes were addressed immediately, and the design resolution only took a day, whereas in other parts of the business it would take weeks. Using Creo's surfacing and simulation capabilities, American Standard was able to design and test complex and innovative products with a confidence level in the 75-85% range, reducing iterations of prototyping and testing.

## Products Used:

Creo  
Windchill

## Build a Better Home with LIXIL

LIXIL, a multi-billion-dollar company, with brands such as American Standard and Grohe, is a leading manufacturer of kitchen and bath products including fittings, ceramics, and bathing fixtures. For more than 140 years, the American Standard Brand has been committed to making better homes for everyone, everywhere. Driven by ever-changing consumer needs, American Standard provides unmatched quality for a breadth of essential products.

## The Native CAD File and MBPD

With shifting consumer demands, American Standard must address these requests as quickly and efficiently as possible. With different segments, industries and regions spread across the company, getting all team members aligned on a particular product development process concurrently, especially in the industrial design stage, is a time-consuming problem. As different parts of the business use various software packages, they take a CAD file, convert it to a STEP file, and send it to R&D, leading to time wastage due to file duplication. Because there isn't a consistent, native CAD file that is being leveraged across the enterprise, some of American Standard's segments are at a disadvantage.

When American Standard began using Creo for mold design and CNC Programming, they were able to make product parts within their own factory. Once a late-stage high defect issue was detected, root cause analysis determined that a design modification was necessary to remedy the issue. In some parts

of the company, to address this issue, engineers would need to go back to the industrial design team, open the file in a different platform, replicate the change, and then bring it back to R&D—losing out on valuable time-to-market.

Instead, American Standard connects with the Creo-using industrial designer and works on the solution together. In this case, within an hour, design engineers were able to examine the data from manufacturing, identify the issue, determine a design solution in the latest released file stored in Windchill and have the solution directly put into an Engineering Change Request (ECR) so that a change notice can be processed almost instantly. With this one native CAD file being pushed throughout the business, change requests, change notices and even the tooling modifications can be updated very quickly. In this situation, once the design engineers had the data, the design solution took one day. In other parts of the business, it takes weeks.



**Once the design engineers had the data, the design solution took one day. In other parts of the business, it takes weeks.**

Anthony Esposito, Leader, Americas R&D Fixtures, Ceramics and Bathings

That's powerful— American Standard drives faster time-to-market and catches late-stage errors because they are working concurrently and agilely within the same file. This is the deciding factor in what keeps a customer happy or not. Through this **Model-Based Product Development** (MBPD) approach, in R&D and industrial design, a process that used to be 15 to 16 months now takes about 12 to 14 months. That's about two months taken out of the entire design process and two months faster to delivering the final product.

When choosing a CAD solution, American Standard needed to determine whether the solution could deliver the surfaces they needed to get a high aesthetic and high performance. American Standard utilizes tool design in two different ways. For ceramics, surfacing is used to build the tool directly within a surface. For fittings (faucets, shower heads, etc.), American Standard uses the tool design module within Creo. After the overall process of designing the product and shrinking it, the two files are linked together, and the model is used to design and develop molds all within Creo.



## Surfacing Drives Product Aesthetic and Performance

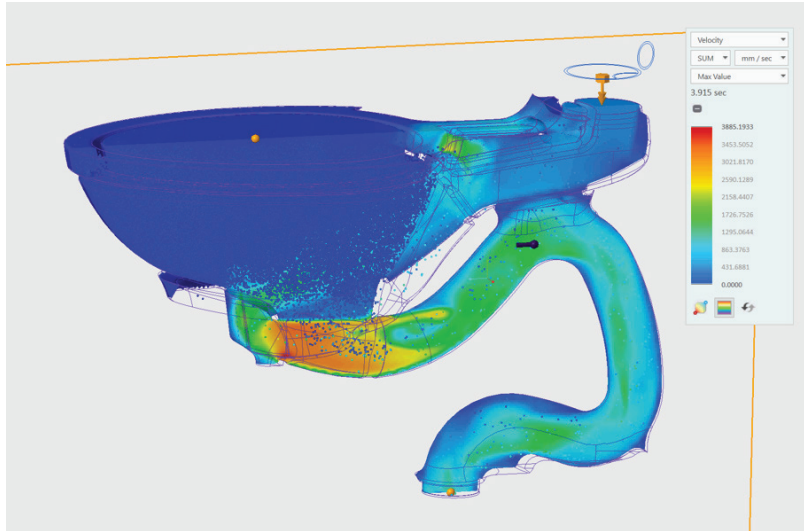
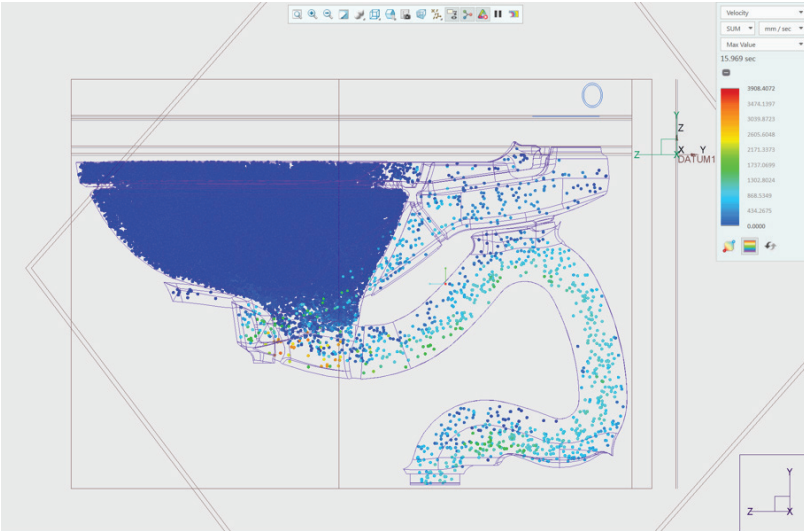
Manufacturing ceramics is a complex process. And the exterior surface of a product is the highly aesthetic portion of the product that the customer immediately sees. But the reality is, is that the exterior impacts the interior of the piece. And inside is where all the water travels. To ensure the product's high performance and water efficiency, it's crucial for American Standard to get the exterior surfacing right, serving both manufacturing and performance needs.

Using Creo, American Standard hardly ever starts their designs from scratch. They typically take something that is existing—whether it be the master, model, or mold and all the experience they have within the model. Creo's surfacing features and reliable referencing help design engineers navigate the model smoothly, especially when making changes. By using parametric linking from file to file, American Standard fully utilizes Creo's surfacing capabilities.

## The Power of Simulation

Since Creo and Ansys partnered, American Standard has been able to expand their capabilities to implement simulation product development. With this partnership, American Standard has been able to expand their computer-aided engineering capabilities to mainly focus on Finite Element Analysis (FEA). And with this, American Standard was able to design and test complex and innovative products with a confidence level in the 75-85% range, reducing iterations of prototyping and testing. By quickly being able to make design modifications that drive time-to-market with Creo Ansys





Simulation (CAS), there's less time wasted taking the file out of Creo and placing it into the separate Ansys solution.



**With [Creo Ansys Simulation], American Standard was able to design and test complex and innovative products with a confidence level in the 75-85% range, reducing iterations of prototyping and testing.**

American Standard has just recently added the use of Creo Flow Analysis (CFA) to their processes. Previously

two analysts were responsible for review of newer developments, innovations and complex products. With CFA and CAS, the workload is shared between these analysts and 20 design engineers. By being able to cut down on smaller problems and quickly get design direction, American Standard can easily cash in on time savings.

### Conclusion

As American Standard applies and grows their use of MBPD, surfacing and simulation, they look to the future of their organization. American Standard aims to expand its focus on data-driven design and concurrent engineering. The more data they have, the better decisions they can make, resulting in a more streamlined product development process and faster time-to-market. By expanding on their CAD capabilities, American Standard can continue to design and develop innovative, high-performing products.

© 2023, PTC Inc. (PTC). All rights reserved. Information described herein is furnished for informational use only, is subject to change without notice, and should not be taken as a guarantee, commitment, or offer by PTC. PTC, the PTC logo, and all PTC product names and logos are trademarks or registered trademarks of PTC and/or its subsidiaries in the United States and other countries. All other product or company names are property of their respective owners. The timing of any product release, including any features or functionality, is subject to change at PTC's discretion.