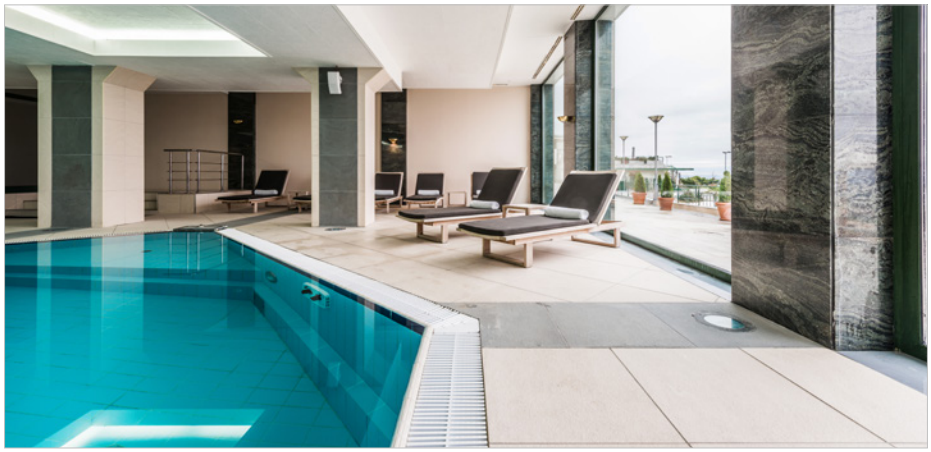
CASE STUDY

High-End Pool and Spa Manufacturer Puts 3D Printing Technology to Work

Helped Customer Improve Valve Design



Fluidra, a maker of heaters, pumps and filters for the international pool and spa industry, needed help developing a series of fluid valves, hoping to replace the standard injected valve with a 3D printed version that would perform just as well. The consistent repeatability and lower cost of a 3D printed assembly were promising, but the current design was experiencing strong warpage and taking longer than one unit per day during printing — too slow to produce the needed 400 units per year on a single printer.

Nexeo Plastics' 3D printing team went to work, addressing several design and printing constraints. Our professionals alerted the customer to a number of 3D printing best practices based on the desired product attributes, helping Fluidra select a filament material that would perform given the mechanical requirements.

DSM's Novamid®ID 1030 was chosen for its strength, toughness and relative ease of use. The design was optimized to further reduce the amount of material required and increase printing speed. Moving to a material-open printing system also allowed Fluidra to use Nexeo Plastics' high-performance filaments.

For these valves, Fluidra replaced its traditional injected-mold production system with the lighter and faster 3D printed application. Using the optimized file with Novamid®ID 1030 reduced the valves' weight by 60%, allowing a 50% reduction in printing time and reducing material costs. Overall, warpage was eliminated, delivering a performance valve with significant savings.

Discover how a partnership with Nexeo Plastics can contribute to your bottom line and help achieve manufacturing efficiencies.

AT-A-GLANCE

Recorded Benefits

- 3D printing solution is customizable and repeatable
- Use of high-performance filaments helped alleviate warpage issues
- Reduced valve weight saved printing time and material costs

Challenge

A high-end pool and spa manufacturer sought help applying 3D printing technology to the production of a series of pump valves.

Solution

Nexeo Plastics 3D helped the customer redesign the valve and offered a high-performance DSM filament material to achieve a successful 3D printed piece.

Result

The new part was 60% lighter, resulting in reduced material costs and shorter printer times while still supporting a pressure resistance up to 10 bars.

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