

3D Printing Optimizes Wastewater Treatment

Enhanced design provides superior performance and durability for industrial filtration screens

OVERVIEW

The treatment of wastewater to a varying levels of quality satisfies demand from different sectors, including industry and agriculture and can be processed in ways that support the environment. To increase the efficiency of removing solids from incoming water at wastewater treatment facilities, Johnson Screens turned to the Additive Manufacturing (AM) experts by choosing the HP Jet Fusion 5210 to print HP 3D High Reusability PP to create modular high-efficiency filtration panels along with Evok3D as the supplier, installer and maintenance partner in Australia. This innovative use of 3D printing offered an optimized solutions while also reducing lead time, labor, and overall costs.

QUICK FACTS

Material:

▪ HP 3D High Reusability PP

Technology:

▪ Multi Jet Fusion

Partner:



Johnson Screens, a brand of Aqseptence Group, is the leading global provider of screening and auxiliary solutions that support various industries. With a vision of creating a world where protecting lives and precious resources comes first, for 120 years the company has collaborated with industries and governments to achieve that shared goal to reduce harmful waste, provide clean water, and make the best use of earth's essential natural resources.



40% reduction in assembly time due to the design freedom



Decrease in lead time of up to 10 weeks

Challenge: Increase the efficiency of removing solids from incoming water at wastewater treatment facilities.

Utilizing the [HP Jet Fusion 5210](#) to print with [HP 3D High Reusability PP](#), Johnson Screens was able to create modular high-efficiency filtration panels. Polypropylene, a cost-effective, water-resistant and resilient material, offers high chemical resistance at a lower cost than comparable materials. After over 18 months in harsh real-world service, the new components outperformed the traditional stainless-steel filters. This collaborative partnership between Johnson Screens, HP and Forward AM provided the advanced technology needed to implement systems and meet the anticipated demand.

"We have seen major savings in lead time (up to ten weeks) and, due to the design freedom provided by the additive manufacturing process, achieved a 40% reduction in assembly time. That has led to improved cost and throughput in our Australian facility that we plan to roll out globally. Polypropylene, a cost-effective yet resilient material, is much better suited for filtration. We use HP's fully integrated post-process unpacking solution to process and recover the majority of powder without incurring high labor usage. After this, we finalize our parts with a media cleaning system and 100% inspection."

-- Denys Visser, Global Product and Research Manager for Johnson Screens



Challenge: Reduce lead time, labor, and overall costs.

Innovative materials like HP 3D High Reusability PP and optimized part design resulted in cost-savings, a decrease in lead time and the complete design freedom provided by the AM process. The successful implementation, testing, and durability of this part have led Johnson Screens to move forward with plans to roll out this product globally. The effective utilization of the principles of AM has opened new doors for Johnson Screens, and they continue to develop and implement 3D printing solutions across various applications throughout their product offerings.

Learn more about HP 3D High Reusability PP

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