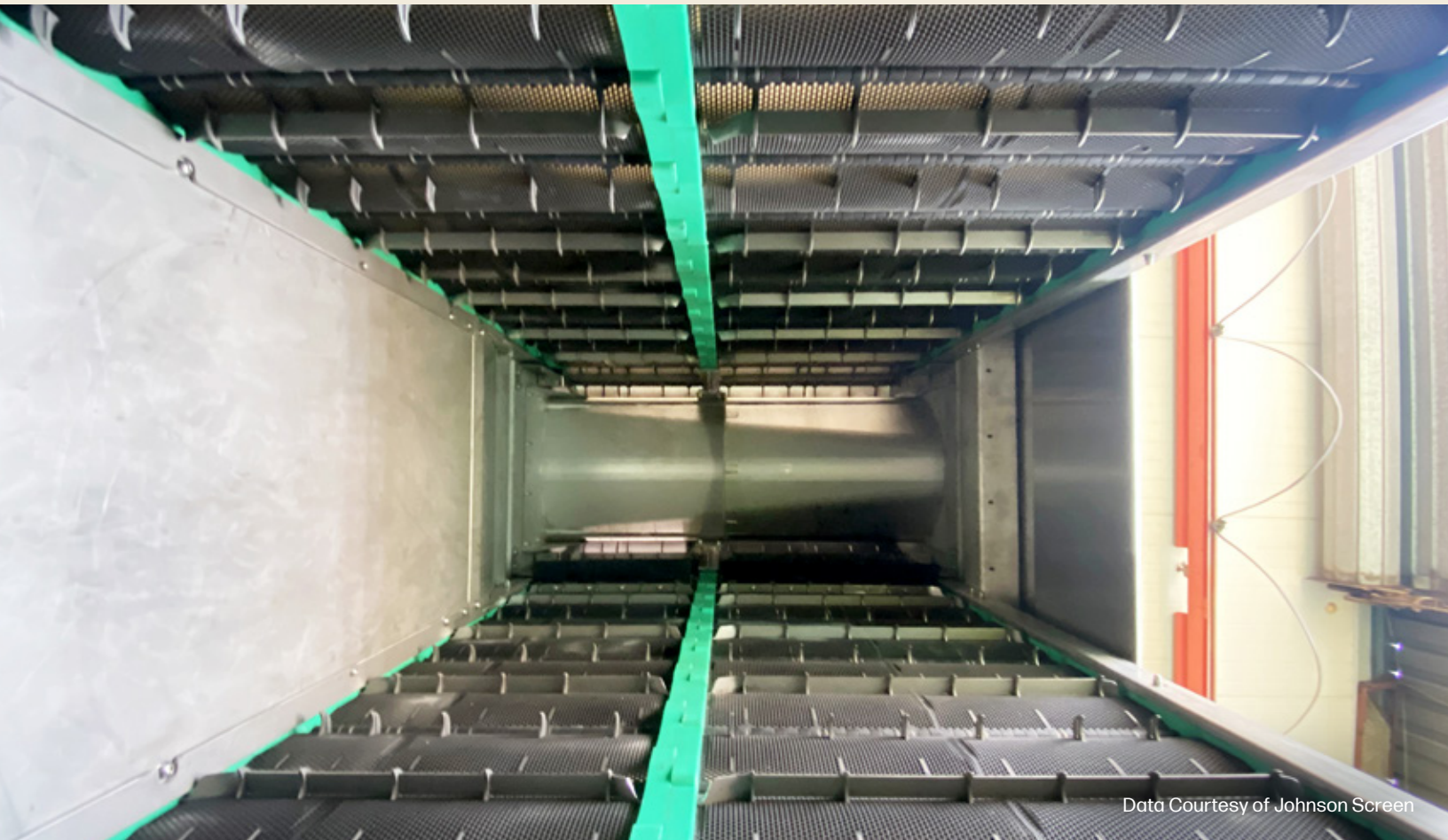


Johnson Screens increases cost efficiency through innovative 3D printing using HP Multi Jet Fusion Technology

Additive manufacturing (AM) is revolutionizing the way components are produced and integrated into a range of industries. Johnson Screens, an Aqseptence Group brand, utilizes HP's Multi Jet Fusion 3D printing technology to create filtration belts for wastewater treatment. This innovative application demonstrates the potential of AM technology, paving the way for other forward-thinking companies to explore and embrace different possibilities in how they design, create, and deliver products.



Data Courtesy of Johnson Screen



Introduction

Johnson Screens, a leading global supplier of water filtration and separation products, has seen major advantages in lead time and reduced assembly time with the help of EVOK3D and the HP Jet Fusion 5210 3D Printing Solution.

Johnson Screens achieved improved cost and throughput in their facility by utilizing HP 3D High Reusability (HR) PP enabled by BASF, a cost-effective yet resilient material. After 12 months of harsh real-world service, the new components outperformed the traditional stainless-steel filters, demonstrating the successful start of their additive manufacturing journey—with many more products to come in the future.

Industry

Facilities services

Objective

Through Design for Additive Manufacturing (DfAM), Johnson Screens aimed to optimize the efficiency of an existing filtration belt used for removing solids from incoming wastewater in their treatment facility and take advantage of the design freedom offered by AM technology.

Technology | solution

HP Jet Fusion 5210 3D Printing Solution

Post processing: HP Jet Fusion 5200 Series 3D Automatic Unpacking Station

Sector

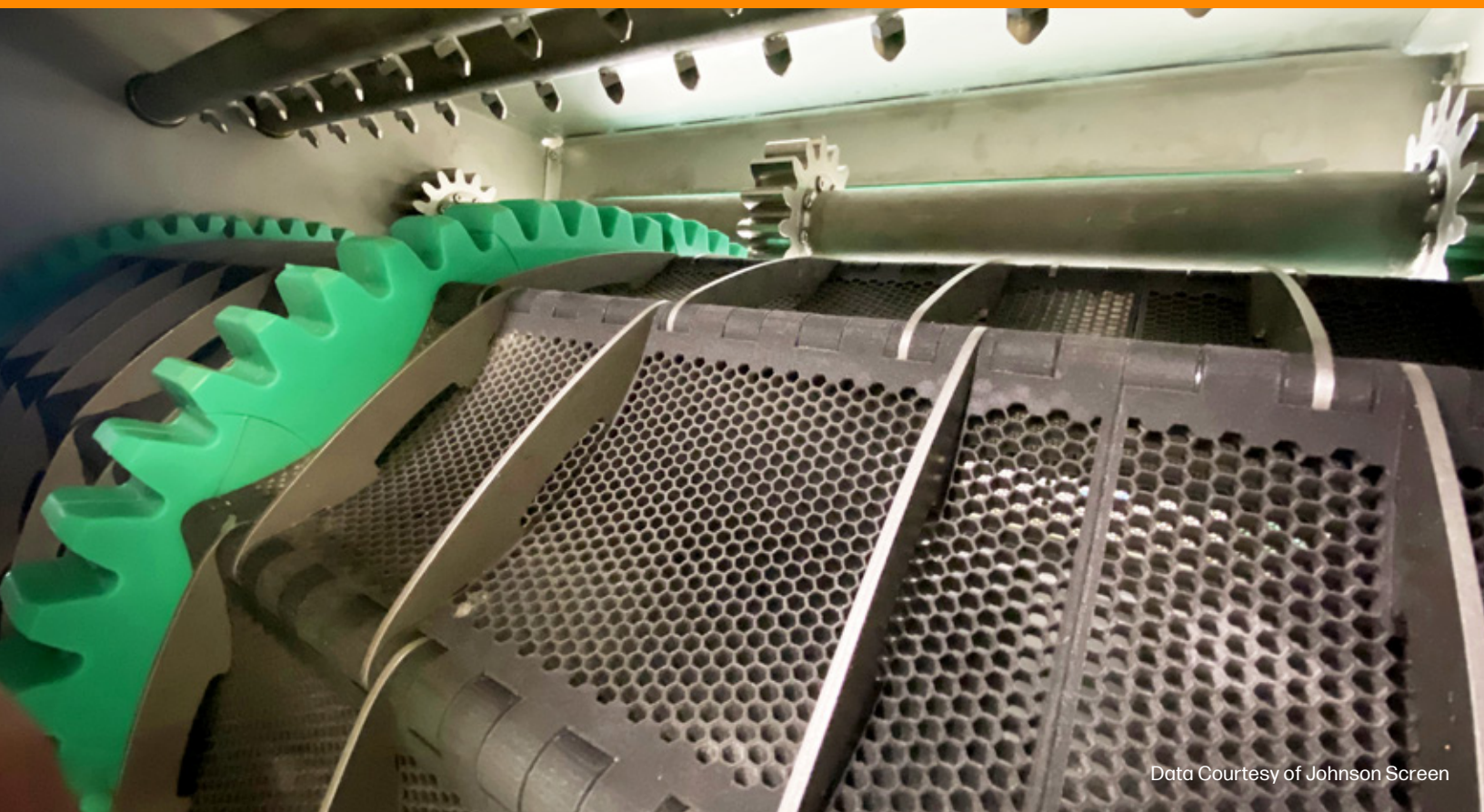
Water and wastewater treatment

Material

HP 3D HR PP enabled by BASF

Challenge

Johnson Screens searched for a solution to produce robust and cost-effective parts for their Aqseptence Bandscreen, a filter used for the filtration of water and wastewater. They needed these parts to be highly durable, capable of withstanding harsh real-world conditions, and have a long lifetime. Additionally, they sought to reduce lead time, assembly time, and associated costs with producing these parts.



Data Courtesy of Johnson Screen

Solution

After careful consideration, Johnson Screens selected EVOK3D as the partner of choice and invested in HP's Multi Jet Fusion technology to 3D print production parts in-house with HP 3D HR PP enabled by BASF, a cost-effective and resilient material better suited for filtration purposes. Moreover, their post-process unpacking solution and media cleaning systems processed and recovered the powder without incurring high labor costs.

The results exceeded expectations; after 12 months of service in real-world conditions, the 3D-printed screens outperformed traditional stainless steel filters. They also experienced no failures, with the first test panel still functioning as intended even after one and a half years of around-the-clock use.

Johnson Screens has significantly reduced lead time by up to 10 weeks, assembly time by 40%, and associated production costs through 3D printing filtration technology. This successful venture is a testament to the viability of this solution for producing reliable parts for real-world applications at economical prices.

HP's Jet Fusion 5200 series has allowed Johnson Screens to realize the full potential of additive manufacturing. With the printed part's isotropic mechanical properties, they can tweak mesh cell geometry for optimized filtration performance—applicable for pre-planned product launches and on-demand replacements due to extreme weather conditions.

