

Guardian Glass Trusts KONSOLIDATOR™ UF System to Treat Difficult Wastewater



Overview

Guardian Glass is one of the world's largest manufacturers of glass products and solutions. At Guardian's Carleton, MI plant, a state-of-the-art jumbo coater was installed to enhance float glass line capabilities. The jumbo coater allows a proprietary glass conditioning process to be added to the line which improves float glass quality, providing architects with a world-class environmental solution for the commercial building industry.

Wastewater from the coating process contains high levels of suspended solids that need to be removed prior to discharge to surface water outfall or recovery within the plant. Previously, the Guardian plant relied on chemically enhanced filter press technology that proved to be unproductive.

Objective

The staff at Guardian sought an alternative wastewater treatment solution to meet short and long-term needs of improving effluent quality while driving down costs.

Solution

Koch Separation Solutions (KSS) assisted Guardian Glass with benchtop testing, piloting, and full-scale implementation of a new wastewater treatment process at the Carleton facility. The key component of the solution consisted of a KONSOLIDATOR™ Ultrafiltration (UF) System equipped with FEG PLUS® tubular membranes. The KONSOLIDATOR system is designed to handle challenging wastewater contaminated with emulsified oils, grease, heavy metals, and high levels of suspended solids in a variety of industrial applications.

The K336 UF system chosen for this facility is one of seven standard models and contains 336 FEG PLUS tubular membranes with 740 ft² (~69 m²) of membrane area. It operates semi-automatically to produce about 20 gallons per minute (gpm), or about 4.5 m³/hr, and comes integrated with ancillary equipment and controls for simplified operation. The system treats a feed stream of 0.1% to 1% TSS and produces permeate ready for discharge or reuse with zero TSS, while at the same time reducing wastewater hauling volume and costs by over 98% on average.



Achievements

KSS earned the trust of the Guardian-Carleton team through a previous project for which KSS provided PURON® MP ultrafiltration and FLUID SYSTEMS® reverse osmosis technology to treat the feed water into the jumbo coater line. Seeing the value of working with a single dependable supplier to create an integrated system in their operation, the Guardian team now benefits from increased control over the entire coating process. The project was completed within the confines of limited floor space in the Carleton plant and sufficiently meets Guardian's immediate objectives while allowing for flexible process expansion in the future.

Takeaways

Using a collaborative approach, KSS and Guardian Glass achieved a cost-effective and sustainable wastewater treatment solution to remove suspended solids from the jumbo coater line. The KONSOLIDATOR™ UF system is built with robust tubular membranes and offers simple installation, operation, and maintenance. This project demonstrates KSS' commitment to fostering long-lasting relationships with customers through collaboration, industry-leading technology, and deep applications knowledge to create maximum-value separation solutions.



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