Efficient Color Dosing in Filament Winding: EnDiSys' Innovative Fluid Delivery Solution

EnDiSys is a company specializing in innovative fluid delivery solutions across various industries in Minnesota. They provide cutting-edge solutions designed to meter, measure, mix, control, dispense, and spray fluid materials for industrial, commercial, and mobile applications. This case study showcases how EnDiSys successfully transformed the filament winding process for a corporate client engaged in polyethylene bottle manufacturing.

Many corporations involved in filament winding of polyethylene bottles face customer demands for various colors. The existing practice involved manual mixing of different colors individually, adding and stirring pigments into the epoxy resin. This labor-intensive process not only resulted in excessive pigment waste but also required a complete system flush when switching between colors.

EnDiSys aimed to develop an efficient color dosing system that would enable the client to inject pigments on demand, eliminating the need for labor-intensive pre-mixing, reducing material waste, and enhancing overall productivity.

EnDiSys devised an innovative approach to incorporate a third stream injection for adding colorants. By implementing a colorant injection system, the client could inject a specific color on demand without the need to pre-mix large volumes of material, thereby minimizing waste during color changes. This allowed them to seamlessly integrate EnDiSys' pigment dosing systems into their HFR system and accurately meter the desired amount of pigment.

To achieve the desired results, EnDiSys utilized a heated gear pump system from Dynatech, specifically designed to handle the high viscosity of pigments. They also integrated a stack light and an interface with the client's HFR system, ensuring a seamless color dosing process.

The successful implementation of the color dosing solution delivered remarkable outcomes for the client:

1. Elimination of labor associated with pre-mixing pigments, leading to increased efficiency.
2. Reduction of material waste during color changes, resulting in significant system cost savings.
3. Enhances flexibility to add different colors on demand without the need for system flushing.
4. Overall improvement in efficiency and productivity of the filament winding process.

The successful integration of the color dosing solution demonstrated EnDiSys' expertise and innovation in creating tailored solutions for complex manufacturing processes. The client experienced substantial cost savings and increased productivity, making the investment in the color dosing system highly valuable.

Incorporating EnDiSys' color dosing solution is beneficial for any industry that deals with a

variety of colors and uses two-component materials. Regardless of the end product, EnDiSys' system allows manufacturers to add specific doses and colors in materials for pigmentation on demand without the need to flush out the entire system. While filament winding is an example, there are countless applications where manufacturers work with two-component urethane, epoxy, or silicone systems and desire flexibility to inject color as needed rather than dedicating separate systems for specific colors. EnDiSys' solution provides this flexibility, eliminating the need for excessive material waste during color changes and avoiding the hassle of dedicating specific systems to particular colors.

Manufacturers looking to optimize their color addition process can explore EnDiSys' color dosing systems. By adopting this innovative solution, businesses can enhance productivity, reduce material waste, and realize substantial cost savings, ultimately leading to a more sustainable and profitable production process. For more information and detailed consultation, contact EnDiSys.