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Macawber Installation Case Study:

Spherical PET Pellet - Arkansas, USA

IN BRIEF

The use of recycled PET continues to increase globally for industries such as packaging, food, beverage, cosmetics and more to minimize waste and create environmental sustainability. A manufacturer that recycles various materials such as paper, metal, films, and plastic reached out to Macawber to create an energy efficient material handling solution to meet their needs. For this project, our customer is manufacturing rPET (recycled polyethylene terephthalate), a form of polyester. The rPET is manufactured in the form of plastic pellets that are used in injection molding operations, therefore, the particles need to be a certain shape and size. Maintaining the perfect, spherical shape of recycled PET pellets after conveying the material several hundred feet was the number one goal for our customer. Our customer was previously utilizing dilute phase systems to convey the pellets, but due to the high velocities, the friction from the pellets against the pipe walls was melting the pellets and creating what is termed “streamers”, meaning the pellet changes from a round spherical shape into a thin string-like shape. We performed a convey test at our in-house testing facility to prove that the material can be successfully conveyed with our equipment. We provided a custom solution including two Denseveyors® equipped with our robust Dome Valves®, pneumatic controls, reception bins, feed hopper and more to successfully convey this material and surpass our customer’s expectations.

MATERIAL CHARACTERISTICS

Material	Spherical rPET Pellet
Bulk Density	54.7 lbs./ft3
Temperature	Ambient
Moisture Content	< 0.4%
Condition	Free Flowing

SYSTEM OBJECTIVES

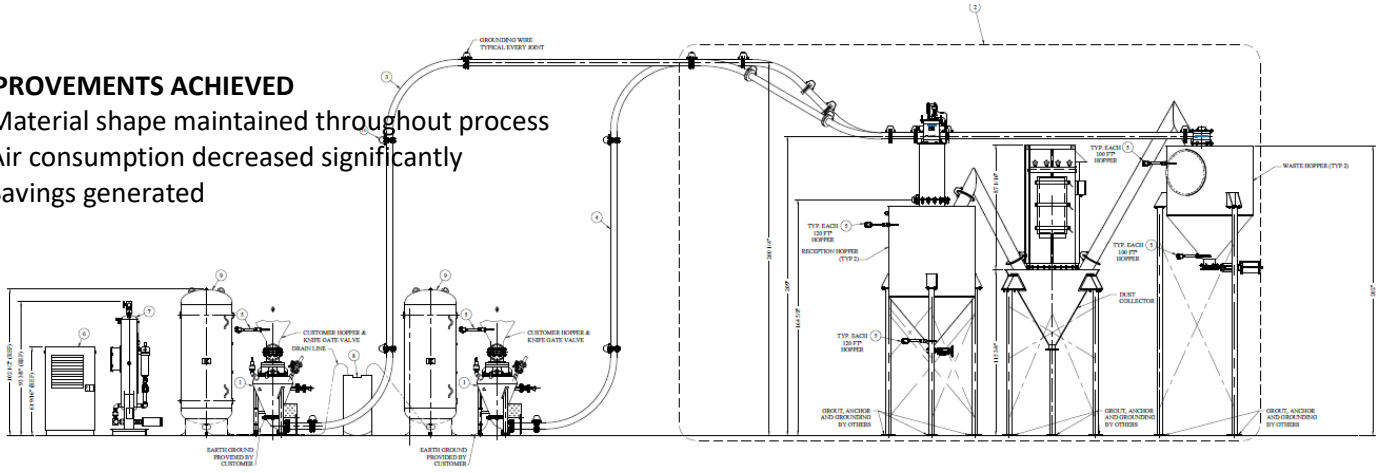
1. Convey material gently with minimal degradation
2. Minimize air consumption
3. Create savings

SYSTEM PERFORMANCE

Transfer Capacity	2.5 T/hr.
Conveying Distance	560 ft
Reception Points	1

IMPROVEMENTS ACHIEVED

1. Material shape maintained throughout process
2. Air consumption decreased significantly
3. Savings generated



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