cumberland Partnering with Teel PLASTICS, INC.

Move to Beside-The-Press Granulators Yields Major Results

Teel Plastics transformed their regrind workflow and reduced lost material by 28,000 pounds per year. And that was just the beginning.

CUSTOMER

Teel Plastics Inc. manufactures custom precision plastic tubing and profiles, offering a variety of services and products for health care, automotive, medical, and industrial sectors.

CHALLENGE

The company's dated central granulation process was proving detrimental to their bottom line - most prevalently in the 30,000 pounds of reclaimed material lost each year.

SOLUTION

After successfully testing several Cumberland FX beside-the-press granulators on smaller extrusion lines, the company extended the in-line regrind workflow to larger lines with excellent results.

RESULTS

Using a new workflow and Cumberland FX Series granulators, Teel Plastics has reduced lost material from 30,000 to just 2,000 pounds per year via increased regrind efficiency, saving over 1,000 in manual labor hours as well.

With safety the #1 priority, Teel Plastics transforms their central granulator workflow with advanced beside-the-press technology. The result is a safe and efficient regrind process that reduces material loss substantially.

The impact of material loss is a key area every plastics manufacturer must address to help ensure profitability and minimize overhead. So, after noticing a considerable amount of material loss, the management team of Teel Plastics started tracking and analyzing their regrinding process. Following a thorough review, they concluded that their central granulator workflow needed to be revisited. The issues and challenges they identified included:

- 20,000 to 30,000 pounds of regrind materials lost in the grinding process each year
- A complex workflow that was both inefficient and labor-intensive
- Manual tasks that required hand loading and handling five-gallon buckets of regrind materials resulting in plenty of unsafe heavy lifting, bending and twisting by some employees
- 224 pallets of regrind material taking up 3,000 square feet of valuable production floor space
- Additional offsite storage of regrind materials occasionally required, added handling and transportation costs
- Inability to meet company sustainability goals for re-use of materials

"It was not a great process," says Max Cummings, Technical Development Engineer at Teel Plastics. "We did a value-stream map and found that there were just so many moving parts and steps involved in moving regrind materials in and out of the central granulator room. We were touching the materials too frequently – unloading, collect it into gaylords, forklifting gaylord, storing – so there were a lot of soft costs associated with the workflow. That's when we started talking to the folks at Cumberland."

"Our operators found that they were easy to open for access to cutting chambers, regrind tray, and screens to clean out, plus the safety circuits were very good. Based on their hands-on experience and input, the decision to go with Cumberland versus the competitors was easy."
-Christian Herrild, Marketing, Teel Plastics

EXPLORING A BTP WORKFLOW

Looking to minimize the regrind touch points, Teel Plastics management consulted with John Farney and Gary Gill of Cumberland about their current challenges and the possibility of a beside-the-press (BTP) configuration. After an onsite analysis at their Baraboo, Wisconsin location, they decided on a test that would feature Cumberland BTP granulators on one of their smaller lines.

The new workflow would allow scrap to be taken directly from the end of the line as it was produced, reground and transported via an evacuation system to the front of the line where it is discharged to a gaylord positioned next to the extruder. As soon as the gaylord was full, it could easily be move over a mere five feet to start using right on the line. This immediately eliminated several labor- and time-intensive steps and allowed more potentially scrap material to be used, cutting down on overall process waste. The company then decided to reconfigure six more lines using a similar BTP workflow for a total of seven.

The next step in the company's regrind workflow transformation involved eliminating steps and the complexity of the regrind process on the larger lines. Using larger Cumberland FX beside-the-press units equipped with evacuation systems, Teel Plastics was able to implement a workflow that reused regrind materials immediately within the process, eliminating the need for time-intensive manual steps and costly storage. It also cut down on lost material and clean-up time allowing more materials to be recaptured and used internally at Teel Plastics.

FX1000 Beside-the-Press Granulator

BENEFITS THAT MAKE A DIFFERENCE

"Switching to the beside-the-press granulators and reconfiguring our workflow has allowed us to expand and grow without having to hire more people," says Cummings.

Other advantages of the new regrind workflow cited by Teel Plastics management include an increase in manufacturing floor space freeing up nearly 3,000 square footage of production capacity. Added efficiencies also enabled an increase in the percentage of regrind to use in some products supporting company environmental initiatives. Plus, there was a dramatic decrease in maintenance, due to the Cumberland FX beside-the-press granulators' long-lasting knife kits.

"Every three months we perform a thorough check of belts, blades, safety sensors, and more," says Cummings. "We had a couple of the Cumberland granulators in service for a year now and haven't had to change the blades yet."

Benefits by the Numbers

1,000 hours of labor savings per year	**28,000 pounds of loss regrind material savings per year**	**75% reduction in average cleanout downtime**	**Up to $300k in material savings per year***

*Based on virgin materials costs of $2-$12/lb

RESULTS ON THREE BUSINESS-CRITICAL FRONTS

With the move from a central granulator unit and a complex manual process to BTP granulators and a new, more efficient workflow featuring Cumberland FX Series equipment, Teel Plastics has seen tangible results in three key areas.

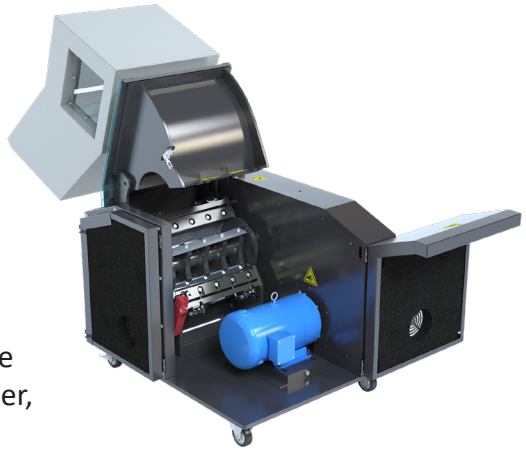
Less Complexity

- Elimination of many manual steps
- No need to collect, transport, and store regrind material to a central granulator room
- A more automated workflow that significantly reduced the need to manually handle regrind material
- Offsite transportation and storage no longer needed

More Efficiency

- BTP granulators and collection equipment allows for regrind to be reused immediately on a dedicated line
- No need for frequent work stoppage for collection and moving of regrind materials
- Elimination of several layers of manual labor and overhead
- Clean out times reduced from two to three hours down to 30 minutes, due to easy access to FX Series granulator cutting chamber and bin
- More total material capture and reduced waste to landfill

"We tried different units and compared, letting our operators use them and then list the pros and cons. We went with Cumberland because the results showed they were more efficient, quieter, and cleaner than the competitors."
-Max Cummings, Technical Development Engineer, Teel Plastics



Greater Safety

- A substantial decrease in the need to handle regrind materials
- Reduced fork truck traffic and a less congested manufacturing space
- Ensure safe access with zero rotor speed detection, as well as hopper, rotor, chamber, and discharge bin locks
- Allows for two sets of redundant safety-interlock contacts, safety rated components, and short circuit protection (S12100 Cat 3 certified)
- Lower sound decibel levels – reduced by up to 30 percent – due to FX Series noise suppression technology

ABOUT CUMBERLAND

Cumberland is the world's brand leader in size reduction equipment. Since 1939, Cumberland granulators and shredders have proven to be rugged, reliable, and dependable. As the first granulator company, Cumberland still leads the way with the broadest line of granulators and shredders to meet the growing needs of the plastics and recycling industries. Whether the application requires single or four shaft shredders, beside-the-press or central granulators, our customers rely on Cumberland to deliver their throughput requirements and produce the highest quality regrind available in the industry.

For more information,
visit www.cumberland-plastics.com
or call 262-641-8600