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Federal Foam Technologies – Trim Scrap Baler

Federal Foam Technologies is a subsidiary of Federal International, and its industrial division is located in New Richmond. Federal Foam serves mainly the contraction and agricultural equipment markets. It specializes in fabricating custom-designed plastic materials including polyurethane foam and custom laminates by itself as well as in composite with other materials.

Challenge

The production process of Federal Foam results in a huge volume of form and trim scrap that accounts for the majority of its production solid waste stream. Before 2011, it used vertical foam compactors in order to compress the volume of this waste. However, because of the firm's decision to increase production of interior trim components, Federal Foam had to find new ways to handle its waste in a more efficient and timely manner. They observed that the compactors incurred too much labor time in its operation, therefore adding unnecessary indirect labor costs to this method. The increase in waste removal costs also forced them to think of a new strategy to make the plan feasible.

Strategy

In the end of 2010, the company started to look at the potential cost savings to process the waste with a horizontal baler instead. They compared and analyzed the costs and savings based on two main aspects: (1) the implicit labor costs it takes to transport the trim scrap and run the compactor and the baler, and (2) each machine's effectiveness in compression that determines the space needed to temporarily store the processed scrap and the number of trips needed for waste hauling.

With the proposed location for the new baler, Federal Foam estimated that they could cut both the distance per trip to the baler and the machine's operation time by more than half when compared to using a compactor (from 720 ft to 350 ft, and from 10 min to 4.5 min). These would bring down the labor costs by more than \$39,000 per year.

Its estimation for reduced waste hauling fees if using a baler was equally impressive. Because it would require much fewer pickups when the scrap was compressed and baled tightly, the company expected a reduction of more than \$10,000 per year for waste removal.



A horizontal baler

Results

In 2011, Federal Foam decided to install a horizontal baler to bale the scrap from its waterjet trimming work stations. They use the baler to compress most of the scrap now, keeping only one compactor in the plant. With this change of method, the costs for hauling the trim scrap dropped from \$58/ton to \$35/ton. They cut 60-75% of scrap loads that are processed by the compactor. The number of trips needed to haul the waste was down from 10 to 1. They anticipated the payback period for this investment to be two years. However, the benefits brought by this machine are much greater than expectation. They recovered the costs in nine months.

Although Federal Foam is still disposing its baled scrap by hauling it to landfill, they are negotiating deals to send their waste to a waste-to-energy plant. Their ultimate goal is to have their scrap gasified and prevent it from reaching the landfill.

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