

Project Overview



Partners in Pollution Prevention Intern:

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Major: Chemical Engineering

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Company Background

Insulfoam is a division of Carlisle Construction Materials (CCM) and has been producing a variety of foam insulation materials for over 50 years. There are 10 Insulfoam manufacturing plants across the United States reaching from Alaska and California all the way to Florida and Pennsylvania, with the Mead, NE location in the center of it all. Insulfoam products are very customizable and the associates can assist project managers with design to ensure the best possible cut is being put into a roofing system. These products can contribute to a building's LEED certification, showing continued efforts toward bettering the environment with every piece produced.



Project Description

In the summer of 2016, Insulfoam connected with the Partners in Pollution Prevention (P3) Program to become a more environmentally friendly manufacturing facility. Specific tasks included: investigating and quantifying the current volumes and sources of foam material being sent to the landfill, altering current processes and developing new processes to help counteract these sources of foam waste, and contacting outside organizations to network and develop possible avenues of increased "take-back" material for re-use and recycle. Additionally, a study of the process flow was done to determine what the most efficient plant layout would be to help reduce the time it takes for a block to travel throughout the entire production process.

Pollution Prevention Benefits

This report outlines 4 specific areas for improving the overall environmental impact of Insulfoam. Recommendations have been made within each area, and some have already been acted upon and incorporated into the daily production process. While the cost savings are small in comparison with the sales done per year, the amounts of waste sent to the landfill could be drastically decreased, while increasing the amount of material being recycled back into the production process. The quantified results are outlined in Table 1 below.

Table 1: Summary of Impact

Description	Annual Cost Savings	Annual Reduction	Annual GHG Reduction
General	\$2,600	1,000 lbs of paper towels	1.75 MTCO ₂ E
Trash Truck	\$2,000	22,800 lbs recyclables	41 MTCO ₂ E
Cutting	\$15,700	17,700 lbs foam	23 MTCO ₂ E
Re-Purposing and Take-Back	\$22,500	76,000 lbs misc.	96 MTCO ₂ E
Process Flow/Plant Layout	\$12,000	800 gal Liquid Propane	4.5 MTCO ₂ E
TOTALS	\$54,800	117,500 lbs waste	166.25 MTCO ₂ E