



Green Technology Accelerator Center

New York State Pollution Prevention Institute (NYSP2I) helps companies accelerate their introduction of green technologies into the market by identifying emerging market opportunities and providing assistance in a variety of areas.

Centrotherm: InnoFlue® Flue Duct Evaluation

Client

Centrotherm Eco Systems, LLC (Centrotherm), Albany, N.Y. provides a product portfolio focused on advanced energy-saving technology for residential and commercial structures. Their InnoFlue® product line features venting systems designed for high efficiency furnaces, hydronic boilers and water heating equipment.



InnoFlue® Venting System

Opportunity Areas

Centrotherm's InnoFlue® residential flue duct system currently uses a proprietary polypropylene material constructed using single wall, gasketed, rigid vent pipes, fittings and accessories. While polyvinylchloride (PVC) based systems are also commonly used for venting heating equipment, Centrotherm requested that NYSP2I evaluate the InnoFlue® polypropylene ducting system as compared to PVC based systems relative to the environmental impact in flue duct applications.

Objectives

The goal of this project was to analyze and compare Centrotherm's InnoFlue® product to polyvinylchloride (PVC/CPVC) flue ducting and summarize the environmental impact and risk for high efficiency, heating exhaust system applications.

Work Performed

In support of this comparative evaluation, NYSP2I performed both a streamlined Life Cycle Assessment (LCA) and high-level risk management assessment, including risk response, for InnoFlue® ducting as compared to PVC based systems.

Results

- Centrotherm's InnoFlue® system meets or exceeds the requirements for flue duct applications as identified by UL standards within the scope of the study.
- PVC based ducting systems may not meet the peak operating temperature excursions for flue ducting of heating equipment, as outlined by the risk assessment study.
- Results of the environmental impact analysis of InnoFlue® polypropylene vs. PVC ducting:
 - Manufacturing of base polypropylene resin uses less toxic material than PVC based resin production, providing an environmental advantage for polypropylene material.
 - Neither the InnoFlue® polypropylene ducting nor the PVC ducting is completely environmentally preferred.
 - Material substitution of a proprietary European polypropylene for use in InnoFlue® ducting reduces the environmental impact and makes the InnoFlue® system environmentally preferred over PVC ducting.

Based on the results of this study, Centrotherm anticipates an increase in total sales and is targeting the addition of 24 jobs in New York State to support increased manufacturing and applications of InnoFlue®.

