



Completed project with PSP® duct installed on building exterior.

Independent Sheet Metal, New Jersey, USA

Cost effective corrosive fume exhaust system

Background:

Independent Sheet Metal, a northern New Jersey firm engaged in the fabrication and installation of sheet metal ductwork for heating, ventilation and air conditioning (HVAC) systems had a customer give them a tough assignment. A large pharmaceutical manufacturer requested a recommendation for a cost-effective corrosive fume exhaust system for their multiple scale organic building project. The request called for several lengths of 60" diameter duct with a long horizontal run located ten stories up on the side of the building. Independent was also told the overall project was over budget and behind schedule!

Challenge:

Careful analysis of all the products available led Independent and their client to the belief that a cost effective solution existed, without sacrificing the corrosion resistant qualities required for the duct.

Research showed that many types of material have been used for corrosive exhaust ductwork, with the

most common being plastic. However only a few of the plastic duct products are accepted by the various insurance and code authorities for installation without sprinklers inside the duct. Of the approved plastic duct alternatives, the time needed to prepare, glue and heat-cure each joint (including grinding, sanding, and use of epoxies) would be extremely time consuming and labor intensive for assembly.

Solution:

Independent's quest for a solution ended with a conversation with a Fab-Tech representative. Fab-Tech's product called PermaShield Pipe (PSP®) has been in use for over a decade in the semiconductor sector as the premier product for exhausting corrosive fumes. Their stainless steel duct with a fluoropolymer coating integrally bonded to interior surfaces delivers exactly what is needed; unparalleled corrosion protection, structural integrity and ease of installation without the need for internal sprinklers.

A critical factor in selecting PSP® was its FM rating. FM (Factory Mutual) is an affiliate of FM Global, the world's largest insurance company. FM is specifically devoted to reducing commercial and industrial property losses. PSP® has earned the FM Approval mark as stipulated in Factory Mutual Research Standard No. 4922.

Independent Sheet Metal project manager, Vincent J. Reitano, worked closely with Fab-Tech to present to the client a bidder's alternative proposal, bringing in PSP® as a "Value Engineering" solution. The savings of installation expenses versus furan fiberglass pipe was dramatic, amounting to "tens of thousands of dollars".

Over 300' of 60" diameter coated stainless steel duct was delivered on schedule and quickly installed by Independent's professional crew.

Several segments were pre-assembled on the ground and then lifted into support saddles 100' above the ground. The aerial bolted assembly went together much quicker than expected.

Conclusions:

So impressed was the client that a second application was purchased and installed inside the multiple scale process building. These 8" through 24" diameter exhaust lines are used to vent reactors, filter-presses, distillation units and laminar flow booths. Duct up to 16" diameter use Fab-Tech's proprietary PSP-EZ™ single bolt band clamps - resulting in even faster installation times. Three additional benefits of PSP® were also realized:

- The PSP-EZ™ clamps and bolted van stone flanges can be quickly disassembled for duct inspection, cleaning or replacement.
- If manufacturing suites are reconfigured in the future, no cutting or removal of entire duct systems would be necessary. Simply unbolt the segments to be changed and reuse or quickly add to the existing system.
- The stainless steel exterior presents a pristine "sanitary" appearance that never needs painting.

Independent's Vincent Reitano added, "PSP® helped us as the HVAC/Sheet Metal Contractor to propose an effective and cost saving alternative to our client, demonstrating our commitment to them, as a valued team member." This is an excellent example of supplier and contractor working closely together to provide a superior product to enable valued clients attain their corporate goals.



60" PSP® duct prepared for shipment from Fab-Tech.