



Pfizer, Loughbeg, Ireland

Process Gas Venting

Background:

This Pfizer facility in Loughbeg manufactures proprietary active ingredients for strong prescription drugs which are then shipped to other facilities, predominantly Lipitor, for finishing. Remaining capacity is allocated to cancer drug manufacture. Most processes in the facility utilize a glass lined reactor vessel to produce large volumes of solvents such as ethyl chloride, acetone, etc. Chlorine gas and hydrochloric acid condensate are process by-products that require attention. The vapors of all reacted processes are collected and either reclaimed by distillation or routed to a vent header to be incinerated.

Attached to each reactor are Teflon® lined piping systems up to 12" diameter with pressure ratings ranging from 40 bar or 150 psi and full vacuum. A fast acting check valve separates this reactor system from the vent header and protects the header from damage due to excessive pressure. System pressure specification downstream from this check valve drops to plus and minus 300 millibar (120" wc or 4.35 psi). The largest portion of the vent system is a 36" diameter, 300 foot long header routed along the periphery of the facility. This header terminates at a flame arrestor connected to the inlet of a large thermal oxidizer.

Challenge:

Pfizer appreciated the permanence of fluoropolymer products but lined pipe products over 12 inches in diameter were cost prohibitive. They therefore opted to install fabricated heavy stainless steel pipe for the vent header. A pipe thickness specification was established based on a set chemical erosion rate for stainless steel and with the aim of replacing the pipe at scheduled intervals. The increased pipe thickness resulted in significantly heavier parts which in turn made handling and installation more difficult. Heavier parts also required heavier and more costly support structures.

Solution:

PSP® products with fluoropolymer coating were perceived as a desirable alternative solution to the periodic pipe replacement scenario. The lighter construction of PSP® made the cost of both materials and installation attractive as opposed to very long lead times and higher costs for alternative custom lined components. A heavier wall PSP® was designed in 8 foot lengths for this application and installed in 1998 at a contract value of just over \$500k USD.

Conclusions:

This application demonstrates the versatility of PSP® as a product highly suited to the highly corrosive gas abatement demands of the pharmaceutical industry. Combining engineering capabilities with vertically integrated manufacturing, Fab-Tech provided the best solution for Pfizer. This included coordination of international sea freight in order to accommodate a tight installation schedule.