

PSP® Odor Control Duct Provides Giant Leap Forward in Fire Safety

"Class 1" rated plastic material may not be sufficient to provide your wastewater facility with needed fire and smoke protection!

This is one phone call every facility manager dreads.

"911 operator - what's your emergency?"

"This is the facility manager at the Norton wastewater plant on Hill Street. We have a fire at our facility that's out of control... we need the fire department - NOW!"

And arriving right behind the fire trucks comes the media... film vans, reporters and helicopters drawn by the flame and smoke, to put your "breaking story" on the six o'clock news.



Estimated \$1 million USD cost of fire damage to this wastewater treatment plant (FRP duct system).

This incident that occurred at the Mansfield wastewater facility located in Norton, Massachusetts in January of 2009 had a fortunate outcome. Fire fighters from three municipalities arrived on site to quickly extinguish the fire and no plant personnel were injured in the accident. The facility, however, did sustain over \$1 million USD in damage not just from the flames, but from the thick black soot that covered everything inside the facility. The soot left

behind is "something that I haven't seen, I don't think, in my career" reported Norton Fire Chief Richard Gomes. This residue is a typical result of burning plastic, fiberglass and components containing hydrocarbons. It was everywhere!

Ken Hackett, plant operations manager said, "the fire started in a new air scrubber, manufactured by Siemens Water Technologies, that was being proofed before installation. The scrubber eradicates offensive odors emitted by the plant by processing the air through a bio filter before discharging it back into the atmosphere." Starting in the odor control scrubber outside the building, the fire quickly spread into the main building via the fiberglass duct ventilation system.

Fires at wastewater facilities occur more frequently than admitted. A blaze in an impregnated carbon absorber vessel at New York City's Coney Island Water Pollution Control Plant (Knapp Street, Brooklyn) resulted in damages in excess of \$19 million USD. Ignited by an exothermic reaction in the carbon bed, the "deep-seated fire" smoldered and grew until the vessel was completely ablaze, then quickly spread throughout the plant via fiberglass FRP duct.

Installing PSP® odor control duct with a "0" flame spread rating, that does not burn, generate smoke or melt, can mitigate fire damage at your wastewater facility!

Fab-Tech's PermaShield Pipe (PSP®) is recognized around the world as the best product for the removal of corrosive and highly hazardous fumes from a variety of industrial applications. One such critical use is as odor control duct in wastewater facilities. Duct lines at wastewater facilities transport not only malodorous fumes, but also a witch's brew of hazardous products. Virtually every part of the wastewater system can produce objectionable odors. Airborne hydrogen sulfide is the most prevalent odorous compound, but additional odorous organic chemicals such as methyl mercaptan and dimethyl disulfide can also be present.

Waste water chemical vapors can also include: chlorine, hydrogen chloride, hydrogen sulfide, ozone, sulfuric acid, sodium hydrochlorite, sodium hydroxide, methane and digester gas. All of which can be

corrosive to carbon steel, galvanized steel, and even some plastics. Plant designers are challenged to employ the best materials possible for safety, yet stay within budgetary constraints. Designers have to contend with the triple threat of corrosion, odor and flammability.

PSP®'s unique combination of extreme corrosion resistance and "0" Flame Spread makes this stainless steel duct with its durable and highly chemical resistant fluoropolymer coating, the best choice to transport fumes and gases produced on site, and will provide your facility with decades of worry free odor control exhaust service.

PermaShield Pipe will greatly contribute to the overall safety of your wastewater facility as well as the safety of the men and women responsible for day-to-day operations by preventing fugitive odor contamination, fluid leakage, or catastrophic loss of life and property in the event of a fire.

Beyond "Class 1" Duct

Your local building code and fire code official will be satisfied with PSP® as a true "Class 1" product. PSP® complies with NFPA 820* established by the Uniform Building Code which is accepted by federal, state and local authorities. This product will not burn as certified by ASTM E-84 test with "0" flame spread and a smoke generation index of less than "20". PSP® does not burn but unlike plastic duct, it also does not melt and collapse thereby continuing to exhaust and contain the hazardous fumes.

Building codes and regulations stress lower flame spread and low smoke generation for many materials. The Steiner Tunnel Test (ASTM E-84) is frequently referenced as a method to assess flame spread and smoke generation and is a mandatory test for many commercial building materials. The values obtained from burning the test material represent a comparison with 1/4" inorganic reinforced cement board expressed as zero (0) and red oak expressed as one hundred (100). Installations using Fab-Tech's PSP® duct go beyond what is required to be Class 1. With a flame spread of "0", it has the flame spread rating of reinforced cement board. A flame spread of "20" will still allow flame propagation - some distance from the flame source! Don't be misled into thinking that duct with a Class 1 flame spread index

will not burn... it will! But use of PSP® duct with a "0" flame spread Index can greatly reduce the possibility of fire spreading via the duct and contribute to a reduction of annual fire and business interruption insurance costs.



PSP® duct installed at a NYC DEP WPCP.

Wastewater treatment plant owners and engineers can improve facility fire safety by employing a combination of safety focused engineering design and cutting edge equipment technology, such as PSP® duct.

If you would like more information about corrosion resistant, zero flame spread PSP® fluoropolymer coated stainless steel duct, contact Fab-Tech Inc or visit our website at www.fabtechinc.com. **Wouldn't you rather make this call than to 911.**

- Details of the Norton, MA fire found in The Norton Mirror, Thursday, January 29, 2009
- Data on NYC DEP Coney Island fire gathered at NYWEA 2009 presentation "Innovative Odor Control Automatic Fire Protection System"

*NFPA 820 is the Standard for Fire Protection in Wastewater Treatment and Collection Facilities.

 **Fab-Tech, Inc.**
A Critical Process Systems Company