TECHNICAL BULLETIN

FOR IMMEDIATE RELEASE

Revolutionary Fluoropolymer Barrier Coating

New proprietary formula for superior coated product

Beginning in May of this year, PermaShield Pipe will be coated with a revolutionary new fluoropolymer barrier coating. Extensive testing of this coating revealed its exceptional performance characteristics to be ideal for corrosive fume environments and far superior to anything currently on the market.

Fab-Tech pioneered the concept of coated stainless duct with the introduction of PermaShield Pipe in 1991. Leading to this humble beginning, Fab-Tech formed a unique partnership with a leading fluoropolymer manufacturer to develop the technology to adhere a fluoropolymer to stainless steel. The end product was a fully engineered fume exhaust system that combined the structural integrity of stainless steel with the superior corrosion resistance of a fluoropolymer coating. Subsequently, Fab-Tech has become a leader in coated duct backed by sixteen years of proven experience fabricating quality exhaust components.

With the rapid growth of PermaShield Pipe, Fab-Tech has also achieved distinction as a responsive, innovative and service-oriented company that thoroughly engineers and tests its products before introducing them to the marketplace. This upgrade to the PSP® product greatly improves performance.

The advantages and benefits of PSP® over plastic or other coated duct are more compelling then ever with this new coating.

Research and testing

Over the course of several years, Fab-Tech conducted a comprehensive program of research and testing of available fluoropolymers to determine the attributes of compatible coatings on the market. This unique PermaShield barrier coating far outperformed all others.

Fab-Tech engineers worked closely with resin manufacturers to select a base product. The selected formula was then modified to enhance permeation resistance and tested under Fab-Tech's unique coating methodology. Exhaustive tests of virtually all duct coatings available confirmed that this new fluoropolymer formula has much better adhesion and permeation resistance than standard ETFE or ECTFE.

FM Approved

PermaShield Pipe with the PermaShield barrier coating is FM 4922 approved for use as a fume exhaust product without internal fire suppression systems. This covers the maximum approval range of 4" to 60" diameter and a coating thickness up to 12 mils.

Test results

The new coating has gone through extensive testing both internally and at independent laboratories.

Atlas cell test.

FM 4922 test.

480 Hercules Drive, Colchester, VT 05446 Tel: 802-655-8800 Fax: 802-655-8804 Email: sales@fabtechinc.com Web: www.fabtechinc.com

TEST	TEST DESCRIPTION	TEST RESULTS	PASSED
Chemical Immersion	Extended immersion in strong acids.	Samples exhibited no evidence of chemical attack or loss of adhesion, no blisters developed, some of the other coatings tested did blister.	Met or exceeded benchmarks ✓
EIS (Electrochemical Impedance Spectroscopy)	Following extended immersion in strong acids, impedance measurements taken to determine permeation resistance.	Results indicate excellent protection with end of test percentages of 97% or greater permeation resistance.	✓
E-84 (Stiner Tunnel)	ASTM E 84 tests for Fire Spread and Smoke Developed, frequently used by code officials and regulatory agencies in the acceptance of interior finish materials.	PermaShield barrier falls in the Class 1 category with a Flame Spread Index of "0" and a Smoke Developed Index of "20".	✓
Atlas Cell	Standard ASTM test involving test pieces subject to boiling water for defined periods of time then check the coating for delamination or blisters.	The new PermaShield barrier coating ran far longer than any other coating ever tested.	✓
Boil and Peel	Standard test, prolonged boil of flat coated substrate samples with scored coating, samples then deformed in a defined way to see if coating will peel.	The adhesion of the PermaShield coating is the best ever seen.	✓
Field Flange	Round duct samples are cut and reflanged to observe coating adhesion to the new flange.	No peel or delamination observed, adhesion to substrate remains consistent.	✓
Field Patch / Repair	Coated samples are repair patched.	Patches found to be superior to patches of other coatings.	✓
FM 4922	Standard Factory Mutual test, measures flame propagation in duct systems.	Test passed: temperatures well below 1,000°F at 23 feet.	✓

This new resin has the best performance Fab-Tech has seen in every test category.

Visually this new fluoropolymer barrier coating is a blue green color compared to the familiar green color. Chemical compatibility data is available from Fab-Tech upon request.

Desirable attributes

Besides its high level of chemical resistance, this new fluoropolymer formula possesses the following desirable attributes:

- Mechanically tough with excellent cut through and abrasion resistance
- Low cold flow
- High tensile strength and good elongation properties
- Excellent impact resistance at room temperature and down into the cryogenic
- Dimensionally stable
- Continuous use to 300°F in most applications
- Excellent release properties
- Very smooth surface

480 Hercules Drive, Colchester, VT 05446 Tel: 802-655-8800 Fax: 802-655-8804 Email: sales@fabtechinc.com Web: www.fabtechinc.com