



Stayflex™ Systems

FREQUENTLY ASKED QUESTIONS

Background

PSI, located in Cleveland, Ohio, is the developer and manufacturer Stayflex™ Systems. Since 1984, PSI has pioneered the development of spray polyurethane foam technology for specialty interior applications. Stayflex™ Systems are sold nationwide and installed through the PSI Authorized Applicator network.

What are Stayflex™ Systems?

Stayflex™ Systems are unique spray polyurethane foam insulation and protective coating solutions, used in a variety of building types, to lower construction, operating and maintenance costs. Stayflex™ Systems can be custom-tailored to meet specific customer requirements.

Primary applications include:

- Thermal Insulation
- Air Barriers
- Corrosion Control
- Suspended Ceilings
- Asbestos & Lead Paint Control

Stayflex™ Systems are spray-applied in a two or three layer polymer composite, comprised of the following materials:

1. Staycell™ 245-2.0 Spray Polyurethane Foam insulation:

Staycell™ 245-2.0, the first layer, is seamless **polyurethane foam**. It stops condensation and conserves energy with a thermal resistance rating (R-value) of 6.5 per inch. Due to expansion, it fills concealed spaces and eliminates horizontal ledges where moisture and chemical vapors collect. In addition, it's highly adhesive, lightweight and strong and is applied with no/minimal surface preparation.

1" of Staycell™ can reduce heat or cold transmission over 80%.

2. Stayflex™ 2505 Thermal Barrier Coating:

For interior applications, building codes and insurance regulations require polyurethane foam insulation be fire retardant and be covered with a fire protective surface commonly referred to as thermal barrier. The Stayflex™ 2505 thermal barrier coating is a spray-applied, polymer-based coating specifically developed as a thermal barrier for application over Staycell™ 245-2.0 polyurethane foam insulation. Stayflex™ 2505 has low permeability, excellent chemical resistance and durability to keep chemical vapors, moisture and air from affecting the foam and protected substrates. Stayflex™ 2505 is manufactured from the same types of resins used in high performance products such as fiberglass tanks, chemical piping and corrugated fiberglass (FRP) sheet having 50+ year performance.

3. Staycoat™ topcoats:

As an optional third-layer, the Staycoat™ line of topcoats are used when enhanced performance is required such as better washability, chemical resistance, impact resistance and gloss.

What are the uses or functions of Stayflex™ Systems?

1. Thermal Insulation/Air Barriers: Stayflex™ Thermal Insulation Systems have an R-rating of 6.5 per inch, that's nearly twice that of polystyrene foam and fiberglass blanket insulation. In addition, increased thermal efficiency is gained because the spray-applied foam is seamless, minimizing air infiltration. No heat or cooling loss occurs through seams as happens with fiberglass insulation and board stock. Condensation control is important to ensure building components do not deteriorate, rot or corrode and is imperative for controlling the growth of mold. In the case of food production facilities, condensation control is important in order to ensure quality food product. Polyurethane foam has been used for over 30 years to insulate the majority of cold storage buildings.
2. Corrosion Control: The unique, long-term ability of Stayflex™ Corrosion Control Systems to minimize the substrate's exposure to oxygen, moisture and chemical vapors eliminates the repair-and-replace cycle of building components in corrosive environments, saving critical maintenance costs as well as lost production time. Stayflex™ Corrosion Control Systems have nearly 25 years of proven field performance backed by documented independent test data.
3. Suspended Ceilings: Stayflex™ Suspended Ceiling Systems enable building owners to use conventional suspended ceilings more effectively by overcoming the following two limitations:
 1. Individual Panels that Warp and Fall Out. After installing a conventional ceiling grid and panel system, the Stayflex™ System is then applied to the underside to provide a void-free finish. The insulated, seamless surface keeps air, moisture, chemical vapors and bacteria from penetrating through the seams to the topside.
 2. Poor Resistance to Air, Moisture and Chemicals. The excellent durability, chemical resistance and washability ensures the completed ceiling system will not pick up moisture or bacteria as occurs, for example, with acoustical-type suspended ceilings.
4. Asbestos & Lead Paint Control. Stayflex™ Asbestos and Lead Paint Control Systems can be applied over lead-based paint and asbestos as an alternative to removal. Low-pressure application techniques allow the installation to be done without creating unacceptable levels of airborne contaminants. This eliminates the need for elaborate work area containment procedures and hazardous material disposal. Therefore, compliance with EPA and OSHA regulations is greatly simplified resulting in faster, lower cost projects.

What are the primary features and benefits of Stayflex™ Systems?

1. Air, moisture and chemical barrier. Keeps air, moisture and chemical vapors away from the foam and the underlying substrate. Helps prevent deterioration, corrosion and formation of condensation and mold growth within buildings.
2. Excellent strength. Negates importance of surface preparation. Reinforces substrate. Will not peel or delaminate.
3. Chemical resistance. Withstands corrosive fumes and vapors. Even in the harshest of environments, it will not flake or peel. Never paint or replace building components again.
4. Insulates. Stops condensation and reduces energy consumption. Provides payback through energy savings.
5. Durable. Easily power-washed and FDA/USDA compliant.
6. Minimal surface preparation. Eliminates costly blasting or hand tool cleaning.
7. Spray-applied. Complete encasement of all surfaces. Fast installation. No glue or fasteners required.
8. Materials expand during cure. Complete encasement of inaccessible surfaces. Eliminates cavities where moisture and chemical vapors can collect.

To what building components are Stayflex™ Systems applied?

1. Structural steel
2. Roof decks
3. Ceilings
4. Tanks
5. Ductwork
6. Piping

To what types of materials are Stayflex™ Systems applied?

1. Metal
2. Concrete
3. Concrete block
4. Brick
5. Glass
6. Plastic
7. Gypsum board
8. Plywood
9. Ceramic tile
10. Asbestos
11. Lead paint
12. Various other surfaces

Is surface preparation required prior to application of Stayflex™ Systems?

Minimal or no surface preparation is needed due the thickness, strength and excellent adhesion of Stayflex™ Systems to virtually any substrate. For example, an I-beam encased with the Stayflex™ System is comparable to encasement within concrete. In other words, something thick and strong is completely enveloping the I-beam. Like concrete, it achieves a geometrical, mechanical lock around the I-beam.

Note: Loose paint and/or dirt that is easily removable is typically blown-off or vacuumed prior to application.

What are the advantages of eliminating abrasive blasting?

1. Speed up installation time.
2. Save money by reducing labor costs.
3. Reduce or eliminate lost production time.
4. Eliminate contamination of process equipment or product.
5. Eliminate further reduction in steel thickness.
6. Eliminate treatment and disposal hazards when lead paint is present.

Does my paint need to be tested for the presence of lead?

EPA and OSHA regulations require costly work area containment, worker protection, licensing and hazardous material disposal if abrasive blasting of lead-containing paints creates unacceptable levels of airborne contaminants. With Stayflex™ Systems, abrasive blasting is not required, greatly simplifying compliance with regulatory requirements.

How can I be sure Stayflex™ Systems will work in my environment?

PSI has representative installations throughout the United States. Once a specific project environment is well defined, PSI can provide references for installations having equivalent or harsher environments. PSI can also provide test samples of items encased with Stayflex™ Systems that can be placed in a specific environment to determine performance.

If the roof leaks, how will this affect the installation that's been applied to the underneath side?

Staycell™ 245-2.0 polyurethane foam is 90% closed cell and will act as a barrier to minor roof leaks. Moisture transmitted through small roof holes will eventually evaporate out through the passages from which it entered. By the same token, any materials, including Stayflex™ Systems, applied to the underside of a roof will not solve long-term, exterior roof leakage problems. Holes in the roof should be sealed from the outside prior to the installation. An annual roof inspection program should be implemented to identify problem areas and corrective action must be taken on the exterior side as any future leaks develop.

Will expansion and contraction of the building cause cracking?

Staycell™ 245-2.0 polyurethane foam reduces thermal movement and acts as a "shock absorber" for the Stayflex™ 2505 thermal barrier coating, minimizing the potential for cracking. Existing control joints designed into the building must be maintained. Depending upon the specific application (such as construction of a freezer) control joints may be necessary.

Can the Stayflex™ 2505 Thermal Barrier Coating be applied directly to the substrate without first applying the Staycell™ 245-2.0 Spray Polyurethane foam

No. The long-term ability of Stayflex™ Systems to stay in place is dependent on the strength, adhesion and mechanical lock Staycell™ 245-2.0 achieves on the substrate. Without, the substrate would have to be meticulously prepared before application. Eliminating the necessity of extensive surface preparation is one of the features that make Stayflex™ Systems so unique.

If steel is encased for corrosion protection, how do I know what is happening to the steel inside?

Where the steel is already corroded, non-destructive testing (such as ultrasonic testing) should be performed prior to the application to determine the condition of the steel. Periodic testing can be performed periodically to verify no further corrosion has occurred.

What extent of steel corrosion is suitable for encasing with Stayflex™ Systems?

Most structural engineers believe steel having lost more than 20-25% of its cross section should be replaced or reinforced. Steel that has less section loss is typically considered adequate for encasement.

We have threaded rods and metal brackets in the ceiling supporting various pieces of equipment. If any of these items need to be changed, how easy is it to cut into and then repair Stayflex™ Systems?

Stayflex™ Systems are easy to cut with traditional hand or power tools. It can be drilled with conventional bits and hole saws. Subsequently, with the use of hand patch kits, repairs can be easily made by plant maintenance personnel to restore the surface to its' original condition.

Are Stayflex™ Systems impact resistant?

Stayflex™ Systems are impact resistant, but will not withstand severe abuse. Several options can be considered such as installing Staycoat™ topcoats or installing concrete curbing or bump rails.

How much weight do Stayflex™ Systems add?

Stayflex™ Systems weigh approximately .50 pounds per square foot at 1" thickness.

What is the maximum substrate temperature to which Stayflex™ Systems can be applied?

The maximum substrate temperature limit is 180°F.

How fast can Stayflex™ Systems be installed?

Application rates are determined on a project-to-project basis, but up to 800 square feet per hour can be achieved.

What building temperatures are required when spraying?

Although the materials can be sprayed colder, the preferable temperature is 35°F or higher.

How much overspray occurs during the application process?

Overspray is similar to that of traditional spray-applied coatings. Surfaces and equipment not to be coated are usually protected from overspray.

What odors are present during installation?

Staycell™ 245-2.0 foam has virtually no smell while the Stayflex™ 2505 thermal barrier coating has a smell similar to other resin-based materials. In addition, the materials cure quickly, resulting in odors being limited to the time the materials are actually being sprayed. Vapors must be mechanically vented (fans) from the work area during application. Personnel must observe the personal protective guidelines set forth by OSHA and their employer.

Can Stayflex™ Systems be power-washed?

Yes. Stayflex™ Systems are very durable and can be power washed with high-pressure washers. Stayflex™ Systems are used in the food processing industry where pressure washers are used daily.

Do Stayflex™ Systems come in a variety of colors?

Yes. The standard colors are white, gray and tan. Custom colors can be matched upon request.

Are there Guide Specifications available?

Yes. Guide Specifications are available in Masterspec and other commonly used formats. These specifications are available upon request.

Are Stayflex™ Systems USDA/FDA compliant?

Yes. Stayflex™ Systems are used in USDA/FDA regulated facilities for incidental food contact purposes.

Who installs Stayflex™ Systems?

Materials are sold direct to a nationwide network of Authorized Applicators. PSI closely monitors all projects to assure quality control.

Are warranties available?

PSI warrants its materials to be free from defects in composition and manufacture with no time limits. Authorized Applicators provide warranties on the installation. Extended warranties are available.

Who do I call to learn more about Stayflex™ Systems?

PSI has a network of sales representatives who will respond quickly to inquiries. Please contact PSI at 800-522-4522, or visit our website at www.stayflex.com.