



Primary Reasons Paints Fail

The majority of paintable surfaces are concrete and metal - aluminum, ferrous and galvanized. They all require protection to keep from deteriorating in aggressive environments. Standard practice for protecting these surfaces is to abrasive blast, prime and paint. Typical paints & coatings generally last several years – sometimes as little as 2 to 4 years – before a new application is needed.

1. Inadequate Surface Preparation – This is perhaps the most important reason for coating failure. Industry compiled data suggests 80% of coating failure is the result of inadequate or incomplete substrate preparation. Selection of the proper method of surface preparation depends on substrate condition/contamination, environment, coating selection and the expected service life. With so many variables, any mistake can make the difference between success and failure.

2. High Permeability – Permeability is a measure of a coatings resistance to water vapor transmission. Low permeable coatings provide better substrate corrosion protection than highly permeable coatings since its' more resistant to the passage of air, water vapor, and chemicals. Typical coating systems for steel and concrete protection are often applied as thin as .006" -.013" (6-13 mils) and usually require the evaporation of either a solvent or water to dry, leaving the paint film porous. As a result, typical coatings are highly permeable, having poor resistance to passage of corrosive agents thru the paint film. A common sign of failure is rust bleed thru and concrete deterioration.

3. Adhesion/Bond Failure – Prolonged environmental exposure will reduce paint's elasticity and cause it to become brittle. As a consequence, the coating cannot withstand the shear forces resulting from different expansion/contraction rates between the paint and substrate, leading to bond failure. Common signs of failure are flaking and peeling.

Overcome these limitations with Stayflex Corrosion Control Systems!

- **Applied Thickness** – Average installed thickness between 1"-2" or 75 to 300 times thicker than paint.
- **Strength** – PSI has combined the latest in spray polyurethane foam insulation and "fiberglass" resin coating technology. The final installed product is a structural composite assembly, having similar strength to high performance products such as fiberglass tanks, chemical piping and corrugated fiberglass (FRP) sheet.
- **Minimal Surface Preparation** - The Stayflex™ System applied to an I-beam is comparable to encasement within concrete since it achieves a mechanical lock. Unlike traditional coatings, it's not dependent on surface adhesion for long term ability to stay in place.
- **Low Permeability** - Permeability is a measure of a coating's resistance to water vapor transmission. Low permeable coatings provide better substrate corrosion protection than highly permeable coatings since it is more resistant to the passage of air, water vapor, and chemicals. In addition, as a two-component, catalyst-cured system, it does not require the evaporation of either a solvent or water to dry, forming a tight cellular matrix.

