PPG PSX® 700

Premium performance solution for long-term steel protection

In fewer coats, our patented technology delivers excellent adhesion, toughness, corrosion and chemical resistance than other leading systems.

PPG PSX® 700

Innovative, breakthrough technology

Exceptionally durable with a high strength-to-weight ratio, steel is one of the most widely used materials in construction today. At PPG we develop a comprehensive range of coatings that protect and enhance a myriad of steel structures and assets worldwide.

PPG PSX 700 uses patented engineered siloxane components to deliver excellent adhesion, toughness, corrosion and chemical resistance in aggressive exposure conditions. As an added benefit, this system also removes the need for a traditional mid-coat epoxy.

Demonstrated applications include bridges, wind turbines, stadiums, water towers, petrochemical tanks and mining assets.

Better finish with fewer coats

Our innovative product proves that you do not need a three-coat system to achieve optimum corrosion resistance, long-term gloss and color retention. With only one coat of zinc primer, plus one coat of our breakthrough PPG PSX 700 you get performance equalling or surpassing that of the finest three-coat systems.

Typical applications include:

- Airports
- Bridges
- Heavy equipment
- Manufactured products
- Marine topsides and superstructures
- Offshore platforms
- Piping
- Recreational (stadia, theme parks)
- Structural steel
- Tank exteriors
- Wind turbines

As well as reducing the number of coats required to protect valuable steel structures and assets, the PPG PSX 700 coating also offers you the following benefits.

Unsurpassed performance

The PPG PSX 700 coating offers a longer service life than the traditional epoxy/aliphatic polyurethane system it replaces (see Table 1, Service life projection). And when combined with a zinc primer, the two-coat system significantly outlasts the best three-coat systems (zinc primer, epoxy midcoat, and polyurethane finish).

Table 1: Service life projection

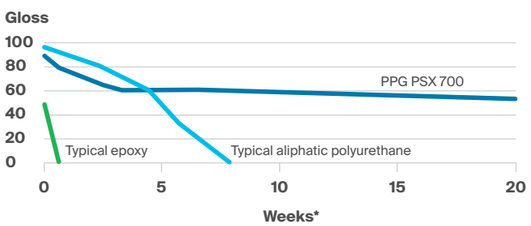
System	Number of coats	Surface preparation ISO 8501-1 / Years of service		Environmental conditions**
		St2/St3	Sa2½	
Epoxy/epoxy/ urethane	3	10+	15-24*	C4
		6-10	12-21*	C5
Epoxy/PPG PSX 700	2	15+	20-32*	C4
		8-15	16-28*	C5

* Based on zinc rich epoxy ** ISO12944

Key performance benefits of PPG PSX 700 include:

- Gloss and color retention surpasses that offered by conventional aliphatic polyurethane (see Table 2)
- Corrosion resistance and chemical resistance exceeds those provided by an epoxy coating (see Table 5)
- Abrasion resistance is greater than, or equal to, a flexible aliphatic polyurethane and far superior to an ordinary epoxy (see Table 4)
- Highly resistant to stains, graffiti and dirt accumulation

Table 2: Accelerated weathering QUV test



* 1 week equates to approximately 1 year of Florida exposure.

Significant cost savings

Use one coat of PPG PSX 700 to replace a conventional epoxy/polyurethane topcoat system or use PPG PSX 700 over a zinc primer to replace a conventional three-coat zinc primer, epoxy, conventional polyurethane system. Either way, here's how you save:

- Less frequent repainting: due to greatly extended service life
- Increased profitability: one coat versus two coats or more increases profits through lower material costs
- Quick and easy application: using airless or conventional spray, brush or roller
- Shorter downtime: cures at room temperature and will be touch-dry in two hours at 20°C (68°F)
- Reduced hazardous waste management costs: extremely low-volatile, organic compound content easily satisfies stringent environmental and health and safety requirements, and cuts disposal costs as there are fewer paint cans to discard

Table 3: Applied cost savings

System description	% three-coat zinc silicate/epoxy/PU	% two-coat zinc silicate/PSX 700
Material (A)	4.8	7.3
Application (B)	95.2	63.5
Total Operational Costs	100	70.8

Reference: Corrosion 92/NACE Annual Conference, NACE Paper #335.
Includes surface preparation and application by conventional spray.
Note: Costs are based on industry standards in the United States.

Outstanding environmental characteristics

The PPG PSX 700 coating meets, or exceeds, today's stringent environmental, health and safety requirements due to its formulation of ultra-high solids and extremely low-volatile organic compounds. Unlike polyurethane products, the PPG PSX 700 coating does not contain any hazardous isocyanates. It also needs little or no thinning, providing significant reduction in solvent emissions and hazardous waste.

Class A fire resistance

Finally, the PPG PSX 700 coating offers low fire and smoke generation ratings. This means our coating has been specially formulated to buy more time to save lives and minimize asset damage.

Breakthrough technology – proven in service

PPG PSX 700 is a major breakthrough in protective coatings technology, and is still unequalled in quality and performance.

Like all other PPG products, it's been thoroughly tested in the only way that matters – in service. In fact, this product is currently protecting millions of square meters of valuable assets in a wide variety of applications, ranging from corrosive chemical environments to general maintenance. The iconic Puenta de la Constitución, also known as Puente de la Pepa, in Spain (the world's second largest bridge at the time of its completion) is one of the latest in a long line of bridges currently benefitting from our tried and trusted PPG PSX 700 coating technology.

The standard in high performance coatings

Our patented PPG PSX engineered siloxane technology represents an entirely new coating category, offering unprecedented improvements in performance and durability. The PPG PSX 700 coating is an exceptional example of this technology and offers a combination of characteristics available in no other product.

Table 4: Abrasion resistance / ASTM D4060
(1 kg (2.2 lbs) load/1000 cycles, CS17 wheel)

System	mg (oz) loss
PPG PSX 700	53 (0.0019)
Epoxy mastic	102 (0.0036)
Flexible aliphatic PU finish	60 (0.0021)

Abrasion resistance: The abrasion resistance of PPG PSX 700 is similar to flexible aliphatic polyurethane.

Table 5: Chemical resistance (24-hour exposure) ISO 2812
(Splash/spill resistance of PPG PSX 700 compared to an epoxy mastic and a conventional polyurethane)

System	PPG PSX 700	Epoxy mastic	Conventional polyurethane
Sodium hydroxide, 50%	10	10	10
HCL, Conc.	10	8	8
Sulfuric acid, 93%	6	6	0
Phenol	8	2	0
Phosphoric acid, Conc.	10	2	8
Acetone	10	8	10
Ammonium hydroxide, Conc.	10	10	10
Ethyl alcohol	10	10	10

10 = no change, **0** = complete failure

Typical systems using PPG PSX 700

System-1: Zinc epoxy based		
Zinc epoxy	Zinc epoxy[1]	75 microns (3.0 mils)
Engineered siloxane	PPG PSX 700	125 microns (4.9 mils)
System-2: Zinc silicate based		
Zinc silicate	Zinc silicate[1]	75 microns (3.0 mils)
Engineered siloxane	PPG PSX 700	125 microns (4.9 mils)
System-3: Epoxy based		
Epoxy mastic	Surface tolerant epoxy	125 microns (4.9 mils)
Engineered siloxane	PPG PSX 700	125 microns (4.9 mils)

[1] Zinc in compliance with ISO 12944.

Features and benefits of PPG PSX 700 engineered siloxane

Unsurpassed performance	
Superior color and gloss retention	PPG PSX 700 significantly outperforms the polyurethane system in color and gloss retention. A traditional polyurethane method begins to lose its color and gloss at an exponential rate after five years of application, whereas PPG PSX 700 has been proven to retain it year after year.
Excellent corrosion and chemical resistance	PPG PSX 700 resists corrosion and chemicals far more than traditional epoxy coatings.
Better abrasion resistance	PPG PSX 700's abrasion resistance is greater than or equal to the flexible aliphatic polyurethane and superior to ordinary epoxy.
Supreme adhesive strength	PPG PSX 700 has an adhesive strength of 2700 psi (on steel, using ASTM D4541), more than double the strength of the 500-1000 psi offered by conventional epoxy coatings.
Limited accumulation of dirt and mildew	The low surface energy of PPG PSX 700's limits the accumulation of stains, graffiti and dirt, and enhances the ability of the surface to self-clean. For uncontrollable situations such as graffiti and defacement, the product is easy to clean and does not affect the original color and gloss. PPG PSX 700's inorganic chemical makeup protects substrate surfaces from being micro-pitted, which prevents mildew from attaching to it. This avoids potential long-term corrosion problems.
Unlimited topcoat window	PPG PSX 700's unlimited topcoat window make it easy for your field touch up and future maintenance.
Significant cost savings	
Lower application costs	When comparing to a conventional three-coat system, there is one less coat to apply, which significantly reduces initial application costs.
Lower application time & downtime	Applying one less coat with PPG PSX 700 saves project labor time and costs. Plus, PPG PSX 700 saves project downtime by curing and drying to the touch in two hours at 20°C (68°F).
Easy maintenance, clean-dry-recoat	For future maintenance, instead of blasting old coatings and repainting as with traditional aliphatic polyurethane, PSX simply requires that you clean, dry and recoat the area with another coat of PPG PSX 700. The product reduces your operational shutdown time and money for maintenance projects.
Reduced waste management costs	PPG PSX 700 features low volatile organic compound content that reduces disposal costs.
Outstanding environmental characteristics	
Isocyanate-free	PPG PSX 700 contains no hazardous isocyanates, which promotes a healthier working environment and has less impact on the environment.
Low voc emissions	PPG PSX 700 is formulated with high solids and extremely low volatile organic compounds and abides by stringent environmental requirements without compromising performance.

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