

# PSX® 700SG

**PSX 700 Series**  
Patent Nos. 5,618,860 and 5,275,645

*Engineered Siloxane Coating*

**PSX® Advantage:** PSX® 700 Series is the world's first weatherable epoxy it embodies the properties of both a high-performance epoxy and an acrylic polyurethane in one coat. This multi-purpose coating offers "break-through" weather resistance and corrosion control.

## Product Data/ Application Instructions

- Gloss and appearance retention exceeding the best polyurethane
- Significantly lower applied costs
- Excellent resistance to acid and corrosion
- High solids, low VOC
- Resists high humidity and moisture
- Applied by brush, roller or spray—without thinning
- Outstanding resistance to chemical splash and spill

### Typical Uses

PSX 700SG adheres strongly to bare steel, coated steel and inorganic zinc silicate coated surfaces on new construction, repair and field maintenance coating projects. It provides effective long-term corrosion control and weatherability.

- Structural steel
  - Bridges                      –Marine
- Tanks
- Piping
- Industrial power plants
  - Power                      – Wastewater treatment
  - Pulp and paper            – Chemical and petrochemical
- Concrete walls and floors
- Transportation
  - Rail car exterior            – Vehicle equipment—buses, trucks
- Marine
  - Decks                      – Topside and superstructures on ships
  - Boottops                    – Barges and offshore platforms

### Physical Data

Finish	Semi Gloss	
Color	White, Black, Haze Gray, other Federal Standard colors	
Components	2	
Curing mechanism	Chemical reaction	
Volume solids (calculated)		
PSX 700SG	90% ± 3%	
PSX 700FD	90% ± 3%	
Dry film thickness per coat	4 – 7 mils (100 – 175 microns)	
Coats*	1	
Theoretical coverage	ft <sup>2</sup> /gal	m <sup>2</sup> /L
1 mil (25 microns)	1444	35.5
3 mils (75 microns)	481	11.8
5 mils (125 microns)	289	7.1
7 mils (175 microns)	206	5.1
VOC**	lb/gal	g/L
700SG & 700FD (EPA method 24)	0.7	84.0
700SG & 700FD mixed/thinned @ 2 ½ oz/gal (calculated)	0.83	99.9
Temperature resistance, dry	°F	°C
continuous	200	93
intermittent	250	121
Flash point (SETA)	°F	°C
resin	207	97
cure	205	96
FD cure	180	82
Amercoat 12	2	-17
Amercoat 911	75	24
Amercoat 101	145	63
Amercoat 939	60	16

### Qualifications

MIL-PRF 24635 (D), Type V and VI, Class 2, Grades B and C  
NFPA – Class A  
USDA – Incidental food contact

\* When applying more than one coat, it is recommended that total dry film thickness not exceed 10 mils.

\*\*The mixed and applied coating cure reaction will produce VOC of mixed alcohols. For 100 g/l VOC requirements, a VOC - exempt thinner such as Amercoat 939 may be used as needed.

## Typical Properties

### Physical

Abrasion resistance (ASTM D4060)	
1 kg load/1000 cycles CS-17 wheel	weight loss 53 mg
Adhesion, elcometer (ASTM D4541)	2700 psi
Elongation (ASTM D522)	14%

### Performance

Salt spray (ASTM B117)	5500 hours
Face corrosion, blistering	None
Humidity (ASTM D2247)	5500 hours
Face corrosion, blistering	None
Gloss retention (ASTM G53) QUV-B bulb	Greater than 50% gloss retention at 26 weeks

## Systems Using PSX 700SG or 700FD

Substrate	Coats	DFT per coat
<b>Steel (blasted)</b>	1 or 2	5-7
Intact coating	1	3
Dimetcote <sup>†</sup>	1	4-6
Amercoat 68HS <sup>†</sup> , 370 or 385	1	3-5
Amerlock Series	1	3-5
<b>Concrete<sup>††</sup></b>	2	5-7
Amercoat 385, Amerlock Series	1	3-5
<b>Masonry</b>		
Amerlock 400BF	1	3-5
Amercoat 965	1	3-5

<sup>†</sup> Mist-coat/full-coat application may be required. See special thinning instructions.

<sup>††</sup> Fill voids with Amercoat 114A prior to applying Amercoat 385, Amerlock Series.

## Application Data

Applied over <sup>**</sup>	Prepared or primed steel, primed concrete, prepared galvanizing or aluminum			
Surface preparation	SSPC-SP5, 6 or 10			
steel	ASTM D4259 or 4260			
concrete	Galvaprep or blast lightly			
galvanizing	Alumiprep or blast lightly			
aluminum	Contact your PPG representative			
aged coatings	Dimetcote <sup>®</sup> 9 Series, Dimetcote <sup>®</sup> 21-5, Amerlock <sup>®</sup> Series, Amercoat 68HS, 235, 240, 370, 385			
Primers	Airless or conventional spray, brush or roller			
Method	4 parts resin to 1 part cure			
Mixing ratio (by volume)	°F/°C			
Pot life (hours) <sup>*</sup>	90/32	70/21	50/10	
700SG & 700FD	1½	4	6½	
<sup>#</sup> Thinning material with ½ pt/gal after 3 hours will extend pot life to 5 hours at 70°F.				
<b>Environmental Conditions</b>				
Temperature	°F		°C	
air	40 to 120		4 to 49	
surface	40 to 120		4 to 49	
Relative humidity	40% minimum			
Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation during application and initial dry through.				
Relative humidity lower than 40% will extend dry times.				
<b>Heat curing</b>				
Allow 700SG or 700FD to dry to touch before exposing to curing temperatures above 140°F.				
Drying time (ASTM D1640) (hours) @ 40% R.H. or above	°F/°C			
	90/32	70/21	50/10	32/0
touch (700SG)	1½	3	6	12
touch (700FD)	1	2	4½	9
through (700SG)	4	6	11	38
through (700FD)	3	4½	8½	24
Recoat/topcoat time (hours) @ 40% R.H. or above	°F/°C			
	90/32	70/21	50/10	32/0
minimum (700SG over 700SG)	3	4½	9	32
minimum (700FD over 700FD)	2	3	7	18
maximum <sup>#</sup>	None			
Thinner	Amercoat 101, 911			
Equipment cleaner	Thinner or Amercoat 12			

<sup>\*</sup> See surface preparation for aged coatings.

<sup>\*\*</sup> Appearance will vary depending on substrate and application method. Use two coats of PSX<sup>®</sup> 700SG over bare concrete.

## Surface Preparation

Coating performance is, in general, proportional to the degree of surface preparation. Refer to specifications for the specific primer being used. Prior to coating, primed surface must be clean, dry, undamaged and free of all contaminants including salt deposits. Round off all rough welds and remove all weld spatter.

**Steel** – Remove all loose rust, dirt, grease or other contaminants by one of the following depending on the degree of cleanliness required: SSPC-SP6 or 10. The choice of surface preparation will depend on the primer selected and end-use service conditions. In very low to low corrosivity environments, PSX 700SG may be applied directly to steel that has been abrasive-blasted to a near-white metal condition (SSPC-SP10).

**Concrete** – Acid etching (ASTM D4260) or abrasive blast (ASTM D4259) new concrete before priming.

**Aluminum** – Remove oil, grease or soap film with neutral detergent or emulsion cleaner, blast lightly with fine abrasive.

**Galvanizing** – Remove oil or soap film with detergent or emulsion cleaner, then blast lightly with fine abrasive.

**Aged coatings** – Contact your PPG representative. A test patch of PSX® 700SG over intact clean coating and observation for film defects over a period of time may be required, dependant upon the type of aged coating.

PSX® 700SG is compatible over Amercoat 450H and Amershield.

**Repair** – Prepare damaged areas to original surface preparation specifications, feathering edges of intact coating. Thoroughly remove dust or abrasive residue before touch up.

## Application Equipment

The following is a guide; suitable equipment from other manufacturers may be used. Changes in pressure, hose and tip size may be needed for proper spray characteristics.

**Airless spray** – Standard equipment with a 30 to 1 pump ratio or larger with a 0.015- to 0.021-in. (0.38 to 0.53 mm) fluid tip.

**Conventional spray** – Industrial equipment such as DeVilbiss MBC or JGA spray gun with 78 or 765 air cap and “E” fluid tip, or Binks No. 18 or 62 gun with a 66 x 63 PB nozzle set up. Separate air and fluid pressure regulators, and a moisture and oil trap in the main air supply line are recommended.

**Power mixer** – Jiffy Mixer powered by an air or an explosion-proof electric motor.

**Brush** – Natural bristle. Maintain wet edge.

**Roller** – Use industrial roller. Level any air bubbles with bristle brush.

## Environmental Conditions

Temperature	°F	°C
air	40 to 120	4 to 49
surface	40 to 120	4 to 49

Relative humidity 40% minimum

Surface temperatures must be at least 5°F (3°C) above dew point to prevent condensation during application and initial dry through. Relative humidity lower than 40% will extend dry times.

Heat curing

Allow 700SG to dry to touch before exposing to curing temperatures above 140°F.

## Application Procedure

Adhere to all application instructions, precautions, conditions, and limitations to obtain the maximum performance. For conditions outside the requirements or limitations described, contact your PPG representative.

1. Flush equipment with thinner or Amercoat®12 before use.
2. Mix to a uniform consistency.
3. Add PSX® 700SG cure to 700SG resin. Mix thoroughly until uniformly blended.

Pot life (hours)*	°F/°C		
	90/32	70/21	50/10
700SG & 700FD	1 ½	4	6 ½

4. If needed for workability, thin\*\* with Amercoat 911 or 101 up to 1 pint per gallon PSX® 700SG.
5. Apply a wet coat in even, parallel passes, overlap each pass 50 percent to avoid holidays, bare areas and pinholes. If required, follow with a cross spray at right angles to first pass.

Drying time (ASTM D1640) (hours) @ 40% R.H. or above

	°F/°C			
	90/32	70/21	50/10	32/0
touch (700SG)	1 ½	3	6	12
touch (700FD)	1	2	4 ½	9
through (700SG)	4	6	11	38
through (700FD)	3	4 ½	8 ½	24

Recoat/topcoat time (hours) @ 40% R.H. or above

	°F/°C			
	90/32	70/21	50/10	32/0
minimum (700SG over 700SG)	3	4 ½	9	32
minimum (700FD over 700FD)	2	3	7	18

6. Brush and/or roll applications will require 2 coats to achieve a 7 mil DFT. There will be some surface texture, which is typical for brush and roll applications.
7. When applying PSX® 700SG directly over Dimetcote® or Amercoat 68HS see special thinning instructions.
8. Clean all equipment with thinner or Amercoat 12 cleaner immediately after use.

\*Thinning material with ½ pt/gal after 3 hours will extend pot life to 5 hours at 70°F.

\*\*See special thinning for application over Dimetcote and Amercoat 68HS primers.

\*\*\*See surface preparation for aged coatings.

## Thinning for Application over Dimetcote

Thin PSX® 700SG with Amercoat 911 or 101 up to 1 pint per gallon to assist in film thickness control and to minimize bubbling. This will depend on the age of the coating, surface roughness and conditions during curing. Based on conditions an interval between the mist-coat and full-coat may assist in the application.

## Safety Precautions

Read each component's material safety data sheet before use. Mixed material has hazards of each component. Safety precautions must be strictly followed during storage, handling and use.

**CAUTION – Improper use and handling of this product can be hazardous to health and cause fire or explosion.**

**Do not use this product without first taking all appropriate safety measures to prevent property damage and injuries. These measures may include, without limitation: implementation of proper ventilation, use of proper lamps, wearing of proper protective clothing and masks, tenting and proper separation of application areas. Consult your supervisor. Proper ventilation and protective measures must be provided during application and drying to keep spray mists and vapor concentrations within safe limits and to protect against toxic hazards. Necessary safety equipment must be used and ventilation requirements carefully observed, especially in confined or enclosed spaces, such as tank interiors and buildings.**

**This product is to be used by those knowledgeable about proper application methods. PPG makes no recommendation about the types of safety measures that may need to be adopted because these depend on application environment and space, of which PPG is unaware and over which it has no control.**

**If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product.**

**Note:** Consult Code of Federal Regulations Title 29, Labor, parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable federal, state and local regulations on safe practices in coating operations.

***This product is for industrial use only. Not for residential use.***

## Shipping Data

Packaging unit	1-gal	5-gal
cure	0.20 gal in 1-qt can	1 gal in 1-gal can
FD cure	0.20 gal in 1-qt can	1 gal in 1-gal can
resin	0.80 gal in 1-gal can	4 gal in 5-gal can
Shipping weight (approx)	lb	kg
1-gal unit		
cure	2.0	0.9
FD cure	1.8	0.8
resin	10.3	4.7
5-gal unit		
cure	9.0	4.1
FD cure	8.9	4.0
resin	50.0	22.7

Shelf life when stored indoors at 40 to 100°F (4 to 38°C)

resin and cure 2 years from the date of manufacture

Numerical values are subject to normal manufacturing tolerances, colors and testing variances. Allow for application losses and surface irregularities.

This product is photochemically reactive as defined by the South Coast Air Quality Management District's Rule 102 or equivalent regulations.



**PPG Protective & Marine Coatings**

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