

Advancements in corrosion protection



PPG PRIMERON[®] high-performance powder primer series



EUROPE, MIDDLE EAST AND AFRICA



We protect and beautify the world[®]



Why use a powder primer?

After blasting the metal surfaces, primers can be applied to slow down the speed of corrosion, increasing the durability of the coated part and allowing the powder coatings to more easily adhere to sharp edges.



Do I really need a powder primer?

The question really depends on the problem you are solving and the job you are doing. Metals, such as iron and steel, that are prone to corrosion will benefit from the extra protection provided by a powder primer to help guard against puncturing and flaking long term. Powder primer is commonly recommended for these metals:

- Cast and forged aluminum
- Cast and wrought steel
- Hot-dip-galvanized steel

Do PPG powder primers meet industry specifications?

PPG powder primers meet ISO 12944. This specification serves as the industry benchmark for safeguarding steel structures against corrosion through protective paint systems. Initially introduced in 1998, this standard is a collaborative effort involving representatives from pivotal countries and companies vested in steel structure protection.

ISO 12944 encompasses nine parts, covering aspects such as environment classification, protective paint systems, laboratory test methods and systems for offshore structures.



® ISO 12944 corrosivity categories

The environmental conditions and, thus, the severity of the environmental impact can vary greatly depending on the region. For this purpose, ISO 12944 distinguishes between different corrosivity categories with examples of typical environments.

Category and Typical Environment		Class	ISO 6270-1 Water Condensation	ISO 9227 Neutral Salt Spray	ISO 12944-6 Cyclic Aging
			Hours Tested		
LEAST SEVERE	C1 Indoor: Heated indoor spaces without elevated condensation.	Low	-	-	-
		Medium	-	-	-
		High	-	-	-
		Very High	-	-	-
	C2 Indoor: Unheated indoor spaces with increased condensation. Outdoor: Atmospheres with low level of pollution. Mainly rural areas.	Low	48	-	-
		Medium	48	-	-
		High	120	-	-
		Very High	240	480	-
	C3 Indoor: Production rooms with high humidity and low contamination. Outdoor: Urban and industrial atmospheres with moderate sulfur dioxide pollution. Coastal areas with low salinity.	Low	48	120	-
		Medium	120	240	-
		High	240	480	-
		Very High	480	720	-
	C4 Indoor: Chemical facilities, swimming pools. Outdoor: Industrial areas and coastal areas with moderate salinity.	Low	120	240	-
		Medium	240	480	-
		High	480	720	-
		Very High	720	1,440	1,680
C5 Indoor: Buildings with almost permanent condensation and heavy air pollution. Outdoor: Industrial areas with high humidity and aggressive atmosphere.	Low	240	480	-	
	Medium	480	720	-	
	High	720	1,440	1,680	
	Very High	-	-	2,688	
MOST SEVERE	CX Outdoor: Coastal and offshore areas with high salinity and industrial areas with extreme humidity.	Low	-	-	-
		Medium	-	-	-
		High	-	-	-
		Very High	-	-	4,200



PPG Primeron primer portfolio

Corrosion protection is a decisive factor for the durability of a part and one of the most significant challenges for the coatings industry.

PPG's Primeron primer product portfolio is designed to provide high corrosion resistance for a variety of substrates, including steel, hot-dip-galvanized steel, metalized steel and aluminum.

Each of the four product lines were designed with special features that meet various substrate, environmental and end-use requirements.

Suggested end uses

Gas or liquid tanks and pipelines

Truck, trailer and automotive parts

Agricultural and construction machinery

Automotive underbody and other parts

Seacoast or applications with high corrosion performance requirements



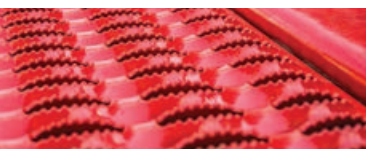
Primeron Zinc

A zinc-rich primer offering corrosion protection



Primeron Pro

Primer that delivers exceptional corrosion protection and a balanced offering of other properties



Primeron Edge

High-edge, outgas-friendly primer technology offering best-in-class corrosion protection for substrates with sharp and laser-cut edges



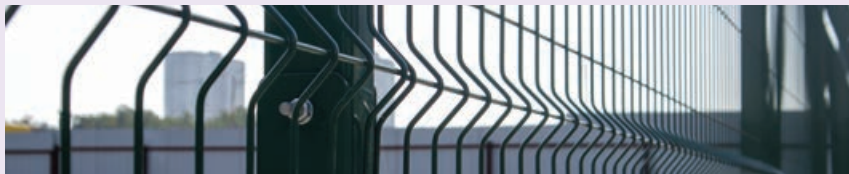
Primeron Flex

Primer that provides excellent corrosion protection for multiple substrates including aluminum





Zinc-rich primer for corrosion protection



Benefits and characteristics

- A zinc-rich primer for use on mechanically pretreated steel, offering corrosion protection



ISO 12944 C4 primer for corrosion resistance



Very good flow and appearance



Low bake capability

Properties	Test Method	Value
Color	-	Dark gray
Surface	-	Semi-gloss, smooth
Gloss at 60°	ISO 2813	60-80
Specific Gravity	Calculated	2.94 g/cm ³
Impact Resistance	ISO 6272 / ASTM D2794	40 in./lbs. direct 20 in./lbs. reverse
Adhesion	ISO 2409	GT0, pass
Conical Mandrel	ISO 6860	0-10 mm, pass

Suggested Industries

Energy applications

General industrial

Automotive parts and accessories

Suggested End Uses

Gas or liquid tanks and pipelines

Seacoast walls, fences or metal objects

ISO 12944 Corrosivity Category

C4

Partial Curing

7 - 10 minutes	130° C (266° F)
5 - 7 minutes	140° C (284° F)
3 - 5 minutes	150° C (302° F)

Full Curing

25 - 30 minutes	140° C (284° F)
20 - 25 minutes	150° C (302° F)
15 - 20 minutes	160° C (320° F)

Storage Conditions

12 months / 30° C (86° F)



An allrounder primer with balanced performance properties



Benefits and characteristics

- Specifically formulated without zinc NIA*. Exceptional corrosion resistance and a balanced offering of other properties, including better coverage, applied cost, adhesion and better mechanical properties than traditional primers



Strong corrosion resistance regardless of the pretreatment method



Good flow, appearance and mechanical properties



Excellent alternatives to zinc-rich primers

Properties	Test Method	Value
Color	-	Medium gray
Surface	-	Semi-gloss, smooth
Gloss at 60°	ISO 2813	60-80
Specific Gravity	Calculated	1.67 g/cm ³
Impact Resistance	ISO 6272 / ASTM D2794	20 in./lbs. direct 20 in./lbs. reverse
Adhesion	ISO 2409	GT0, pass
Conical Mandrel	ISO 6860	0-10 mm, pass

*Not intentionally added

Suggested Industries

Heavy-duty equipment

General industrial

Suggested End Uses

Protection of interior parts

Structural steelwork

Qualisteelcoat Approvals

PE-0162 - ST2 Mechanical, C4H

Partial Curing

7 - 10 minutes	130° C (266° F)
5 - 7 minutes	140° C (284° F)
3 - 5 minutes	150° C (302° F)

Full Curing

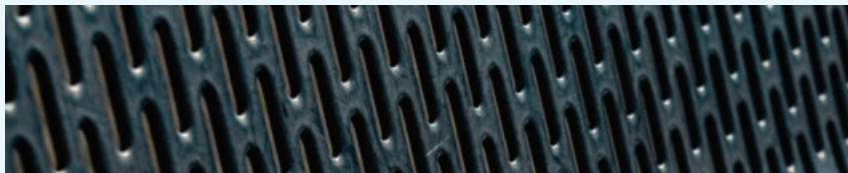
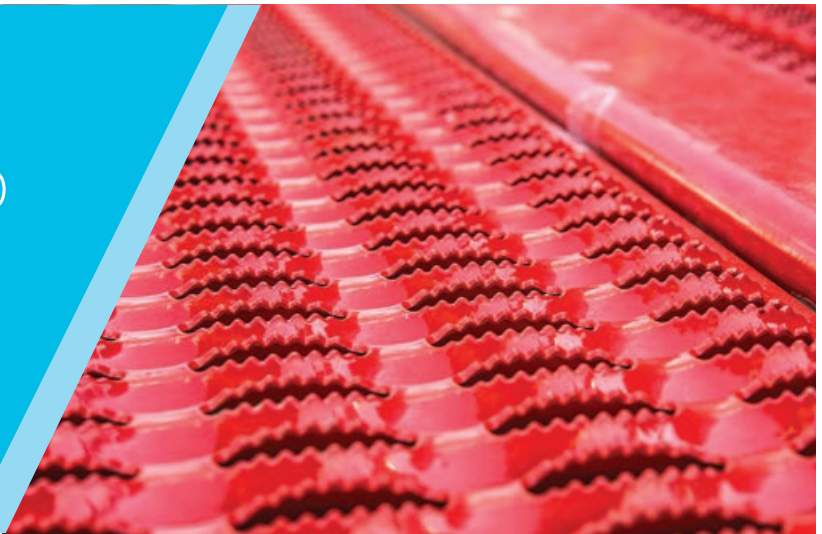
20 - 25 minutes	170° C (338° F)
15 - 20 minutes	180° C (356° F)
10 -15 minutes	190° C (374° F)

Storage Conditions

24 months / 30° C (86° F)



Designed for best-in-class sharp edge protection



Benefits and characteristics

- PPG Primeron® Edge provides exceptional corrosion protection specifically designed for substrates with sharp edges. This primer system is outgas-friendly, ensuring a high-quality finish and long-lasting protection against corrosion



Strong corrosion protection



Enhanced edge coverage for sharp, complex or laser-cut parts



Very good coverage of casting defects and very good results on degassing substrates

Properties	Test Method	Value
Color	-	Medium gray
Surface	-	Matte, smooth
Gloss at 60°	ISO 2813	15-30
Specific Gravity	Calculated	1.54 g/cm ³
Impact Resistance	ISO 6272 / ASTM D2794	40 in./lbs. direct 20 in./lbs. reverse
Adhesion	ISO 2409	GTO, pass
Conical Mandrel	ISO 6860	0-10 mm, pass

Suggested Industries

Heavy-duty equipment

Electrical and power generation

Suggested End Uses

Vents, steps and louvres

Electrical boxes and air conditioners

Qualisteelcoat Approvals

PE-0161 - ST2, Chemical, C4H

Partial Curing

7 - 10 minutes	130° C (266° F)
5 - 7 minutes	140° C (284° F)
3 - 5 minutes	150° C (302° F)

Full Curing

20 - 25 minutes	170° C (388° F)
15 - 20 minutes	180° C (356° F)
10 - 15 minutes	190° C (374° F)

Storage Conditions

24 months / 30° C (86° F)



Versatile primers for multi-substrate use



Benefits and characteristics

- Surface-tolerant epoxy-polyester primer that has good adhesion, great coverage and easy application with semi-conductivity that facilitates topcoat application
- A user-friendly epoxy-polyester primer that can adapt to many different applications; especially outgas-friendly when used over galvanized steel and cast metals



Strong corrosion protection across a broad range of substrates



Good intercoat adhesion and compatibility with a wide range of topcoats



Excellent alternatives to zinc-rich primers

Properties	Test Method	Value
Color	-	Dark gray
Surface	-	Matte, smooth
Gloss at 60°	ISO 2813	20-40
Specific Gravity	Calculated	1.54 g/cm ³
Impact Resistance	ISO 6272 / ASTM D2794	40 in./lbs. direct 20 in./lbs. reverse
Adhesion	ISO 2409	GT0, pass
Conical Mandrel	ISO 6860	0-10 mm, pass

* Not intentionally added

Suggested Industries

Heavy-duty equipment

General industrial

Suggested End Uses

Fencing and material handling

Qualisteelcoat Approvals

PE-0163 - ST2, Chemical, C4H

PE-0165 - HD2, Chemical, C5H

PE-0166 - HD2, Mechanical, C5H

Partial Curing

7 - 10 minutes	130° C (266° F)
5 - 7 minutes	140° C (284° F)
3 - 5 minutes	150° C (302° F)

Full Curing

20 - 40 minutes	170° C (388° F)
15 - 35 minutes	180° C (356° F)
10 - 25 minutes	190° C (374° F)

Storage Conditions

24 months / 30° C (86° F)

Primeron primers key feature summary*

	Primeron Zinc	Primeron Pro	Primeron Edge	Primeron Flex
Key Features	Zinc-rich primer offering corrosion protection	Zinc-alternative primer with exceptional corrosion protection and a balance of other properties	Very good sharp edge coverage , hides casting defects, suitable for degassing substrates	Multi-substrate capable , good intercoat adhesion, excellent alternative to zinc-rich primers
Chemistry	Epoxy	Epoxy	Epoxy	Epoxy-Polyester
Density	2.9 g/cm ³	1.7 g/cm ³	1.5 g/cm ³	1.5 g/cm ³
Overall Corrosion Performance	★★	★★★★	★★	★★
Edge Protection	★	★	★★★★	★
Mechanical Properties	★★	★★★★	★★	★★
Consumption	★	★★	★★★★	★★★★
Process Stability	★★	★★★★	★★★★	★★★★

* Values indicate a range of performance across the entire family of products. For product-specific values, please contact your PPG sales representative or email ic-emea@ppg.com.



Recommended Substrates

Substrate	Pretreatment	ZINC	PRO	EDGE	FLEX
Steel	Chemical		X	X	X
Steel	Mechanical	X	X		
Hot-dip galvanized	Chemical		(X)	X	X
Hot-dip galvanized	Mechanical		(X)	X	X

Corrosion Resistance Performance

Primer	Substrate	Pretreatment	C2	C3	C4	C5
ZINC	Steel	Chemical				
	Steel	Mechanical				
	Hot-dip galvanized	Chemical				
	Hot-dip galvanized	Mechanical				
PRO	Steel	Chemical				
	Steel	Mechanical			ST2 C4H*	
	Hot-dip galvanized	Chemical				
	Hot-dip galvanized	Mechanical				
EDGE	Steel	Chemical			ST2 C4H*	
	Steel	Mechanical				
	Hot-dip galvanized	Chemical				
	Hot-dip galvanized	Mechanical				
FLEX	Steel	Chemical			ST2 C4H*	
	Steel	Mechanical				
	Hot-dip galvanized	Chemical				HD2 C5H*
	Hot-dip galvanized	Mechanical				HD2 C5H*

*Approved by Qualisteelcoat, other performance indications based on lab test results



PPG: WE PROTECT AND BEAUTIFY THE WORLD®



A trusted global coatings leader

Operations in 70+ countries, with 100+ manufacturing facilities and ~50,000 employees



Renowned color expertise

Trend-setting palettes for home, auto and industry paired with unrivaled color matching



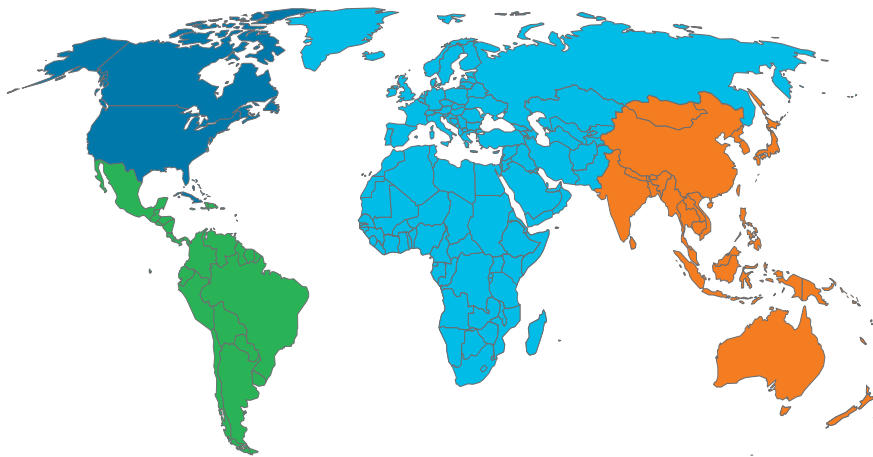
Commitment to sustainability

Over 38% of annual sales from sustainably advantaged products and processes



Dedication to innovation

3,500+ technical employees and \$463 MM average annual R&D investment



Industrial coatings from PPG

- World-class technical services and training
- Help meeting specific, coatings-related environmental mandates
- Assistance setting up new equipment and identifying areas where your processes may be streamlined
- Troubleshooting production issues
- SECURE LAUNCH EXCELLENCE® accelerated custom product formulation and color development process

To learn more about PPG coatings, please visit us online at ppg.com/industrialcoatings, or contact one of the international sales offices listed below.

PPG Regional Headquarters

■ PPG Global Headquarters / PPG North America
Pittsburgh, PA USA
ic-na@ppg.com

■ PPG Latin America
Sumare, Sao Paulo, Brazil
ic-latam@ppg.com

■ PPG Europe, Middle East and Africa
Rolle, Switzerland
ic-emea@ppg.com

■ PPG Asia Pacific
Hong Kong, China
ic-ap@ppg.com

■ PPG China HQ
Shanghai, China
ic-cn@ppg.com

The technical data presented in this document is based upon information believed by PPG to be currently accurate. However, no guarantees of accuracy, comprehensiveness or performance are given or implied. Continuous improvements in coatings technology may cause future technical data to vary from what is presented in this document. Contact your PPG representative for the most up-to-date information.

The PPG Logo, Primeron, Secure Launch Excellence and We protect and beautify the world are registered marks of PPG Industries Ohio, Inc. The IN Logo is a registered trademark of LinkedIn Corporation. © 2025 PPG Industries, Inc. All Rights Reserved. 12/24 IC234

PPG Industrial Coatings • ic-emea@ppg.com • ppg.com/industrialcoatings



We protect and beautify the world®