POR-15 Rust Preventive Paint

Rust Preventive Paints

Product Description

POR-15® is a high performance coating designed for application directly on rusted or seasoned metal surfaces and concrete. POR-15® is non-porous and seals and protects many surfaces from water, chemicals, salt, and other corrosive contaminants. POR-15® is an effective anti-corrosive and rust preventive coating that offers superior chemical resistance due to its dense, cross-linked molecular composition and non-porous attributes.

Typical Applications

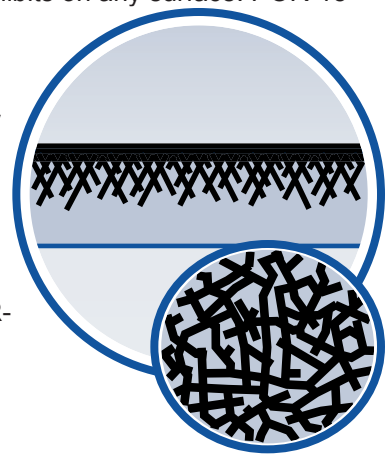
For over 25 years, POR-15® has been applied on thousands of vehicles and structures around the world. Our restoration products can be found in Antique Car Museums, Classic Car Shows, hundreds of body and restoration shops, as well as on government and local municipality trucks and equipment. Extend the life of any metal by protecting it with POR-15®. The following is a small sample of how people are using our products:

- Frame Coating
- Floorpans
- Trunks
- Snow Plows
- Floors
- Pipes
- Holding Tanks
- Air Conditioner & Refrigerator Parts
- Field Equipment
- Lawnmowers
- Any metal surface suffering from corrosion

What makes POR-15® so tough?

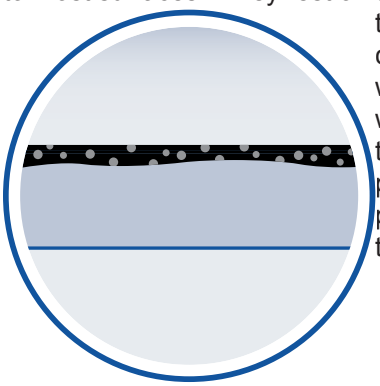
When you apply POR-15® to a rusted metal surface, the first thing you notice is the flow of the product and the way it seems to penetrate the metal. What you are seeing is the amazing tenacity of POR-15® and the way it chemically reacts to "grab" onto rusted metal like nothing you have ever seen! We call this polydigital™ adhesion, and nothing else can match its' bond strength and resilience.

This first image displays the polydigital™ (multi finger like) adhesion that POR-15® exhibits on any surface. POR-15® penetrates the metal, concrete, or wood and grabs hold of it to create a bond unlike any other. Once fully cured, the surface dries to a rock hard, non-porous barrier protecting against rust and moisture. The inset represents the dense molecular structure of POR-15® that no other coating possesses.



While this image shows you the penetration and adhesion of POR-15®, as well its' unique molecular structure, other coatings merely attach themselves to the surface.

This image shows how ordinary paints and coatings adhere to most surfaces. They rest on top, not really penetrating the surface to make a secure bond. These coatings will chip and peel easily when something impacts the surface. That's why polydigital adhesion is a superior technology exclusive to POR-15 alone.



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Stopping Rust PERMANENTLY is a MECHANICAL Process, not a CHEMICAL Process!!

POR-15® is unlike other rust paints because it stops rust MECHANICALLY rather than CHEMICALLY. Rust can't be permanently stopped chemically; it can only be delayed for a while.
POR-15® stops rust permanently because it keeps moisture away from metal with a non-porous coating. Moisture can't get through POR-15. Metal won't rust if moisture isn't present. Whenever you hear that paint stops rust because it contains 'rust inhibitors', watch out! That's double-talk for a temporary fix at best! The POR-15 method is the only one that keeps rust away permanently! POR-15 forms a rock-hard coating that won't crack, chip, or peel, and it gets stronger when exposed to moisture. One quart will cover 96 square feet.

Thin, covering coats are best; POR-15® will accept all topcoats including lacquer-based paints.
POR-15® is a great concrete sealer and is impervious to fuels, battery acid, oils, etc.

- GLOSS BLACK** - use on frames, floorboards, fenders, engine compartments, trunk areas
- GRAY - use for marine and industrial applications, also excellent on concrete
- SILVER - contains aluminum and can be used on badly rusted steel to fill small holes and add strength.
- CLEAR - dries to a perfect satin gloss. Use on exterior surfaces before final painting.
- SEMI-GLOSS BLACK* - for frames, chassis, firewalls, inner fenders that demand original semi-gloss look

** Keep in Mind that although we suggest our colors for different applications, POR-15® is versatile and any color can be used in any situation.*

**Please note: POR-15® Semi-Gloss Rust Preventive paint stops rust and provides a very durable coating, but be aware that it's not a cosmetic coating and may show different variations in gloss depending on the method of application and the surface it's applied to.*

SPECIAL NOTE: When ordering the 4 - Quart Special, please note colors and quantities desired in the comments section.

Drying Time (hours)

Temp	90F / 32C	75F / 24C	50F / 10C
Humidity			
<30%	2.5	3.5	4 - 5
50%	2.5	3	4
70%	2	2.5	3.5
>90%	1.5	2	3

Physical Data

FINISH	Gloss / Semi-Gloss
COLOR	Gloss Black, Semi-Gloss Black, Gray, Silver, and Clear
COMPONENTS	Single component
CURING MECHANISM	Moisture-cure
SOLIDS	74%
ELONGATION RATE	79%
VISCOSITY	250 – 500 cps @ 77ºF
FLASH POINT	104ºF / 40ºC
CURE RATE	Depends on ambient humidity. High humidity equals faster dry time, which varies from 3 to 6 hours.
THEORETICAL COVERAGE	96 sq. ft. per quart, 384 so. ft. per gallon – 3 mils
RECOMMENDED COATS	2

Cleanup

Clean mixing and application equipment immediately after use. Tools should be cleaned with POR-15 Solvent or lacquer thinner before POR-15 cures. Cleaning is not possible after hardening. Observe all fire and health precautions when handling or storing solvents.
Use only POR-15 Solvent or lacquer thinner for cleanup.

Safety

Material Safety Data Sheets should be read and understood by personnel responsible for supervision and application of POR-15. All applicable federal, state, local, and particular plant safety guidelines must be followed during the handling and installation and cure of these materials. Safe and proper disposal of excess materials shall be done in accordance with applicable federal, state, and local codes.

All work personnel should wear gloves, protective clothing, facial protection shield, mask and protective goggles.

Material Storage

Store materials in a temperature-controlled environment, 45ºF - 95ºF / 7ºC - 35ºC and out of direct sunlight. Two-year shelf life is expected for products stored under these conditions.

Physical & Performance Properties

Abrasion Resistance (ASTM-C-501)	Weight Loss
1 kg load/1000 cycles	Zero (0) Loss
Impact Resistance (MIL-D-3134F sec 4.7.3)	Exceeds 16ft/lbs
Impact Resistance (Mil-D-3134J)	Satisfactory per ¶ 3.15
Indentation (Mil-D-3134F sec 4.7.4)	2,000psi /30min No indentation
Flexural Strength (ASTM C-580 psi)	> 5,200 psi
Compressive Strength (ASTM C-579 psi)	> 12,500 psi
Tensile Strength (ASTM C-307 psi)	> 3,200 psi
Elongation Rate (ASTM-D-412)	79%
Flammability (ASTM-D-635)	Self-extinguishing
Bond Strength to Concrete (ASTM-D-4541)	Concrete fails before POR-15®

Weather, Temperature, & Bacterial Resistance

Bacterial & Fungus Resistance (Mil-F-52505)	Zero (0) Growth
Salt Spray Resistance (ASTM B-117)	Zero (0) Change
250 hrs @ 98°F / 37°C	
1000 hrs @ 98°F / 37°C	
Water Absorption (ASTM C-413)	0.0001 maximum
Porosity (NACE Stand TM0174)	0.00 Non-porous
Thermal cycling (NTS Climatic Test Cell)	Passed
120 day cycle (-30°F - 140°F / -34°C - 60°C)	
Resistance to elevated temperatures (Mil-D-3134F)	600°F / 315°C

Qualifications

POR-15® can be used in USDA inspected facilities per USDA - FSIS Directive, No. 11,000.4

All of the above performance attributes meet or exceed Industry and Government standards for coatings in this class

Surface Preparation Defined

Surface preparation and repair are the most important prerequisites for durability and protection for any coating system. In fact, lack of proper preparation is responsible for the failure of approximately 95% of all coatings systems. All surfaces must be examined thoroughly to determine surface conditions. Examinations should include checking for peeling and faded paint, dirt, grease, cracking, surface pits, bare areas, mildew, rust, stains and structural problems. Each surface requires its own preparation techniques.

NOTE - PREVIOUSLY COATED SURFACES: Maintenance painting will frequently not permit complete removal of old coatings prior to repainting a particular surface. Please recognize that any surface preparation, short of removal of all old coatings, may compromise the service life of the new coating system. Check compatibility of previously painted surfaces using a test patch with the coating. POR-15® works best on properly prepared surfaces free of previous coatings.

Metal Surface Preparation

Degreasing & Etching POR-15® Two-Step Method

Step 1 - MARINE CLEAN® DEGREASER

MARINE CLEAN®, is a water-based industrial degreaser used for removing all visible oil, grease, soil, dirt, and other soluble contaminants from machinery parts, turbine blades, diesel engines, compressors, transformers, bulkheads, deck plates, bilge areas; removal of oily deposits found in closed systems such as air conditioning, boiler tubes, compressor lines, heat exchangers and coils; removal of light distillates, mineral oils, heavy grease, and all metal surfaces. After using MARINE CLEAN®, thoroughly rinse with clean water and allow to dry prior to using METAL-READY®.

Step 2 - METAL READY ETCHING SOLUTION

After thoroughly degreasing metal surface with MARINE CLEAN®, apply METAL-READY® to both neutralize any rust and etch any clean bare metal. METAL-READY® gently etches metal, creating an ideal anchor pattern for coatings such as POR-15®, while simultaneously leaving a zinc phosphate coating to insure chemical bonding of paint and steel. Avoid other preps that may leave harmful residues which prevent proper adhesion. METAL-READY® is not caustic, corrosive, toxic or flammable.

Advantages of POR-15®

- Completely waterproof.
- Abrasion chemical, stain and impact resistant.
- Acts as a bridge on cracked areas due to high-level of elasticity.
- Effectively adapts to the expansion and shrinkage of surface caused by temperature changes.
- Does not crack, chip, or peel from the surface substrate due to superior adhesion.
- Inherent static-dissipating properties due to hardness of coating as well as non-porous composition.
- Eliminates the need for a sacrificial zinc primer system by creating a non-porous basecoat system using advanced moisture-cured polyurethane technology.
- Heat resistant up to 600°F / 315°C

Application Procedures

1. Using a sprayer, airless sprayer, brush or roller, apply a first coat to the surface. Appropriate layer thickness: 50µm / 1-2 mils.
2. In order to form a complete anchor, apply the second coat immediately after verifying the dryness condition of the first coat by touch after 1-2 hours have passed. Appropriate layer thickness: 50µm/ 1-2 mils.
3. Second coat (50µm / 2 mils).
4. For externally exposed areas, topcoat with any POR-15 UV resistant topcoat to block from ultraviolet light.

Compatible POR-15 Coatings & Fillers

Primers

- Tie Coat Primer
- Self Etching Primer

Two Component Topcoats

- Hardnose Paints
- WhiteCote
- Glisten PC

Single Component Topcoats

- BlackCote
- Stirling Silver, ChassisCoat Black
- Topside Enamels
- Metal Mask
- Engine Enamels

Repair and Fillers

- POR-PATCH
- POR-15 Epoxy Putty
- Straightline
- Restogrip

Power Tool Cleaning

Power Tool Cleaning To Bare Metal (SSPC-SP 11)

This specification is suitable for POR-15® where a roughened, clean, bare metal surface is required, but where abrasive blasting is not feasible or permissible and requires only the removal of loosely adherent materials and does not require producing or retaining a surface profile. Use MARINE CLEAN™ and METAL READY™ to ensure surface cleanliness and proper adhesion.

Non-ferrous Metal Surface Preparation

Aluminum & Galvanized Metal

Surface to be coated must be clean and free of grease, oil, or other foreign substances. To clean steel surface:

- Mix one part POR-15 MARINE CLEAN™ with 3 parts hot water.
- Spray or pour mixture on surface and scrub with brush until clean.
- Rinse thoroughly with fresh water and dry.

Once the surface is contaminant free, METAL-READY™ is the next step. Proper bonding will not take place without the use of Metal Ready. To properly etch the surface:

- Spray surface with METAL-READY™ and keep wet for 20 to 30 minutes.
- Rinse thoroughly with water and dry.
- If a powder residue remains, rinse again with water and dry thoroughly once more.

**Avoid touching or leaving fingerprints on the treated surface.*

Areas with Holes or Deep Pits

All deep pits and holes shall be prepared with Marine Clean and Metal Ready or they should be abrasive blasted and painted as follows:

- MARINE CLEAN™ / METAL-READY™ or abrasive blasted to white metal finish.
- Fill with POR-PATCH® or Epoxy Putty.
- In addition, POR-15® PowerMesh Reinforcing Fabric may be used to provide additional structural reinforcement or where holes are too large to fill properly.
- Complete specified paint system

POR-15® Protects And Extends Life Of Concrete

Most concrete structures are exposed to chemically harmful elements that threaten their lifespan and cost business and government millions of dollars annually. The highly porous characteristics of concrete permit harmful elements to penetrate which initiates deterioration. Many coating methods have been used on concrete unsuccessfully. POR-15® is the only coating that is able to protect concrete and extend its life expectancy due to its non-porous molecular composition.

POR-15® As a Concrete Protective Coating

POR-15® has successfully been used as a protective coating for floors of factories, warehouses, parking lots, concrete collection tanks, neutralization tanks, reaction tanks, wastewater treatment plants; deck plates of piers and bridges; internal/external walls and ceilings; concrete sewer pipes; inner walls of subways, underground passages and tunnels. As a single-solution moisture-blocking coating, POR-15® is most suitable for porous materials. Extensive industrial applications and rigorous laboratory testing have demonstrated that POR-15® has:

- Excellent chemical resistance to: 50% sulfuric acid, 10% hydrochloric acid, 55% chromate, 85% phosphoric acid, 10% sodium hydroxide, 98% methanol, 50% hydrofluoric acid. No problems shown in results from gasoline and oil testing.[1]
- Strong resistance to salt water – withstood 1000-1500 hour salt spray test (ASTM B-117) with no breakdown.
- Inherent static-dissipating properties due to hardness of coating as well as non-porous composition.
- Extremely weather resistant - no breakdown in the 2000-hour weatherometer2 test which is the equivalent of approximately 10 years.
- Superior resistance to wear and high adhesiveness: ASTM C-501 (Modified)

[1] North America and Asia test sites: US ABIC Testing Laboratory and Korea Chemical Testing Laboratory

[2] Weatherometer - a tool for testing the weather resistance of coatings. It recreates the harsh climactic conditions of the Rocky Mountains (USA) where the desert starts by repeating a cycle of 160 minutes of sunlight, 18 minutes of rain and 18 minutes of wind. 200 hours is regarded as about one year.

Concrete Surface Preparation

POR-15® can be applied to a variety of substrates. As a single-solution moisture-cure urethane, it bonds concrete and blocks water and moisture. It is necessary for concrete surfaces to be adequately cured for at least 30 days at a temperature of 68ºF or more. The surface should be smooth and free of laitance, oil as well as fine dust and particles. Bubble marks, joints and indented parts must be smoothed out or removed. If there are pits in surface, fill with POR-Patch®.

STEP 1: Power wash concrete with MARINE CLEAN™

STEP 2: If any stained spots remain, soak area with MARINE CLEAN™

STEP 3: After concrete is free of oil, dirt, paint spots, or any other foreign materials, the surface needs to be prepared for painting. To properly prepare concrete it needs to be etched with muriatic acid at the ratio of 1 to 20 (5% solution). NOTE: A NIOSH breather, full coverage clothing, gloves and eye protection is required for this step.

STEP 4: Let the acid solution sit for about 15 to 20 minutes and then rinse with clear water through a power washer.

STEP 5: When dry to a depth of four(4) inches,the concrete surface is ready to be coated with POR-15®.

WORK-BASED SPECIFICATIONS

Description	Use	Coat Thickness
Surface treatment (Uneven areas)	Grinding and mortar	If needed
Surface treatment (Pinholes, etc.)	POR-Patch, Putty	If needed
1st coat	POR-15®Anti-Corrosive Paint	50µm
2nd coat (internal)	POR-15® Anti-Corrosive Paint	50µm
2nd coat (external)	POR-15®	50µm