

RUST GRIP®

FIELD APPLICATIONS

Michigan City, Indiana – Blue Chip Casino Boat
Largest Casino Boat Built in US
\$163 Million Dollars in cost of constructing



Bare, rusted, 1 year old steel used for Casino Boat before coating. RUST GRIP was applied directly over all existing rusted steel before any other coatings were applied.

A power-wash was done to remove dirt and residue, then RUST GRIP was applied as a primer over the entire interior and exterior dry surface.

Coating of the Casino Boat was completed using RUST GRIP over its entirety, then using Super Therm, Moist Metal Grip, Lining Kote, and Enamo Grip, as top coatings in specific areas.

No white metal blast was required before coating. Problems of corrosion and insulation were both solved by using Superior Products International II, Inc. coatings.

Vinton, Louisiana Bridge

Coated with RUST GRIP in April, 1996 for testing in a salt air, warm, highly humid environment, along with other competitor's products.

RUST GRIP appears and performs the same today (March 2007) as when the bridge was originally coated.

Other competing corrosion coatings failed.

Baton Rouge, Louisiana Bridge

Coated with RUST GRIP in November, 2003 for testing in a salt air, warm, highly humid environment.

RUST GRIP was applied with both brush and roller over the rusted surface with no surface preparation.

RUST GRIP appears and performs the same today (March 2007) as when the bridge was originally coated.



Miami, Florida Bridge

Coated in 2001, RUST GRIP was applied by brush and roller over the rusted surface of the bridge with no surface preparation except that pack-rust and scale was removed.

RUST GRIP was applied to all metal and concrete in this application.

Caustic and Corrosion Tank

Preparation of steel substrate by high pressure water blast and Xylene wipe to ensure a clean, dry, sound substrate ready to apply RUST GRIP.

RUST GRIP was applied as both a primer (base-coat) and a top coat on the inside and outside of the tank for long lasting protection.

Panama Canal – Pedro Miguel Locks

Coated in 1998, RUST GRIP was applied to the rusted upper portion of the lock gates of the Canal in Gatun. The poppet valves and various related components were coated as well.

In 1999, RUST GRIP was applied to the new valves and lock gates for protection.

As of February of 2007, all surfaces coated with RUST GRIP are still in good condition and no corrosion is occurring.

Morrow, Georgia – Cobb County Bridge

A county bridge was downgraded from a 10 ton load capacity to a 3 ton load capacity, due to rust and deterioration of the substructure. After replacing some of the original deteriorated substructure, the entire steel structure and concrete was coated with RUST GRIP. The State's re-certification process upgraded the bridge to a 21 ton load capacity. The bridge superintendent stated that much of the increase in load capacity was due to RUST GRIP strengthening both the concrete and steel.

Nigeria Offshore Applications



This project involved pipes used for offshore oil drilling operations, subject to cycles of immersion underwater and storage on deck.

The environment of the application which involved years of exposure to saltwater, salt spray, sun and abrasion and included temperatures ranging from 40° to 250° F, caused excessive deterioration of the original coating, which had been applied four years prior.

Steps of the application included sand blasting to SSPC-SP6, surface cleaning and chloride removal, two coats of RUST GRIP, two coats of MOIST METAL GRIP, and two coats of ENAMO GRIP white.

INTERNATIONAL AREAS OF BUSINESS ACTIVITY

Asia: Japan • China • Taiwan • Korea • Malaysia • Singapore • Indonesia • Russia • Kazakhstan
Europe: Italy • Germany • France • Belgium • Netherlands • Greece • Spain
Middle East: Saudi Arabia • UAE • India • Turkey
South America: Venezuela • Colombia • Brazil • Argentina
Central America: Mexico • Panama
Africa: Egypt • Nigeria
Australia • New Zealand • Canada • U.S.A.



RUST GRIP® WILL COVER ANY RUSTED AREA TO STOP AND CONTROL CORROSION

This one-part polyurethane coating encapsulates and holds a patented process to stop the progression of rust, corrosion, lead-based paints, asbestos and other bio-hazardous materials. RUST GRIP® may be applied to metal, concrete, or wood and is extremely easy to use, fast and labor saving.

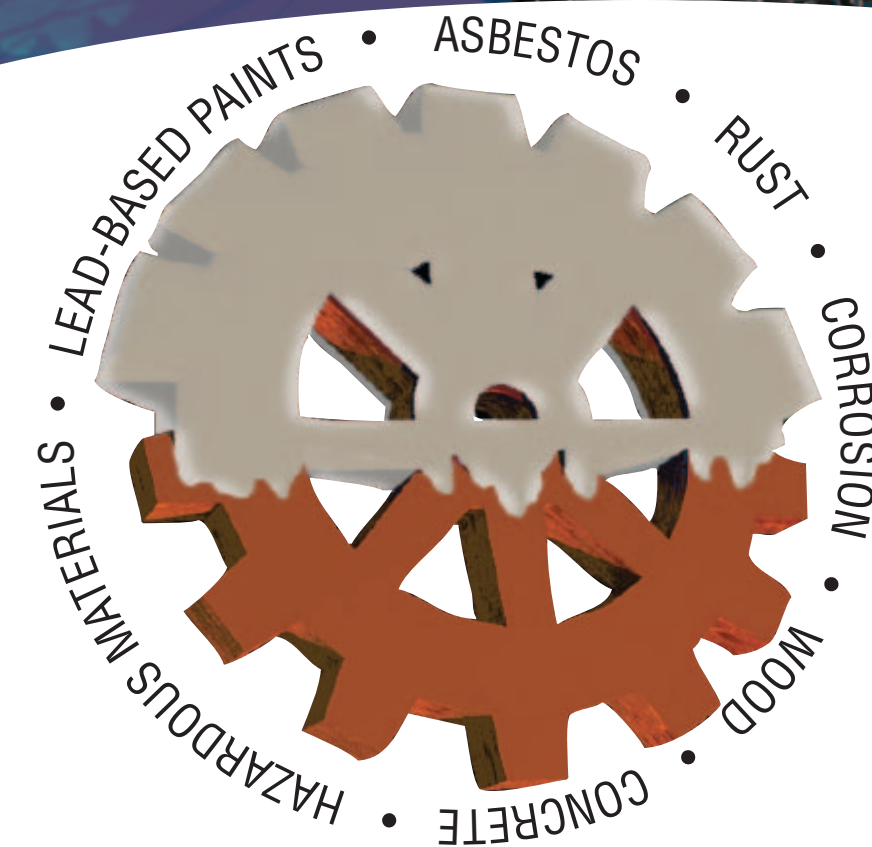
RUST GRIP® is tested to penetrate up to 18 coats of existing lead-based paint.

RUST GRIP IS EASY TO USE, FAST AND LABOR SAVING—ELIMINATING SANDBLAST PREPARATION



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RUST GRIP®



ONE-COAT ENCAPSULATION PATENTED METHOD OF ABATING BIO-HAZARDOUS MATERIALS NO WHITE-SAND BLASTING NEEDED

- VTEC LABS certified penetration of 18 layers of existing lead-based paint
- Endures 29,700 rub cycles without exposing existing lead-based paint
- Passed 2000 hour salt spray test • Test "5" on Flame Spread (0-25 Class A)
- Meets EPA Guidelines • USDA approved for use on surface areas in and around food preparation
- 15 year history of performance on oil rigs and pipe lines • FM, ABS, IMO and Coast Guard approved



SUPERIOR PRODUCTS
INTERNATIONAL II, INC.®
The right coating for ultimate protection.



RUST GRIP offers a simple solution for true encapsulation—a one-coat system that can be applied over a variety of surfaces that meets or exceeds stringent registrations, certifications and testing.

REDUCED SURFACE PREPARATION AND APPLICATION COSTS

- Requires only 1,500 to 3,500 psi power wash (with minimal hand or power tooling) to clean and prepare surface; no white metal or near white metal blast is required
- Can be applied over flash or surface rust without loss of adhesion or reduced performance; can be applied over existing paint (non-glossy, solidly-bonded)
- Can be re-applied or touched up with minimal surface preparation
- Has been applied directly over rusted surface and after 3 years, pull test of 580 PSI compared to 100 PSI before coated.

HIGH SURFACE TENSILE STRENGTH

- 6,780+ psi surface tensile strength after three weeks
- Penetrates deeply into pores of substrate and existing coating to “anchor into” and seal surface
- No other corrosion coatings have the surface tensile strength of RUST GRIP® at the recommended thickness of four (4) dry mils

APPLIED TO MANY SURFACES

RUST GRIP protects and seals new or rusted steel, aluminum, concrete, wood, fiberglass, traditional coatings and existing paint films including lead-based paint, asbestos, and other substrates. RUST GRIP can be applied directly to concrete.

ONE COAT SYSTEM

RUST GRIP is easy to apply using a brush, roller, or airless sprayer. RUST GRIP was designed as a one-coat system, but serves as a primer and/or topcoat.
RUST GRIP is a 60% less costly alternative to the traditional 3-part zinc rich primer-epoxy-urethane system being used over bridges and other steel structures.
RUST GRIP is a one-coat application using two passes before moving the set up.

COST EFFECTIVE

Using RUST GRIP replaces traditional 3-part system at a fraction of the time and cost.

3-part System vs. RUST GRIP

3-part System Steps

1. White Sandblast \$2.50/sqft
 2. Primer \$0.30/sqft of product
 3. Intermediate \$0.30/sqft of product
 4. Top Coat \$0.30/sqft of product
 5. 3 - Laborers \$0.50/labor = \$1.50/sqft
- Total \$4.90/sqft.**

RUST GRIP SYSTEM

1. Power Wash \$0.45/sqft
 2. RUST GRIP application \$0.65/sqft
 3. 1- Laborers \$0.50/labor = \$0.50/sqft
- Total \$1.60/sqft.**

**Advantage RUST GRIP
67% Less Expensive**

“Savings of \$3.30/sqft”

LIMITED SURFACE PREP

RUST GRIP applies directly over existing, firmly bonded paint or rust without loss of performance.
3-part systems normally require a white metal blast (SSPC SP-5) or a near white blast (SSPC SP-10). Blasting is the greatest expense using the 3-part system. RUST GRIP will greatly reduce the over-all cost of a project.

WITHSTANDS EXPOSURE TO CAUSTIC ENVIRONMENTS

RUST GRIP has performed in the petrochemical environments for over 15 years.
It can be submerged in 100% Nitric Acid without any negative effects.
It can line gasoline or solvent storage tanks.
Designed to resist acids, salts, and caustics with no loss of integrity.

PATENTED ENCAPSULANT

- Encapsulates rust, lead-based paint, asbestos, and bio-hazardous materials. Patent #5,695,812
- Eliminates abatement of lead-based paint.

MOISTURE MEMBRANE

- Permanent, protective membrane that stops water penetration over metal, concrete, masonry, and wood surfaces (not for total immersion). Passed ASTM testing for Water-Barrier and Wind Driven Rain Testing.
- Prevents surface deterioration, contamination, and resists the formation of mold and mildew.

CLASS “A” FIRE RATING

- Will help to decrease and not contribute to the spread of a fire.
- Tested “0” Flame Spread and “5” Smoke

ONE-PART COATING

- No pot life constraint; no two-part mixing
- UV controlled

USDA APPROVED

For use in and around food preparation areas.

HIGH SURFACE TENSILE STRENGTH

Achieves a surface tensile strength of 6780+ psi after 3 weeks cure time.

LONG-TERM DURABILITY—CHEMICAL AND ACID RESISTENT

- No loss in performance characteristics or durability over life span
- 15-20 year life expectancy in the harshest environments

REGISTRATIONS, CERTIFICATIONS, AND APPROVALS

USDA Approved
US Coast Guard Approval
ABS (American Bureau of Shipping) Approval
IMO (International Marine Organization) Approval
FM (Factory Mutual) Approval

Louisiana Department of Transportation
Approved for use on Qualified Products List
Passed 1500 hour Salt Fog Test

Mississippi Department of Transportation
Approved for use on Qualified Products List

Tennessee Department of Transportation
Acceptable for encapsulation of galvanized guardrails

University of Kentucky
Acceptable for encapsulation of steel bridges for Kentucky Department of Highways

Georgia Department of Transportation
Field tested by applying RUST GRIP directly over the steel structure and concrete support columns to fill and seal the voids and gaps in the surface tying the structure together.

The bridge when new was built and tested to a 10 ton load capacity. After years in service, it dropped to only a 3 ton capacity caused by deterioration. Surface and structural repairs were made and RUST GRIP was applied to the entire surface of the metal and concrete surfaces. Four months later, a new evaluation was made of the structural strength of the bridge, which was found to have a 21 ton load capacity.

Environmental Protection Agency (EPA)
Meets EPA Guidelines

Ecopetrol Oil Certification
Specifications into tanks, pipes, facilities, and equipment uses
Engineer – Henry Lizzano Paez,
Ingerioro do Corrosion

ASTM TEST LISTINGS:

B 117 – 450 Hour Salt Spray (fog)
RUST GRIP over black steel

C 411 – 96 Hour Hot Surface Performance
Tested at 147 C / 297 F for 96 Hours
No ignition, smoking, smoldering, or color change

D 257-99 D-C Resistance of Insulating Materials
Volume Resistance – Average - 2.683E+12
Volume Resistivity – Average – 5.263E+15

D 1308 Chemical Resistance

D 1653 Water Vapor Transmission

D 2794 Direct Impact Resistance

D 3273 Mildew Resistance

D 3359 – Adhesion and Penetration
Penetrates 18 layers of lead-based paint.
Rated 5A = Excellent

D 4060 – 1000 Cycles Tabor Abrasion
1000 Cycles with a CS 17 Wheel,
1000 gram load
18 milligrams loss per 1000 cycles,
rated Excellent

D 4541 – Pull-off Strength of Coatings Using Portable Adhesion Testers
Average of 10 pull tests was 1467 psi.

D 6904 Resistance to Wind-Driven Rain for Exterior Coatings Applied to Masonry
Test Procedure: Testing was conducted in accordance with ASTM D 6904 except no block filler was used. The coating was applied in two coats. Each coat was approximately 4 mils wet film thickness with a minute dry between coats. The coating was allowed to cure for twenty-one days before testing was conducted.
Conclusion: The coating conforms to the requirements of the superseded Federal Specification TT-C-555B, as tested.

G 85 Prohesion
- 1500 Hours Salt Fog
- Rated 9 (out of possible 10 rating)
- State of Louisiana Department of Transportation

D 7088 Resistance to Hydrostatic Pressure for Coatings Used in Below Grade Applications Applied to Masonry

Objective: To evaluate the hydrostatic pressure resistance of a submitted water-proof coating.

Procedure: RUST GRIP applied to exterior of 8” masonry cube having 1” thick walls. Allowed to dry for 21 days. Testing was conducted at 4 psi. as outlined in the method.

Conclusion: The sample of RUST GRIP does not exhibit any water droplets or blistering when tested. The sample conforms to the requirements as stated in the Federal Specification TT-P-1411A Paint, Copolymer-Resin, Cementitious for Waterproofing and Masonry Walls.

Test	Requirement	Results
Blistering	None	None
Adhesion Loss	None	None
Softening	None	None
Discoloration	None	None
Water Droplets	droplet size 6 maximum	Passed

E 84 Surface Burn - “5” Spread

E 108-00 Spread of Flame on Pitched Roofs
- Class “A” Non-Combustible

E 903-96 Spectral Reflectance
- Average of 3 Tests = 44.6 Solar Reflectance

E 1795 – Encapsulation of Leaded Paint
- Direct Impact Resistance (ASTM D 2794)
- Adhesion (ASTM D 3359, D 4541)
- Dry Abrasion Resistance (ASTM D 4060)
- Water Vapor Transmission (ASTM D 1653)
- Flexibility – Mandrel Bend (ASTM D 522)
- Distilled Water Resistance – Immersion 24 Hours
- .010” Tinplated Steel (ASTM D 1308, D 3359)
- Steel or Aluminum (ASTM D 1308, D 4541)
- Chemical Resistance – 24 Hours-12 Reagents
- Spot Test on Glass (ASTM D 1308)
- Surface Burning Characteristics (E 84)
- Volatile Organic Content (VOC)
- (ASTM D 2369, D 4017, D 3960, D 1475)
- Weathering (1000 Hours)
- Aging (Interior and Exterior)
- Scrub Resistance (ASTM D 2486)
- Black Plastic – No Break through after 12 cycles
- Mildew Resistance (ASTM D 3273, 3274)
- Tensile Properties (6780 psi. after 3 weeks)
- Visco-Elastic Properties (ASTM D 2370)

OTHER LABORATORY TESTING:

Window Cycling Test – VTEC Laboratories – New York

Preparation: RUST GRIP was used to encapsulate a double-hung window removed because of having LBP (lead-based paint.) A machine was devised to use an electronic opening and closing rotary wheel with a digital counter specifically for this test. This allowed the window to be opened and closed at two second intervals.
Procedure: The test was designed to measure friction wear of a coating over LBP to find the failure point of friction wear that would expose the hazardous LBP. The tested window completed 20,000 cycles of opening and closing, which is equal to the opening and closing of a window once a day, every day for 54 years.

Conclusion: A visual inspection showed no wear or friction burn through, and no LBP exposed after 20,000 cycles. Wiping test with a sterile gauze pad proved no LBP.

Testing for ABS (American Bureau of Shipping), IMO (International Maritime Organization and US Coast Guard Approval:
IMO A. 653 (16) Flame Spread
MSC 41 Smoke Toxicity
ASTM B 117, D 1653, D 522, D 3359, & E 1795

China Center for Technical Testing:

National Measurement M0729
GB/T 1771-91
Resistance to Salt Fog (2000 hours)
GB/T 1866-88
Manuel Aging (2000 hours)
GB/T 10834-88
Resistance to Salt Water (1000 hours)
GB/T 5219-85
Adhesion (pulling apart method)
GB/T 1733-93
8 Hours Boiling Water

Thermal Analysis:
NETZ SCH STA 409 PC/PG DSC Rating:
resin burnout, 303c, 404c and 521c

CHARACTERISTICS:

- Silver-Gray in color
- Moisture Cure Polyurethane
- Cures to 6780+ psi tensile strength
- Recoat window: 1 hour to 24 hours without profiling surface (according to current temperature and humidity)
- Impact Resistant
- Can be used to encapsulate asbestos and lead-based paint.
- Aluminum metallic base
- Permeability: 0.22 perms
- Dries to touch in 2 hours at 70° F
- 50% solids by weight
- 51.37 solids by volume
- VOC Level is 414 grams per liter
- Very good chemical resistance, but not recommended for use with ammonia
- UV controlled and is not affected by most caustic environments.
- Currently used on bridges and guardrails to encapsulate lead-based paint and galvanized metal.
- Can withstand electrical currents without losing adhesion. (important for underground pipes and tanks)
- Shelf Life: Up to 3 years (unopened) under appropriate storage conditions.
- 15-20 years life expectancy when properly applied.

LIMITATIONS:

Silver-Gray in color. It cannot be tinted due to the aluminum pigments which gives it its strength and durability. It can be top-coated in the color desired anywhere between 1 to 24 hours (according to current temperature and humidity).
Surfaces must be totally dry. It cannot be used over wet or moist surfaces.
Not for use in situations of constant underwater immersion. It can be used as a primer for epoxies and other coatings made for total immersion.
Not recommended for use around high ammonia levels. It can be used as a primer coat for other coatings.
Not for use on food preparation surfaces that are in direct contact with foodstuffs.
RUST GRIP is USDA approved for use around foods, food preparation and facilities.
RUST GRIP cannot be applied over pack-rust or scale. This must be removed as it tends to hold and hide moisture. Tight surface rust, up to 1/8th inch, that is totally dry can be coated with no problems.

Below: Danville Bridge Project – Inset, before RUST GRIP. Main Image, after RUST GRIP application

