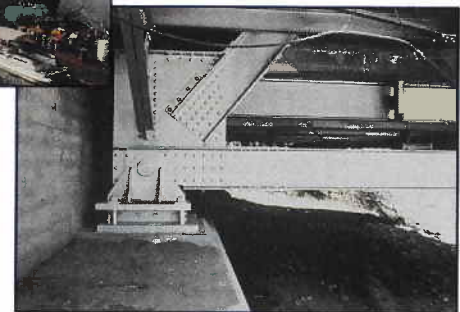




**Thermal
Spraying with
Plattzinc® 85/15
Zinc/Aluminum Wire**

*The Edge On Corrosion
Protection*



Zinc/ Aluminum Combination

Plattzinc® 85/15 is an **alloyed** wire of 85% zinc and 15% aluminum by weight. When thermally sprayed onto steel, the alloy produces a metallic coating incorporating the best characteristics of both metals for optimum corrosion protection.

Dual Phased Coating

Plattzinc 85/15 combines the galvanic protection properties of zinc sacrificing itself in preference to the steel. The aluminum provides a passive barrier protection. Together, the zinc and aluminum provide an excellent corrosion resistant, thermal sprayed coating.

One Application = 15 + Years With No Maintenance

Steel highway bridges throughout North America have been sprayed with Plattzinc 85/15. The test of time has shown that the alloy of 85% zinc, 15% aluminum, sealed and unsealed, provides superior protection against sodium chloride or sulphur dioxide environments and the effects of marine exposure.

Thermal spraying with Plattzinc 85/15 can be easily applied to a properly blasted surface up to a 20 mil thickness in just one application. Typically, one pass applies approximately 2 to 3 mils. No drying time is needed. The coating is dry on contact allowing sealers and/or topcoats to be applied immediately when specified.

Plattzinc 85/15 Features

- Lab tests have yielded bond strengths for Plattzinc 85/15 of 3500 psi on properly prepared, grit blasted steel: higher than both pure zinc (1300 psi) and pure aluminum (2800 psi). Adhesion strengths will vary with application and equipment.
- Maximum Service Temperature is 600° F (315°C)
- Spray deposit density of 95%. Sealers and topcoats will adhere well due to the physical nature of the coating.
- Deposition rate efficiency of Plattzinc 85/15 is higher than other materials. Coating coverage per pound sprayed is increased, thereby reducing overall spraying time and labor costs. Example: Spraying a thickness of .006": Zinc covers 3.5 sq. ft/ lbs. 85/15 covers 4.3 sq. ft/lbs.
- Plattzinc 85/15 has excellent machinability, equivalent to aluminum and superior to pure zinc.

CHEMICAL COMPOSITION:	15% Aluminum (tol. +/- 1%) Balance Zinc
DENSITY:	.207 Lbs. per cubic inch.
DIAMETERS AVAILABLE:	.079", .091" (11 Gauge), 1/8" and 3/16"
PACKAGING:	50 lbs coils 40 Lbs. plastic spools 450 lbs. payoffpak fiber drums.

Applications:

- Steel Infrastructure: Bridges, Walkways, Bridge Bearings Railings, Piers
- Waterways, Gates, Locks
- Repair of Galvanized Coatings
- Exterior of Steel and Iron pipes
- Gas Cylinders
- Boat Trailers and other Marine equipment
- Tanks

No Volatile Organic Compounds

With Federal, State and local regulations limiting VOCs, durable, cost effective coating selection has become increasingly difficult. A thermally sprayed coating of Plattzinc 85/15 has NO VOCs.



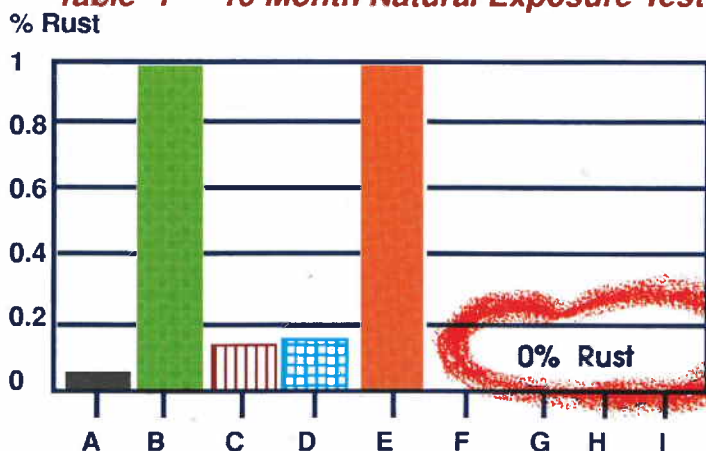
The Federal Highway Administration commissioned a test program in 1988 to investigate the performance of "low VOC" coating systems for bridges. Lab tests and long term natural field exposure testing was done and evaluated after 6 months, one, two, three and four years. Other natural exposure evaluations were done after 16 months. Among the coatings tested was Plattzinc 85/15. Tables 1 & 2 show the results of some popular systems with <340 g/l (low VOC).

The conclusions after 5 years of study were that both zinc and 85/15 provided excellent long term performance. In terms of rusting and undercutting at intentional scribes to the substrate, zinc and 85/15 showed superior corrosion control and performed better than a majority of the paint systems tested. Based on this performance, the report stated that the thermal sprayed coatings appear to be the coating of choice on selected, highly corrosion prone bridge structures prior to erection or maintenance replacement.

Individual states have also conducted lab and field testing on Plattzinc 85/15. Their results favored field applied thermal spraying with 85/15 over other maintenance options. The factors making a thermal spray coating attractive include;

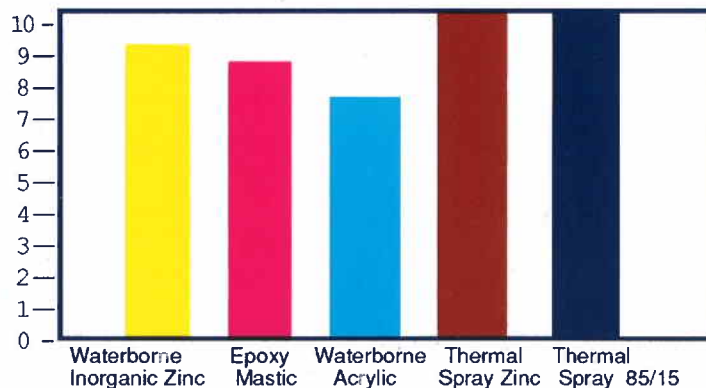
- Existing paint is in poor condition.
- Bridge substructure is in good condition.
- Bridge deck is in good condition, new or recently rehabilitated.
- Steel is exposed to harsh salt spray or industrial atmospheres.
- High costs are anticipated for future maintenance operation.

Table 1 * 16 Month Natural Exposure Test



- | | |
|-----------------------------|----------------------------------|
| A Waterborne Inorganic Zinc | F Zinc Thermal Spray (unsealed) |
| B Waterborne Zinc Acrylic | G Zinc Thermal Spray (sealed) |
| C Epoxy Mastic Urethane | H 85/15 Thermal Spray (unsealed) |
| D Epoxy Enamel | I 85/15 Thermal Spray (sealed) |
| E Acrylic Latex | |

Table 2* 4 Year Natural Exposure Test



**Average from 3 Test Sites:
Rusting Performance 1= poor, 10= excellent**

* "Comparing the Performance of Metallized and Conventional Low VOC Coatings Applied to Steel in Marine Environments", R. Kogler and J. Peart, 1995.

Guidelines for Thermal Spraying With Zinc and Zinc/Aluminum

Precleaning with by solvent, steam or power washing to remove dirt, grease and soluble salts may be required.

- Blast cleaning to white or near white (SSPC-SP5 or SSPC-SP10) with an angular grit to achieve an anchor-tooth 2-4 mil profile.
- Moisture cannot be present on the steel surface and spraying should not take place when the steel temperature is less than 5°F (3°C above the dew point).
- One layer or pass of the thermal spray coating must be applied within 4 hours of blasting the surface.
- Spray pattern should be in block form. The coating should be applied in multiple layers at right angles to the previous layer (box pattern).
- The sprayed coating should be visibly free of lumps, blisters and loosely adhering particle.
- Typical coating thickness is from 4 mils to 20 mils, depending upon the environment, use of sealers, longevity to be achieved and specifications.
- Jobsite coating standards, quality control standards, visual inspection and adhesion conformance should be required.
- All government regulations, health and safety standards must be observed.

Association Specifications Related to Thermal Spraying

SSPC CS- Guide 23.00, June 1, 1991, Coating System Guide, Guide for Thermal Spray Metallic Coating Systems; Steel Structures Painting Council.

ASTM B833-93, Standard Specification for Zinc Wire for Thermal Spray, American Society for Testing and Materials.

ASTM A780-90, Standard Practice for Repair of Damaged and Uncoated Areas of Hot Dip Galvanized Coatings, American Society for Testing and Materials.

ASTM C633, Standard Test Method for Adhesion or Cohesive Strength for Flame Sprayed Coatings, American Society for Testing and Materials.

ANSI/AWS C2.20-9X, Specification for Zinc Thermal Spray Coatings for Reinforced Concrete, American Welding Society.

ANSI/AWS A533-9X, Specification for Alloy Wires, Cored Wire and Ceramic Rods for Thermal Spraying, American Welding Society.

ANSI/AWS C2.18.93, Guide for the Protection of Steel With Thermal Spraying Coating of Aluminum and Zinc, American Welding Society

Mil 6712C, Military Specification, Wire, Metallizing.

CSA Standard G189, Reaffirmed 1992, Sprayed Metal Coating for Atmospheric Corrosion Protection, Canadian Standards Association.

ISO 2063, Metallic and other inorganic coatings - Thermal spraying. Zinc, aluminum and their alloys, International Standard, ANSI.



Quality Management System is
ISO 9002 Registered/Certified.



The Platt Brothers & Company

2670 South Main Street, P.O. Box 1030

Waterbury, Ct. 06721-1030

Phone: 203-753-4194 outside Ct 800-752-8276

Fax: 203-753-9709 www: Plattbros.com

This document, its contents and related information are submitted as suggestions with no warranty or other representation. The Platt Brothers & Company shall have no liability of any kind, grants no license and assumes no responsibility as we have no control over the use of this information, environmental conditions, structure chosen for coatings or application of the products or procedures recommended herein.