



MaineDOT

Bridge Maintenance Division

Steel Bridge
Preservation

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MaineDOT

The Best Bridge Joint
Is
No Bridge Joint

The Best Bridge
Paint
Is
No Bridge Paint

(Unless You Have To)

Overview

- **What We Paint and Treat**
- **Access**
- **Surface Preparation**
- **Tools**
- **Materials**
- **Safety and Training**

What We Paint & Treat

- **Bearings and Beam Ends**
- **Steel Bridge Rail**
- **Zone Painting - Steel Arches & Trusses**
- **Full Paint – Small Pony Trusses & Steel Stringers**

Spray Applied Treatment

Fluid Film

Marine

Agricultural

Home

Industrial

Transportation?









Bearings & Beam Ends Paint

- Surface Preparation

SP-2 or SP-3

- Paint

Primer & Finish Coat

or

Finish Coat







Carboline

Carbomastic 15 Aluminum Paint

This modified aluminum epoxy mastic was the pioneer mastic coating in a number of industrial markets.

- Excellent performance over minimal surface preparation.
- Suitable for topcoat for most tightly adhered existing coatings.

Primers

Self-priming. May be applied over most tightly adhered coatings as well as inorganic zinc primers.

Substrate & Surface Prep

- SSPC-SP2 & SP3 are acceptable methods.
- SSPC-SP6 is for maximum protection.
- SSPC-SP7 & SP12 are also acceptable preparation methods.

Topcoats

Maybe be used underneath:

- Acrylics
- Alkyds
- Epoxies
- Polyurethane
- Or leave as is.

Additional Features

- May be applied at 35° F
(when CM 15 FC part B utilized.)
- VOC compliant
- Excellent choice for field touch-up of zinc-rich primers & galvanized steel.
- Cleanup uses Thinner #2 or Acetone.
- Application: Brush & Roller or Airless Spray.
- 2 Gallon Kits available, A + B, 1:1 Ratio, 25 lbs.
- Reasonable cost @ \$60/gallon.
- Recoat time: 5 to 32 Hours.
- Pot Life is 1 to 2 Hours
(unless thinned with Thinner #76)
- Application Conditions are reasonable: 50 - 100° F & 0 – 95% Humidity.

Surface Preparation Specification No. 2

SSPC-SP2

Hand Tool Cleaning

Removes all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter.

Surface Prep & Methods

- Visible deposits of oil, grease or other material removed.
- Use impact hand tools to remove stratified rust (scale) & weld slag.
- Use hand wire brushing, abrading, scraping & similar.
- May feather the edges of remaining old paint so repainted surface can have reasonably smooth appearance.



Surface Preparation Specification No. 3

SSPC-SP3

Power Tool Cleaning

Also removes all loose mill scale, loose rust, loose paint and other loose detrimental foreign matter.

Surface Prep & Methods

- Visible deposits of oil, grease or other material removed.
- Use rotary or impact power tools to remove stratified rust (scale) & all weld slag.
- Use power brushing, abrading impact or other power rotary tools.
- Do not burnish surface or form burrs, sharp ridges or cuts.



Other acceptable surface preps :

- SP7 is Brush Off Blast-Cleaning.
- SP12 is using Waterjetting.
- SP10 is Near-White Blast-Cleaning.
- SP6 is Commercial Blast-Cleaning.



Reasonable amount of effort for good protection – Cost = \$30,000



Tools

- Wire Brush
- Scraper
- Slag Hammer
- Pneumatic Chisel
- Needle Gun
- Roto-Peen
- Needle Grinder





Needle Grinder



Access & Enclosures

- Swing-Lo Staging used extensively
- Ladders
- Aerial Lifts
- Standard platforms and enclosures are designed within the Bridge Maintenance Division.
- Bed Ladders & Dimensional Lumber





Custom Designs are Not Unusual







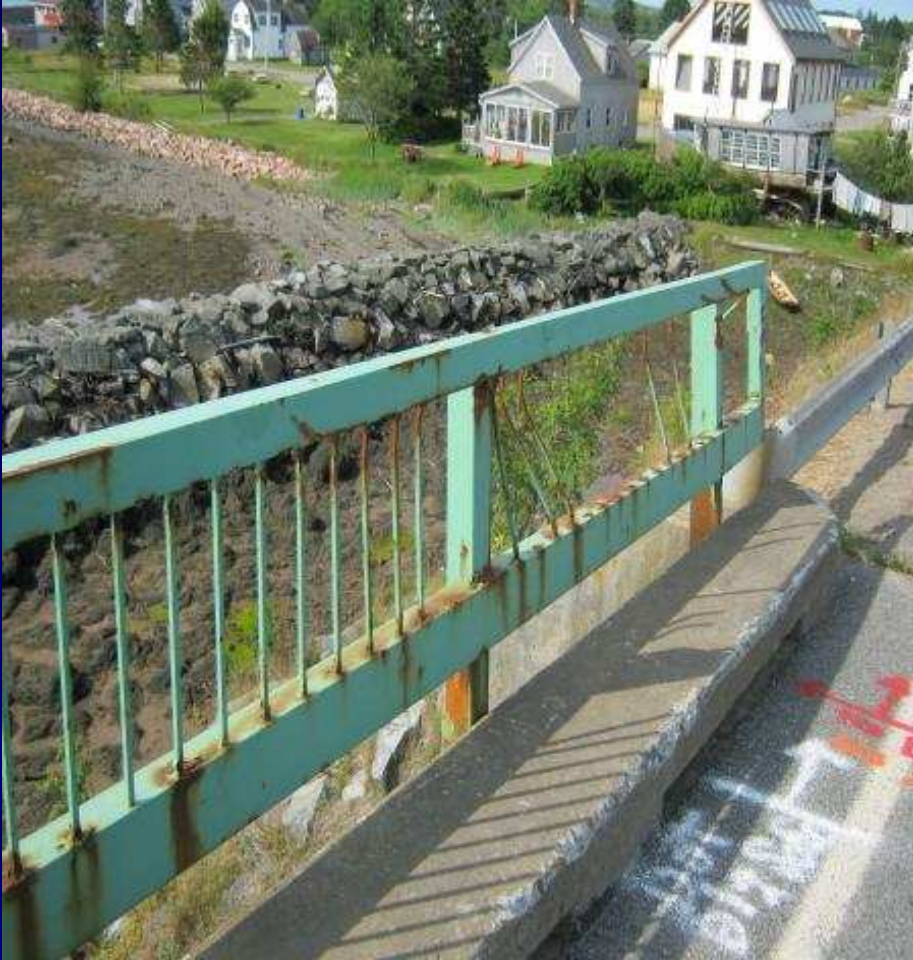
Zone Painting



Zone Painting



Hand Tool & Lead Overcoat



Work Areas

- Designated and distinguishable areas required to eliminate or minimize public and worker exposure.
- Each work zone has distinct exposure level and activity restriction.

Zone 0: Public Zone

- This area is uncontrolled and is occupied by the public.



Zone 1: Support Zone

- Lead removal equipment and waste are not handled or stored.
- General industry standards apply, generally respirators not required



Zone 2: Contamination Reduction Zone

- Areas that include storage and handling of lead paint removal equipment and waste.
- Respirators and protective clothing are required.





Hygiene

- HEPA vacuum clothing
- Remove protective clothing and shoe covers
- Remove respirator last!
- Wash face and hands
- New coveralls daily
- Wet wipe respirator daily



SPECIAL WASTE

TOXIC
(May Contain Lead)

No Transport Manifest Req'd

SPECIAL WASTE

START DATE	7/21/05
DATE FULL	
CONTENTS	GRAY WATER
GENERATOR	WI Department of Transportation
LOCATION	I-95 Bangor

Zone 3: Paint Removal Zone

- Paint removed by blasting or power tools with engineering controls
- Respirators required
- Zone 3 will revert to Zone 2 following paint removal and clean-up

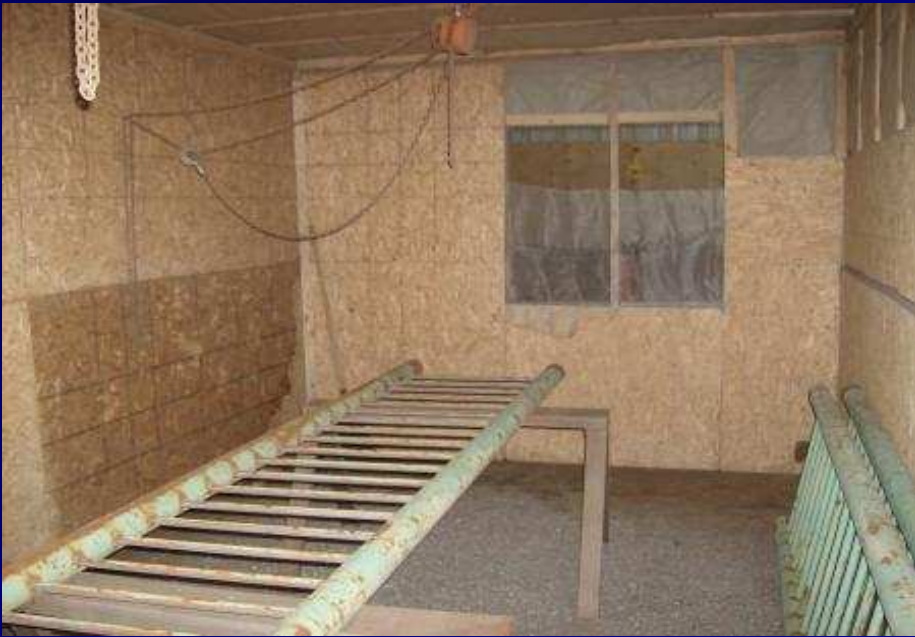








Zone 3



Full Paint



Set up-Tear Down-Set Up Most time Consuming Effort



Full Paint – Dust Collector



Classifier



- Classifier separates the lead flakes from the steel shot
- Steel shot reused up to 3 times
- Paint chips transferred from classifier to hazardous waste barrels

Hazardous Waste

- Lead paint chips and filters from dust collector
- Barrel clearly marked when first used
- Barrel marked when full and transported with a manifest to one of three of our large quantity generator sites.
- Large quantity generator sites can only accumulate 3 barrels.

U.S. D.O.T. SHIPPING DESCRIPTION

HAZARD CLASS

HAZARDOUS WASTE

FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

IF FOUND, CONTACT THE NEAREST POLICE, OR
PUBLIC SAFETY AUTHORITY, OR THE
U.S. ENVIRONMENTAL PROTECTION AGENCY

CAUTION

CAUTION

GENERATOR		DATE 8-29-08
MDOT Bridge Maintenance		
ROAD Arroostook River Bridge		
CITY Fort Fairfield ME 04769		
EPA ID #		LEAD
EPA WASTE #		
UNCLAS	DESCRIPTION	HAZ. CONTROL
	Sandblast Sand	

CONTAINS HAZARDOUS OR TOXIC WASTE

HAZARDOUS CONSTITUENTS
Full-8-29-08

Paint

Sherwin Williams

3 Coat Moisture Curing Urethane

1. COROTHANE I GALVAPAC 1K ZINC
PRIMER \$60/gal
2. COROTHANE I IRONOX B \$38.50/gal
3. COROTHANE I HS ALIPHATIC FINISH
COAT \$57/gal

Safety

- Annual physical
- Annual respirator fit test (Clean Shaven)
- Competent person for scaffolding
- Competent person for fall prevention/protection
- Blood monitoring when initially exposed and rechecked 2-6 months based on blood lead levels
- MaineDOT's blood lead level 60% of OSHA

Full Paint Costs

Lincoln Spur/I-95 width=34' length=458'
5-beam arrangement Total cost \$360,000

I-95/Birch Stream width=47' length=100'
5-beam arrangement Total cost \$100,000

Question?