

BRIDGE PAINTING REPORTS

2012 SEBPP Conference
Atlanta, GA

Group number: 1

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

- Galvanizing
- Spot Painting
- Surface Prep
- Over coating
- Warranty issues

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Inspection programs
- Open to newer paint systems
- Regional specs.
- Project Specific Based on paint systems repainting and spot coating

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Training on coating for DOT
- SSPC & NACE have training courses
- Training for contractors

Group number: Table 2

Discussion topic: Paint

Discussion Highlights (note main discussion items)

- Different type paint systems.
- How many coats
- Zinc painting in the field 1 coat verse 3 coats.
- Metalizing-old coating all rust needs to be removed for bonding. Product has been updated
- Total removal up to 30 years if you use good paint system shop paints 20 years field. - 3 coat zinc system also depends on type of structure.

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Projects on roadways and rehab original structures while under construction or the roadways
- Over coat service life up to 10 year zone painting, Zinc 25 year service life with a recoating up to 15 years spot painting and joint rehab then at 20 years deck replacement and beam cleaning and painting
- Inspection-proper inspection very important and type paint system for life of the paint system

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Dedicated funding for painting
- Tie other repair activities to painting
- Avoid water stots - go back to design and have better details. For existing bridges, start preventive maintenance for this deficiency.

Group number: 3

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

- There is a financial advantage to spot painting
- Maximize premature failure prevention via surface preparation
- Favor regional specs
- We do need project specific specs for over coating/ spot painting
- Generally 3 coat systems are used in states represented
- Expanded use of weathering steel would benefit in the proper environment which excludes high moisture environments
- Repaint when necessary as dictated by field conditions
- Reality of expectations for current and future coating systems depends largely upon contractor surface prep methods

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Termarust representative - No sandblast necessary but pressure washing, project cost about 1/2 typical, not inert but chemical base effective against pack rust, shuts down corrosion chemically via 1 coat
- Weathering steel not used in tunnel like or wet environments

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Chloride testing on steel
- Testing to chemically stop existing corrosion
- Training offered internally by NCDOT (Coatings Class) could help other states as well
- Better adhesion and surface prep research
- Better training for inspectors would greatly help contractor adherence to contract specifications or possibly hiring a third party

Group number: Table 4

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

- Painting recommendations based on type of bridges (new bridges versus existing bridges)
- Knowledge gap between Bridge, maintenance, and material personnel
- Proper training for inspection personnel (construction, bridge, and maintenance)
- Proactive approach for proper maintenance for deck joints and drainage systems etc...

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Joint warranty between contractor and paint manufacturer
- Paint contractor qualifications

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Forum between bridge, maintenance, and materials personnel
- Best practice recommendations between certain regions (southern states, northern states, central states, etc...)
- Performance based standards, policies, and procedures
- Clearer specifications, contracts, and standards per region (case by case basis)
- More testing for proper application

Group number: Table #5

Discussion topic: Bridge painting

Discussion Highlights (note main discussion items)

Types of paint and life cycle.

Single coating , Info on the one coat system vs 3 coating system.

Discussed good contractor adherence to specifications - Is a direct result of the construction inspector - Additional training for inspectors will go along way.

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

Decision matrix for all spot, Zone and complete painting using the NBIS codes and/or component codes.

Metalizing over rail roads life cycle of metalizing.

Single coating , Info on the one coat system.

3 coating system

Group number: Table 6

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

- Specifications
- Weathering steel

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Proper installation of the product.
- Stay in contact with the contractor for proper installation.
- Use only certified contractors.
- Following proper applications.
- Prequalification for installation
- Durability of the product.

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Research different kind of products.
- Keep a closer look at installation.
- Who is responsible?
- Selecting the right product.

Group number: 7

Discussion topic: Bridge Painting Techniques & Strategies

Discussion Highlights (note main discussion items)

Paint (Spot, Partial, Complete)

Improved Specifications

Paint Systems

Weathering Steel

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

Lead Chromate Oil Alkyd System (Before 1980-Orange Primer/Silver Top)

- Non-Lead Oil Alkyd System (After 1986-1990-Red Primer)
- Zinc-Rich System (Zinc Primer-Green color that peels off easy)
- Water-Born System (After 1994-Silver Primer, Red/Reddish Brown Primer and both with Beige Buff)
- Epoxy Mastic-Black Pile Paint.
- Inorganic Zinc (3 part system)
- Metalizing
- Some weathering steel not working so well.

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

Need more inspection and control during painting process.

Need more training on painting for onsite inspectors.

Need to have inspectors full time during painting.

Need more training of painting contractors.

Discussion Highlights (note main discussion items)

- VA does mainly spot/zone painting, Sspc guidelines state that if more than
- 15% of the bridge is in need, then the whole bridge should be re-painted
- SC-maintenance not allowed to touch lead based paint
- VA System-3 coat zinc based
- SC System-
- Risks involved in an overcoating program: Thickness of existing paint layers
- Using certified contractors - SSPC standards are very stringent
- VA-requires a site specific plan covering environmental issues/concerns
- Surface Prep-is the Key
- Weather Conditions - VA requires at least 40 degrees
- Use of tarps and heating units to warm the bridge
- Beams that have been stripped clean should be painted immediately,
- Action Plan
- The approach to maintenance-planning-painting needs to change
- Develop a Maintenance Painting Plan
- Determine the condition of existing bridges that have been zinc painted
- Long term warranties can be used as a tool prior to bridge turnover

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

-

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Develop painting plan
- Evaluation of bridge conditions
- Long term warranties for paint systems

Group number: 9/12

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

Joint Replacement before painting

Cleaning of steel before painting of Superstructure & Substructure

Painting or Spot Painting of Superstructure & Substructure

Research need of paint

Weathering Steel

Over Coating

Improved Spec

Traffic Control - Time lanes closed

Experience

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

Remove Replace - Active

90% Lead Abatement

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

Spec repository/Special provisions - Most current

Painting guidelines for existing piles

Regional Spec

HPPS - More than 20 years service (Research)

Coating Decision Matrix: With cost

Group number: 10

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

- Spot painting - Not used in FL, GA
-
- Future for Paint systems
- 1) Evaluate existing system
- A) initial cost
- B) Durability
- 2) Getting a good product
- A) preparation
- B) application
- C) inspection - NACE
- D) holding contractors accountable
- 3) Specify better paint systems
- A) evaluating paint systems
- B) Performance specification???
- C) warranty

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

-

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- 1) knowledgeable , dedicated Inspectors
- 2) Challenging the Low Bid process
- A) contractor/material
- 3) Documenting product performance (project performance??) over time for a specific environment
- 4) determine inexpensive remedial action to extend paint life
- 5) Engineered solutions
- 6) Evaluate HPPS
- 7) Use weathering steel where possible with NSBA detailing
- 8) Qualified contractors/track record

Group number: 11

Discussion topic: Bridge Painting

Discussion Highlights (note main discussion items)

- Types of paint systems used and their performance.
- What triggers the decision for spot painting vs. overcoating?
- Performance of weathering steel.

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Solutions for bridge maintenance painting - Calcium Sulfanate is an all purpose material.
- Cutting and patching of weathering steel for repairs.

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Need more research on newer paint systems available.
- Web based training for anyone inspecting painting projects.
- Certification for contract inspectors.
- Need for performance based paint contracts.

Discussion Highlights (note main discussion items)

- Guidance of Spot / Zone painting versus entire bridge
- Maintaining the barrier system with painting projects
- Sharing information between Agencies on specification of best practices
- Real cost of weathering steel and alternatives publication
- Galvanizing
- When to re-paint
- Metalizing
- Aesthetic
- Surface preparation / enforcing of specs
- Training of Agency inspectors for painting projects
- Industry educating the Agencies

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Weathering steel
- Galvanizing
- Spot / zone painting essential
- Manufactory inspections
- New construction whit new current standards

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Guidance/Studies dealing with the effectiveness of bridge washing
- Guidance of Spot / Zone painting, metalizing versus entire bridge painting
- Galvanizing, Metalizing, Painting education on cost and appropriate application
- Training of Agency inspectors for painting projects, SUFACE PREPARATION, (i.e. what surface preparation and testing done before re-coating begins)

Discussion Highlights (note main discussion items)

- Spot zone painting verses complete repainting. Number of bridges/ cost
- Painting concrete beam ends.
- Enviromental issues containing paint, lead paint,
- H-piles different types of paint
- Over coating? Education of over coating is an issue. Training should be implemented.
- Cleaning surface/ application! Inspectors should be present during prep and painting process
- Paint in correct conditions / Temp, humidity, (weather conditions)
- How far does the paint deteriorate before you need to start being concerned (Time Frames).
- Is it the right time or conditions allow it or cost effectiveness allows it. Should we have scheduled it sooner or spot painted verses total painting.
- Weathering steel?
- Flexible paint.
- Painting concrete/ is it paint cracking or concrete cracking? Insure paint does not hide deficiencies!
- The use of a Navy grease for bridge beams ends?
- National repository for what did or didn't work?

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- Insuring qualified personnel is present during application and preparation

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- Research cost effectively overcoat verses preservation instead of total rehab. Risks? Timing? When do you let it go. Characteristics of each situation! Each bridge is different.
- Capture what is working well for a paint system. Is it really working?
- Is there a way of having a repository of paint systems? If so having the ability of accessing it?

Group number: Table 15

**Discussion topic: Bridge Paint
Techniques**

Discussion Highlights (note main discussion items)

- **Spot and zone painting**
- **Spray metal galvanizing**
- **Surface prep specs.**
- **Paint system identification**

Notable Practices (Note practices, strategies, policies, products, etc that are working well)

- **West Virginia has a paint coding system in place that is displayed on the bridge**
- **West Virginia long-term paint evaluation**
- **Florida has value added bridge component specification**

Action Items (Note recommendations for research, leadership, communication, facilitation, technical assistance, etc)

- **Better spot and zone painting spec. examples**
- **Better surface prep pre-evaluation for contract development**
- **Better paint system info incorporated into bridge management system**