Contract Preservation (Washing/Sealing)

David Steele, P.E.
Kentucky Transportation Cabinet
Washing/Sealing

• We let two or three contracts a year
• Funds come out of our bridge maintenance budget
• Concentrate on bridges that have a steel superstructure
• Some of our District bridge crews (state forces) are doing similar actions.
Work Specified in Contract

- Furnish all labor, materials, tools, and equipment
- Remove and bag large debris
- Power wash all structural steel members, drainage systems, joints, bearing devices, end bents/abutments, and pier caps as specified in the notes and detailed drawings
- Coating rusted steel members
- Remove stratified rust and apply lubricant
- Apply concrete sealant to end bents/abutments and pier caps as specified in notes and detailed drawings
All debris collected shall be disposed of in a suitable off-site location.
Power Washing

• Water pressure of 1,000psi (+/- 200psi)
• Minimum flow rate of 3.5 gal/minute
• Pressure washing wands must be equipped with a gauge to accurately measure pressure
• Wash all exposed steel within 10ft of any joint
• Wash all lower chord members, end posts, verticals, and diagonal members up to 10ft above the lower chord in through truss spans
• See detailed drawings for locations of specified work for each structure
(D) Groundwater and Surface water Protection
The contractor shall prepare and implement a groundwater and surface water protection plan in accordance with 401 KAR 5:037 (Ground Water), KRS 224.70-110 and 401 KAR 10:031 (Surface water) with the exception that hazardous waste or hazardous materials container volume is not limited to greater than 55 gallons or weight to 100 pounds.
**BRIDGE PLAN**

* 4' - 0" - Remove all stratified and pack rust and coat rusted steel members in this limit.
* 10' - 0" - Presserwash all structural steel in this limit.

○ Indicates bearings to be greased, 16 total.

Remove Debris, Pressure Wash and apply concrete sealant at all substructure units.

Seeacial Note for Bridge Cleaning and Preventive Maintenance.
Stratified and/or Pack Rust Removal

• All stratified rust is removed within 4 feet longitudinally of a joint
• Rust shall be removed using wire brushes, scrapers, and impact devices (hand held hammers, power chisels)
• Steel members shall be cleaned to an SSPC SP-2 level
Applying Lubricant to Bearing Devices

• After power washing the bearing devices
• Allow bearing devices to dry before applying lubricant
• Lubricant must be applied within 48 hours of completing the washing.
Mobil Premium Lubricating Grease

Premalube™
Multi Purpose, Heavy Load, Extreme Pressure, High Temperature Grease
NLGI 2, 1, 0, 00

Heavy duty aluminum complex grease specifically formulated for construction and heavy industrial equipment.
Provides superior protection for equipment against heavy loads, dirt, dust, water and heat.

PRODUCT OF CHOICE FOR ALMOST EVERY HEAVY DUTY APPLICATION

Provides Superior Equipment Protection for:
- Industrial Manufacturing
- Construction, Mining, Agriculture
- Transportation & Distribution
- Food Processing
- General Industry & Maintenance
- Textile & Printing
- Rubber, Tire & Agricultural

Premalube Meet or Exceeds Major Performance Requirements:
- AMS 3560C
- MIL-L-2105C
- MIL-L-2105
- Military Standard 2105C
- NSF H1 Non-Toxic Food Grade
- NSF H1 Non-Toxic Food Grade

Premalube
www.mobil.com
Coating Rusted Steel Members

• After removing debris, rust, and power washing

• Apply protective coating to the rusted areas of the structural steel within 4 ft of a joint.

• Coating used is Rhomar’s Black-Max or equivalent
Beam ends and abutment after cleaning and application of black-max and grease (Never-Seez)
Pic of the black-max and grease application
Concrete Sealing

• Use compressed air to remove any loose debris after power washing
• All abutments/end bent caps, pedestals, back walls, and pier caps shall be sealed
• Allow surfaces 24 hours minimum to dry before applying sealant
• Apply sealer to abutment/end bent caps, pier caps, and horizontal surfaces including pedestals and vertical surfaces 3 ft below the top of cap or ground line whichever is the least
• Sealant must be applied within 72 hours of pressure washing
• Sealant to be used shall be Belzona’s 5122 Clear Cladding
Example application of Clear Cladding concrete sealer
Questions