MINUTES:

When: Wednesday, September 5, 2018 12:00 – 1:00 PM (Mountain Time)

Where: Web-conference

I. There were 23 attendees to the WBPP regional web meeting. Attendees included:
   Troy Martin – Nevada, NDOT
   Chris Hardan – Montana, MDOT
   Mike Collins – Colorado, CDOT
   Becky Nix – Utah, UDOT
   Eric Buell – Utah, UDOT
   Cody Parker – Utah, UDOT
   Travis Jones – Utah, UDOT
   Thad Pinkerton – Utah, UDOT
   Benoit Cordoba – Wyoming, WYDOT
   Kathy Chomas – NCPP
   Chris Long – FHWA
   Ed Welch – NCPP
   Gregg Freeman – Kwik Bond Polymers
   Zac Haber – FHWA
   Chris Higgins – Oregon State University
   David Hoyne – GPI
   John Hooks – NCPP
   Marc Maguire – Utah State University
   Mitzi McIntyre – CTS Cement
   Nick Fabritiis – Elzly Technology
   Tim Woolery – Advanced Chemicals Technologies, Inc.
   Scott Choate – Agile Assets
   Raj Ailaney – FHWA
   Debbie Lehmann – FHWA
   John Bunderson – Metal Fatigue Solutions
   Shane Boone - BDI

II. Welcome/Introductions

   Chair - Becky Nix ran the meeting. She welcomed everyone to the meeting and conducted a roll call.

III. Working Group Updates

Local Agency Outreach – Gregg Freeman provided the update for the Local Agency Outreach working group. Brandon Henning and Gregg Freeman are working on the bridge preservation training module. They are looking for pictures of bridge preservation activity photos.

How do we bring the local agencies in as partners and how would the cost structure work? This is an overarching issue for bridge preservation, pavement preservation, and equipment partnerships that TSP2 and AASHTO need to work together to address.

Deck Patch Matrix – Nothing was reported.

Bridge Deck Chloride Testing – Chris Long provided the update for the Bridge Deck Chloride Testing working group. A skeleton of the chloride testing guidance paper has been created and members of the working group are actively filling in the draft. A draft document for review is anticipated to be available in November. Contact Travis Kinney if you would like to be involved with this working group.

IV. Technical Topic

Structural Pothole Patching Preparation – Eric Buell and Thad Pinkerton, UDOT

Eric Buell brought up several concerns that Utah is trying to address in regards to structural pothole patching, including patch preparation, reinforcing coating, and sacrificial anodes. Utah currently shotblasts and exposed reinforcing to remove corrosion then pressure washes the substrate. If bars are exposed, material is removed ½" below the bars. They do not recoat the bars because the patch materials are generally not very effective and the spray on coatings could get on the underlying concrete and create a bond breaker. There are concerns that having portions of missing epoxy coating could accelerate corrosion at localized locations. Gregg Freeman noted that if there are areas that the epoxy is damaged it will act like an concentrated anode, so rather than recoating the bar it would be more effective to add sacrificial anodes into the patch. It would have to be verified that the patch material has a low enough permeability to work with the sacrificial anode.

Chris Hardan stated that Montana has not seen a the need for pothole patching on bridges reinforced with epoxy coated bars yet, so they do not have a policy for addressing epoxy coating during repairs yet.

Mike Collins noted that Colorado uses sacrificial anodes in almost all large repair areas. They use two patching materials – a low permeability material for around the anode, then standard patching material for the remainder of the repair.

Benoit Cordoba stated that Wyoming has not used much epoxy coated rebar until the last 10 years, so they have not seen the need for repairs yet and have not developed a policy for addressing it. He noted that in Wyoming it is standard policy to remove ¾" below exposed reinforcing when patching.

Raj Ailaney noted that page 6 of the Bridge Preservation Guide (https://www.fhwa.dot.gov/bridge/preservation/guide/guide.pdf) discusses the halo effect in regards to structural pothole patching. Gregg Freeman noted that ICRI has good guidance on cementitious patches.

Raj Ailaney asked if chloride testing was done systematically, or how it was determined when it would be done. Montana, Colorado, and Utah test chlorides when a hydrodemolition is proposed for a bridge deck, but not systematically or for standard pothole patching projects.

Tim Woolery stated that Missouri is spraying a corrosion inhibiting silane into potholes prior to patching in order to eliminate rebar corrosion and the halo effect. Tim sent the material data sheet and testing results for one such silane product (attached).

Lefarge has recently developed a rapid set UHPC bag mix patching material. It is highly impermeable so bars are protected. Cure time to open traffic is 4 to 5 hours. They have completed one pilot project with the material at this time. Working time is only about 20 minutes, so it can be difficult to use for larger patch areas.

V. New Items

None.

VI. Administrative Items

2019 Annual WBPP Meeting – Theme – Extending Service Life of Bridges. Consider having report out from working groups in the other partnerships to share the knowledge. Three main topics were selected – Technology benefits, rehabilitation and retrofit vs. replacement, and innovative materials and methods. Consider having the peer exchanges again this year. Topic survey will be sent out to a larger group to try to get more responses. Call for presentations will be sent out. Looking into cost of transportation to a technical tour. Everyone seemed to think this would be a good idea if we can work out the logistics.

2020 American Society for Nondestrucive Testing (ASNT) Conference – ASNT holds a conference on nondestructive testing every two years showcasing new NDT technology. Shane Boone presented the idea of trying to hold the 2020 WBPP meeting in the same location and the same week as the 2020 ASNT conference to hopefully encourage more

participation in the ASNT conference. There may be some FHWA funding available for travel to the ASNT conference. The partnership will consider this, but it would require a lot of planning and coordination.

SIL-ACT® Product Data
SIL-COR™

ADVANCED CHEMICAL TECHNOLOGIES, Inc.

"Protecting the World's Infrastructure"

DESCRIPTION

SIL-ACT® SIL-COR™ is a dual organofunctional surface applied corrosion inhibitor and penetrating sealer. The combination of the proven technologies provides a deep hydrophobic layer of protection to the concrete and anti-corrosion protection to the reinforcing steel.

USES

SIL-ACT® SIL-COR™ is designed to be applied to concrete surfaces. It is recommended for all steel-reinforced, prestressed, precast and post tentioned concretes.

- Bridges and highways
- Parking garages
- Piers, piles and concrete dock structures
- Seawalls

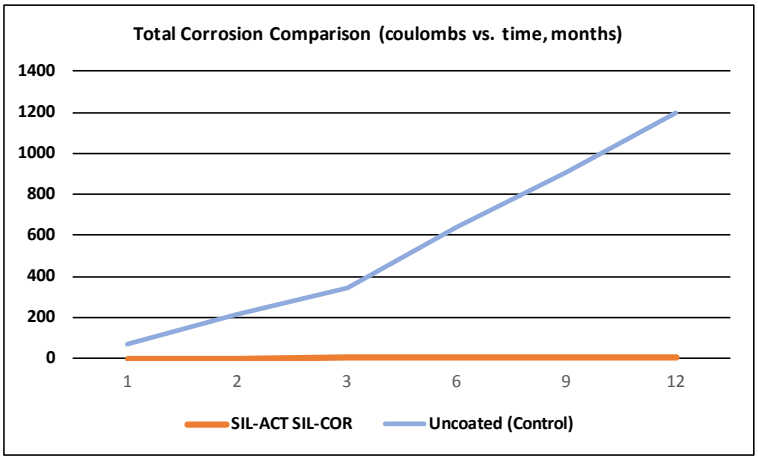
ADVANTAGES

- Deep hydrophobic layer of protection
- Excellent resistance to water intrusion
- Proven anti-corrosion additive for steel reinforcement
- Easy to apply
- VOC compliant
- Maintains vapor permeability of concrete
- Excellent resistance to chloride ion ingress
- Reduces micro cell and macro cell corrosion
- Ready to use
- Fast dry

PERFORMANCE DATA

FHWA-HRT-07-043 ASTM G109 - cracked beam testing resulted in SIL-ACT® SIL-COR™ <1% of visible corrosion showing on the top rebar after 12 months of testing while the uncoated specimens resulted in 67% visible corrosion showing on the top rebar after 12 months of testing.

G109 Cracked Beam		
Corrosion Test Results		
Average Corrosion Results (after 12 Month Testing):		
	Control	**SIL-ACT SIL-COR**
Total Corrosion (coulombs)	1,197.0 C	2.8 C
Chloride content at top bar (%)	0.115%	0.051%
Area of top bar corrosion (%)	67%	<1%
Individual Corrosion Results (after 12 Month Testing):		
SIL-ACT SIL-COR (A1)	<1% corrosion visible on top bar	
SIL-ACT SIL-COR (A2)	<1% corrosion visible on top bar	
SIL-ACT SIL-COR (A3)	<1% corrosion visible on top bar	
Uncoated Control (X1)	50% corrosion visible on top bar	
Uncoated Control (X2)	60% corrosion visible on top bar	
Uncoated Control (X3)	90% corrosion visible on top bar	



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version 001

TECHNICAL DATA

PROPERTY	TEST	SIL-COR™
Active Ingredients		Alkyltrialkoxysilane Migrating Corrosion Inhibitor
Specific Gravity		0.92
Density		7.68 lb/gal
Appearance		Clear
Surface Appearance after Application		Unchanged
Drying time at 70°F		30 minutes
VOC Content	Method 24, ASTM D-5095	< 400 g/L
Absorption Reduction	ASTM C-642	93% @ 48 hours
Chloride Reduction	AASHTO T259/T260	90.6% @ 0.5 in. 87.7% @ 1.0 in.
Scaling	ASTM C-672	0 @ 50 cycles
Chloride Reduction	NCHRP 244 Series II	91.6% @ 5 days air dry
Water Absorption	NCHRP 244 Series II	90.5% @ 5 days air dry
Chloride Reduction	NCHRP 244 Series IV	90%
Cracked Beam	FHWA HRT-07-043	<1% - 12 months

INSTRUCTIONS

1. Test a small area prior to general application to ensure compatibility, desired results and coverage rates.
2. Treatment is most effective when the surface to be treated is clean and dry. Remove dirt, dust, oil, grease, curing compounds, coatings and other surface contaminants. Water blasting, sandblasting or shotblasting may be required.
3. Do not proceed unless surface and air temperature is between 20°F and 100°F. Do not apply on wet concrete or if rain is expected within 5 hours after application. Allow concrete to dry between 24 and 72 hours after rain or cleaning with water. Do not apply if frost, ice, or standing water are visible on the surface to be treated.
4. Spray, brush or roll SIL-ACT® SIL-COR™ treatment on surface to be treated at the recommended application rate. Multiple coats are recommended. Most applications require two to three coats at 125 to 250 square feet per gallon. Allow a minimum of 15 minutes between coats (or until visibly dry). Contact your Advanced Chemical Technologies representative for spray equipment options.
5. Apply to saturation. When spraying at low pressure, if necessary follow with broom or squeegee for even distribution.
6. Avoid unnecessary overspray. If necessary, clean overspray areas with a clean dry cloth, soap and water or alcohol. Protect plants and vegetation from overspray. Prior to SIL-ACT® SIL-COR™ application, check for preexisting contamination.
7. Clean equipment with SIL-ACT® Equipment Cleaner .
8. Partially used containers should be properly sealed and protected from contamination by water or other foreign substances.

WARRANTY

Limited warranties are available for all SIL-ACT® products. Contact ACT or your local SIL-ACT® representative for details.