



Bridge Repair, Rehab and Maintenance

Dana Larsen, Ward County, ND





Split, Pile 3 and 4 of the east abutment, only bearing approximately 20%



Split, Piles 1 and 2 of the east abutment only bearing approximately 20%

Repair Pile Cap



Repair Pile Cap

Repair Pile Cap





Rotted Piling at Waterline



Rotted Piling Repair





Rotted Piling Repair



Piling Repair 2021 vs 2026



Replace Pilling with C Channel



Replace Piling with C Channel



Replace Piling with C Channel



Replace Pilling with C Channel



Deck Replacement



Deck Replacement



Deck Replacement



Deck Replacement



Deck Replacement



Deck Replacement



Deck Replacement



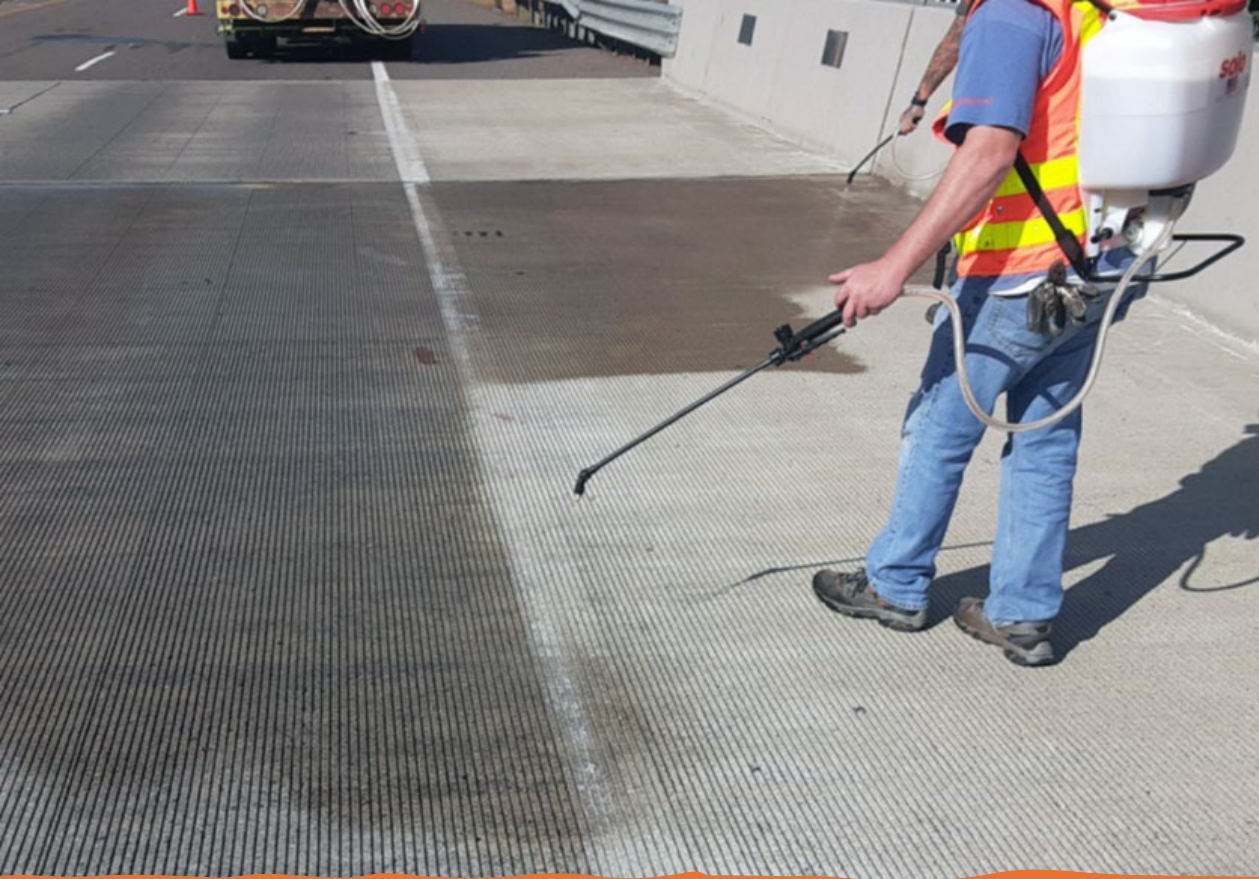
Deck Replacement



Waterproofing Agent
Sodium Silicate



Flooding Cracks



**Waterproofing
Agent**
Sodium Silicate

Midwest Bridge Preservation Partnership Training, Videos, and Pocket Guides



RESEARCH ▼ TECHNICAL ▼ LEGISLATIVE TRAINING INDUSTRY ▼ WORKING GROUPS ▼

POCKET GUIDES

POCKET GUIDE A User's Guide to Concrete Bridge Deck Silane Sealer Application
POCKET GUIDE A User's Guide to Concrete Deck Sealing using HMWM/MMA
POCKET GUIDE A User's Guide to Polyester Polymer Concrete Bridge Deck Overlays
POCKET GUIDE A User's Guide to Latex Modified Concrete Bridge Deck Overlays
POCKET GUIDE A User's Guide to Low Slump Concrete Bridge Deck Overlays
POCKET GUIDE A User's Guide to Supplemental Cementitious Material Concrete Bridge Deck Overlays
POCKET GUIDE A User's Guide to Ultra-High Performance Concrete Bridge Deck Overlays
POCKET GUIDE A User's Guide to Maintenance and Repair of Bridge Bearings
POCKET GUIDE A User's Guide to Removal and Replacement of Bridge Coatings
POCKET GUIDE A User's Guide to Bridge Cleaning
POCKET GUIDE A User's Guide to Thin-Polymer Bridge Deck Overlay System
POCKET GUIDE A User's Guide to Concrete Bridge Deck Patching
POCKET GUIDE A User's Guide to Spot, Zone, and Overcoating Existing Bridge Coatings
POCKET GUIDE A User's Guide to Repair of Bridge Concrete Substructure Elements

POCKET GUIDE A User's Guide to Concrete Bridge Deck Silane Sealer Application

POCKET GUIDE A User's Guide to Concrete Bridge Deck Silane Sealer Application

This guide describes the installation of silane sealer for penetrating and sealing porosity in cement concrete bridge decks. As a penetrating sealant, treating the concrete deck with silane prevents the ingress of moisture and chlorides into the concrete, which is one of the leading causes of reinforcing steel corrosion and deck deterioration. Additionally, penetrating sealers dry quickly, so are beneficial for reopening a bridge to traffic in a timely manner.

[Download A User's Guide to Concrete Bridge Deck Silane Sealer Application \(.pdf\)](#)



<https://ncppbridgepreservation.org/midwest-mwbpp/>

facility and speed of traffic, the cleaning process and associated access requirements will directly influence the Maintenance and Protection of Traffic plan. In addition to the protection of workers and the travelling public, the traffic control measures may need to account for



A User's Guide to **BRIDGE CLEANING**



A User's Guide to
BRIDGE CLEANING

A User's Guide to Concrete Bridge Deck Silane Sealer Application

A User's Guide to
Concrete Bridge Deck Silane Sealer Application

Concrete Bridge Deck Penetrating Silane Treatment

1 Prepare Deck Surface



- Remove all dirt, dust, oil, grease, curing compounds
- Surface must be dry before application

2 Check Environmental Conditions



- Air temp, Surface temp, Material temp 40°F-85°F
- Wait 48 hr after rain before applying surface sealer
- Avoid wind $\geq$ 15 mph
- Air temp should be at least 5° $\geq$ Dew point
- Relative humidity should be $<$ 80%

3 Apply Silane Treatment



- Apply uniformly using low-pressure spray
- Use specified coverage rate
- Saturate but avoid puddling

4 Allow Surface to Dry



- Allow cure time ~ 2-5 hr. at 70°F

Source: Microsoft 365 Copilot AI

When: 9:00-10:00 AM (PDT) October 27, 2026

GoToMeeting Link: [REGISTER HERE](#)

Cost: FREE

Bridge preservation activities are “practices that we can’t afford not to do now.”



**NATIONAL BRIDGE
PRESERVATION LOCAL
AGENCY OUTREACH
WORKING GROUP**



The Bridge Preservation Partnership Local Agency program is pleased to announce a **Training Opportunity on Planning for Success**. The 60-minute training is specifically designed to teach the basics and benefits of developing proactive asset management strategies for your local agency bridge inventory.

The training will run through the common strategies to lengthen serviceability of your network and effectively plan for more costly repairs. This includes the development of various “mix of fixes” strategies that target cyclic maintenance, preventive maintenance and rehabilitation to reduce deterioration rates.

This virtual training is being offered **free of charge**. Participants will gain a general understanding of the benefits of planning for success, how to develop a strategy that fits your network, and how to define and measure the success of your plan.



Figure 18. Steps for establishing a bridge preservation program.

**Establishing a Preservation
Program**

