

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

LATEX-MODIFIED CONCRETE (LMC) OVERLAY AND CONCRETE OVERLAY (CO) NOTES:

Perform work in accordance with Item 439, "Bridge Deck Overlays" and instructions below.

- *1. Plane asphalt from bridge deck per Item 354, "Planing and Texturing Pavement." The thickness of the existing ACP is approximately __ inch.
- 2. Prepare concrete deck surface for overlay installation. See SURFACE PREPARATION NOTES.
- 3. Water blast surface and any exposed steel with minimum 5,000 psi blast to remove all dirt, loose rust, and other contaminants and then use dry compressed air until the surface is cleared of debris. Perform pressure blasting no earlier than 24 hours before placing the overlay.
- 4. Cover the surface with wet cotton mats or wet burlap and opaque/white plastic sheets, and keep saturated for a minimum of 8 hours before placement of overlay.
- 5. Immediately before placing concrete, remove cover and blow off any standing water. Maintain saturated surface dry (SSD) condition on deck to receive overlay.
- 6. Mask existing joints and deck drains. Saw cutting of joints after overlay installation is prohibited.
- 7. Adjust the screed and screed rail as necessary to provide the approved grade and required thickness. Adjustments should be made during the screed dry run. Correct any areas with insufficient clearance by adjusting the screed and rail system or by chipping or scarifying as approved by the Engineer. Clean areas where removal occurs by pressure washing with a minimum of 5,000 psi.
- 8. Verify that ambient temperature, wind speed, and relative humidity are within the limits specified by the Engineer. Wind screens and fog spray may be submitted as part of the placement plan to minimize evaporation.
- 9. Place __ inch overlay. Consolidate concrete around joints with a pencil vibrator. Use an internal vibrator for areas with 3" depth or greater in advance of the screed.
- 10. Meet the straightedge and finishing requirements specified in Section 422.4.7, "Finish and Interim Curing of Bridge Slabs" for finishing the concrete overlay.
- 11. Cure as required by Item 439, "Bridge Deck Overlays." See CURING NOTES.
- 12. The Contractor is responsible for the ride quality of the finished surface. See Article 422.4.10, "Defective Work," for acceptance criteria to be enforced for this work.
- *13. Groove surface in accordance with Article 422.4.11 "Final Surface Texture."
- 14. Install pavement markings as shown on plans.
- **15. Seal all the expansion joints. See elsewhere in plans for joint details.

CONCRETE MILLING/MICRO MILLING NOTES:

Perform this work in accordance with Item 483, "Concrete Bridge Deck Surfacing" and instructions below.

- 1. Contractor is responsible for identifying depth of reinforcing steel to ensure that there is no damage to the existing reinforcing through the removal process. Depth of milling/micro-milling must not exceed 1" or the depth to the top of top mat of reinforcement steel, whichever is less. Determine clear cover to top reinforcement prior to beginning milling/micro-milling operations. Stop the operations if reinforcing steel is encountered. Proceed with further milling/micro-milling only when approved by the Engineer.
 - 2. Stop milling/micro-milling operations a minimum of 12" from all expansion joints. Remove concrete between end of milling/micro-milling operations and expansion joint using hydro-demolition or chipping hammers not heavier than a nominal 15 lb. Do not damage armor plates or studs of the expansion joints. Repair damage to joint system resulting from concrete removal operations at the Contractor's expense.
 - 3. For micro-milling operation, provide drum with tool spacing up to 1/4". Do not allow travel speed in feet per minute to exceed 2/3 of the drum RPM. Micro-milling should only be used when existing ACP is to be removed and the final riding surface will be a Multi-layer Polymer Overlay or deck sealer.
- HYDRO-DEMOLITION NOTES:**
- Perform work in accordance with Item 483, "Concrete Bridge Deck Surfacing" and instructions below.
- 1. Submit a water disposal plan associated with the work for approval. Protect surrounding property and traffic from water spray and material that is dislodged. Provide water for hydro-demolition that meets the requirements of Article 421.2.5, Table 1. Additional cost for disposal of contaminated water is subsidiary to the hydro-demolition.
 - 2. Provide remotely operated vacuum unit to reclaim water, debris and concrete cuttings. Collect water, debris and concrete cuttings in a separate unit located off of the bridge deck. Do not allow loaded reclamation units on bridge deck after hydro-demolition has occurred without a structural analysis signed and sealed by a licensed professional engineer. All equipment on bridge deck must be in accordance with Articles 7.16.2 and 7.16.3.
 - 3. Block all inlets during hydro-demolition and overlay operations. Do not perform hydro-demolition work over open roadways or sidewalks. Do not permit any vehicular or pedestrian traffic below the bridge deck during hydro-demolition activities.
 - 4. Provide a combination of milling and hydro-demolition sufficient to provide for a __" (nominal) inlay. At a minimum, hydro-demolition will be no less than 3/4" in unless otherwise shown in the plans.
 - 5. Demonstrate hydro-demolition on test areas as designated to calibrate machine to obtain concrete removal depth and finish as specified and as approved.
 - 6. Ensure all unsound concrete is being removed after hydro-demolition. Additional chipping (with chipping hammer) or hydro-demolition may be required to remove remaining delaminated areas. Do not damage reinforcing steel. If bond between steel and concrete is destroyed, remove concrete (15 lb max chipping hammer) to expose bar and provide a clearance of not less than 3/4".

*****SURFACE PREPARATION NOTES:**

Concrete removal and surface preparation beyond cleaning utilizing air, water, and abrasive blasting will be paid for in accordance with Item 483, "Concrete Bridge Deck Surfacing."

ALTERNATIVE 1: SHOT BLASTING

- 1. Inspect the bridge deck for any potential deck repairs or delaminated concrete. Perform partial and/or full depth bridge deck repairs in accordance with Item 429, "Concrete Structure Repair" and Chapter 3, Section 4 of TxDOT Concrete Repair Manual. Cure repairs in accordance with Manufacturer's recommendations followed by shot blasting before placing overlay, unless approved otherwise. Partial depth deck repairs can occur concurrently with overlay operation with the Engineer's approval. This work will be paid for in accordance with Item 429, "Concrete Structure Repair."
- 2. Prepare the deck surface by shot blasting and cleaning with high pressure air. Achieve ICRI CSP 5 surface profile. Remove all oil and other contaminants.

ALTERNATIVE 2: MILLING AND HYDRO-DEMOLITION

- 1. Mill concrete deck to remove __" of deck surface. See CONCRETE MILLING/MICRO-MILLING NOTES. This work will be subsidiary to hydro-demolition.
- 2. Perform hydro-demolition on bridge deck to remove __" of deck concrete. See HYDRO-DEMOLITION NOTES.

CURING NOTES:

CONCRETE OVERLAY (CO) CURING NOTES:

- 1. Apply wet burlap to cure the overlay as soon as possible after the concrete has been textured. Keep the burlap continuously wet for 4 days. Cover burlap with opaque or white polyethylene sheeting for duration of wet cure period.
- 2. Water cure the overlay in accordance with Article 422.4.8, "Final Curing," for an additional 4 days. Maintain the surface temperature of the concrete above 40°F for the required curing period.
- 3. Do not open to traffic until overlay concrete has reached a minimum f'c of 4,000 psi.

LATEX-MODIFIED CONCRETE (LMC) OVERLAY CURING NOTES:

- 1. Apply wet burlap to cure the overlay as soon as possible after the concrete has been textured. Keep the burlap continuously wet for 48 hours. Cover burlap with opaque or white polyethylene sheeting for duration of wet cure period.
- 2. Remove sheeting and burlap following wet cure period and allow surface to air cure for an additional 48 hours before opening to traffic.

NOTE TO DESIGNER:

These sheets are to be used as a guide for preparing plans for bridge deck overlays. They include installation procedures for several different overlay types. Details with appropriate notes from this guide should be prepared for the specific application. These sheets cannot be used without modification and in all cases notes not required must be removed. This note and the phrase "Not to be used as a standard" must be removed and the sheet must be signed and sealed by a Professional Engineer.

CONCRETE OVERLAY (CO) AND LATEX-MODIFIED CONCRETE (LMC) OVERLAY:

Application:
These products can provide structural value with or without added reinforcing steel or steel fibers. CO and LMC can restore integrity of the bridge deck, improve ride, skid values and provide additional cover to reinforcing steel which will delay chloride penetration. These materials can be installed in thicknesses ranging from minimum 1-1/4" for LMC and 1-1/2" for CO to maximum 3" for both. CO and LMC can spall along longitudinal construction joints within wheel paths and at acute corners. Care should be taken when developing details to clearly indicate that a longitudinal phase/construction joint does not occur along a wheel path. Details should also incorporate a breakback to avoid acute corners at skew angles over 15 degrees.

Anticipated Service Life:
CO and LMC can provide 20+ years of service with proper installation.

POLYESTER POLYMER CONCRETE (PPC) OVERLAY:

Application:
This product does not add structural value but can provide additional wearing surface and improve skid, improve ride, seal cracks, and delay chloride penetration. This material can be installed in thicknesses ranging from minimum 3/4" to maximum 3". Special Specification 4106 is a one-time use special specification and its use will need to be requested on a project by project basis.

Anticipated Service Life:
PPC overlays have an estimated 20 - 30 year service life with proper installation.

MULTI-LAYER POLYMER OVERLAY (MLPO):

Application:
This product does not provide a structural benefit. However, it can seal extensive deck cracking, improve skid values and delay chloride penetration. The thickness of this material is approximately 3/8".

Anticipated Service Life:
MLPO is estimated to have a 15 year service life with proper installation.

* Remove the step if it does not apply.

** Details from Working Drawing "CLEANING AND SEALING EXISTING BRIDGE JOINTS" (WD-CSBJ-24) can be used.

*** These instructions are applicable to both Concrete Overlay (CO) and Latex-Modified Concrete (LMC) Overlay. Designer to specify which surface preparation alternative to be used.

SHEET 1 OF 2

Texas Department of Transportation				Bridge Division	
<h2 style="margin: 0;">BRIDGE DECK OVERLAY NOTES</h2> <p style="margin: 5px 0 0 0;">(Not to be used as a standard)</p> <p style="margin: 0 0 0 0;">NBI: XX-XXX-XXXX-XX-XXX</p>					
FILE: WD-BDON-24.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT	
©TxDOT February 2024		CONT	SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY		SHEET NO.

P.E. SEAL REQUIRED
PRELIMINARY
 SUBJECT TO REVISION
This document is released for informational purposes under the authority of XXXX XXXX P.E. XXXXX on XX/XX/XX. It is not to be used for regulatory approval, permit, bidding, or construction purposes.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

POLYESTER POLYMER CONCRETE (PPC) OVERLAY NOTES:

Perform work in accordance with Special Specification 4106 and below instructions. A technical representative of the overlay manufacturer should be present at the pre-construction meeting and execution of all work associated with the overlay installation.

- *1. Plane asphalt from bridge deck per Item 354, "Planing and Texturing Pavement." The thickness of the existing ACP is approximately __ inch.
- 2. Inspect the bridge deck for any potential deck repairs or delaminated concrete. Perform partial and/or full depth bridge deck repairs in accordance with Item 429, "Concrete Structure Repair" and Chapter 3, Section 4 of TxDOT Concrete Repair Manual. Cure repairs in accordance with Manufacturer's recommendations unless approved otherwise. This work will be paid for in accordance with Item 429, "Concrete Structure Repair."
- 3. Prepare the deck surface by shot blasting and cleaning with high pressure air. Remove all oil and other contaminants. This work is subsidiary to Special Specification 4106.
- 4. Mask existing joints and deck drains. Saw cutting of joints after overlay installation is prohibited.
- 5. Identify moisture in the deck per ASTM D4263 or other approved methods. Do not begin the overlay installation until the deck is properly dry.
- 6. Conduct one or more trial applications on the prepared substrate to demonstrate proper initial set time and the effectiveness of the surface preparation, mixing, placing, and finishing equipment proposed.
- 7. Perform bond strength test 24 hours after placement of the trial application in accordance with ASTM C 1583. Do not proceed with overlay installation until the minimum bond strength is achieved and approved by the Engineer.
- 8. Install __ inch Polyester Polymer Concrete Overlay per Special Specification 4106.
- 9. The Contractor is responsible for the ride quality of the finished surface. See Article 422.4.10, "Defective Work" for acceptance criteria to be enforced for this work.
- *10. Groove surface in accordance with Article 422.4.11 "Final Surface Texture."
- 11. Install pavement markings as shown on plans.
- **12. Seal all the expansion joints. See elsewhere in plans for joint details.

MULTI-LAYER POLYMER OVERLAY (MLPO) NOTES:

Perform work in accordance with Item 439, "Bridge Deck Overlays" and below instructions. A technical representative of the overlay manufacturer should be present at the pre-construction meeting and execution of all work associated with the overlay installation.

- *1. Plane asphalt from bridge deck per Item 354, "Planing and Texturing Pavement." The thickness of the existing ACP is approximately __ inch.
- 2. Inspect the bridge deck for any potential deck repairs or delaminated concrete. Perform partial and/or full depth bridge deck repairs in accordance with Item 429, "Concrete Structure Repair" and Chapter 3, Section 4 of TxDOT Concrete Repair Manual. Repair materials must be compatible with MLPO system. Cure repairs in accordance with Manufacturer's recommendations unless approved otherwise. Test moisture content in concrete repairs to ensure it conforms to Manufacturer's requirements. This work will be paid for in accordance with Item 429, "Concrete Structure Repair."
- 3. Prepare the deck surface by shot blasting and cleaning with high pressure air. Remove all oil and other contaminants.
- 4. Mask existing joints and deck drains.
- 5. Identify moisture in the deck per ASTM D4263 or other approved methods. Do not begin the overlay installation until the deck is properly dry.
- 6. Install Multi-layer Polymer Overlay per Item 439, "Bridge Deck Overlays".
- 7. Install pavement markings as shown on plans after the overlay is cured.
- **8. Seal all the expansion joints. See elsewhere in plans for joint details.

* Remove the step if does not apply.

** Details from working drawing "CLEANING AND SEALING EXISTING BRIDGE JOINTS" (WD-CSBJ-24) can be used.

SHEET 2 OF 2



BRIDGE DECK OVERLAY NOTES

(Not to be used as a standard)
NBI: XX-XXX-XXXX-XX-XXX

P.E. SEAL
REQUIRED
PRELIMINARY
SUBJECT TO REVISION

This document is released for informational purposes under the authority of XXX XXX
 P.E. XXXXX on XX/XX/XX.
 It is not to be used for regulatory approval, permit, bidding, or construction purposes.

FILE: WD-BDON-24.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2024	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.