



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 21-21

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TO: All Design, Operations, and District Personnel, and Consultants

FROM: /s/ Stephanie Wagner
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SUBJECT: Bridge Preventive Maintenance Criteria

REVISES: *Indiana Design Manual (IDM) Figure 412-1A*

EFFECTIVE: Start Plan Development Date on or after November 2, 2021

IDM Figure 412-1A, Condition-Driven Preventative Maintenance Eligibility Criteria, has been updated to allow the use of structural steel repair treatment type. Footnote 6 was added to outline the allowable structural steel repair work. The list of approved repairs includes repairs to address pack rust or corrosion in splice/connection plates, cover plate retrofits, fatigue crack mitigation, or to repair cracked welds with bolted connections. The footnote also requires support calculations to be included for these repair items

For questions related to this design memo, please contact the Bridge Engineering Division at BridgeDesignOffice@indot.in.gov.

Figure

Treatments Type	Bridge Component (Item Code)	Component Rating	Other Criteria ²
Bridge Culvert Liners	Culverts (62)	2-5	N/A ³
Deck Patching (partial/full depth)	Wearing Surface (58.01)	>4	D/SS >4 and Max. 10% Deck Patching
Approach Slab Repair/Replacement	Approach Slab (Misc. Asset Data) or Concrete approach slab Elements	<6, or >10% Element Level in CS2 or any % in CS3	WS/D/SS>4
Expansion Joint Repair/Replacement/ Elimination	Transverse Joints (Misc. Asset Data - Joints) or Joint Elements	<6, or >10% Element Level in CS2 or any % in CS3	WS/D/SS>4
Mudwall Patching	Substructure Backwall (60)	<6, or >10% Element Level in CS2 or any % in CS3	WS/D/SS>4
Bridge Deck Overlays - Flexible	Wearing Surface (58.01)	>4	D/SS>4 and Max. 10% Deck Patching
Bridge Deck Overlays - Rigid	Wearing Surface (58.01)	>3	D/SS>4 and Max. 15% Deck Patching
Spot Coating/Bridge Painting	Condition of Paint (Misc. Asset Data – Paint Condition Steel Superstructure Corrosion Elements, and/or Steel Bearing Corrosion Elements)	<7 ⁴ or >10% Element Level in CS2 or any % in CS3	WS/D/SS>4
Substructure/Pile Patching/Sealing/Fiber Wrap	Substructure (60)	N/A	WS/D/SS>4
Superstructure Crack Mitigation Superstructure Patching / Fiber Wrap Structural Steel Repair ⁶	Superstructure (59)	N/A	WS/D/SS>4
Erosion Mitigation	Channel and Channel Protection (61)	<6	WS/D/SS>4
Debris Removal/Channel Cleaning	Channel and Channel Protection (61)	<6	WS/D/SS>4
Slopedwall Repair/Replacement	Misc. Asset Data - Slopedwall	<6	WS/D/SS>4
Bearing Repair/Replacement	Bearings (Misc. Asset Data), or Bearing Element Items	<6, or any % Element Level in CS2 or CS3	WS/D/SS>4

**CONDITION-DRIVEN PREVENTIVE MAINTENANCE
ELIGIBILITY CRITERIA
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Treatments Type	Bridge Component (Item Code)	Component Rating	Other Criteria ²
Scour Mitigation	NBI Scour Evaluation Code (113)	2-4	Not Programmed for Bridge Replacement
Deck Crack Sealing	Wearing Surface (58.01)	>5	D/SS>5
Brush Cutting/Herbicide Application ¹	Deficiency Noted	N/A	WS/D/SS>4
Railing Repair ¹	Deficiency Noted	N/A	WS/D/SS>4
Relief/Terminal Joint Repair ¹	Deficiency Noted	N/A	WS/D/SS>4
Upgrading End Treatments, Guardrail, Railing, Attenuators ^{1, 4}	N/A	N/A	WS/D/SS>4
Adding Reinforced Concrete Deck to an Adjacent Box Beam Bridge without a Deck ⁵	Superstructure (59) and Substructure (60)	(59) >5 (60) >4	N/A

CS = Condition State

¹ Items may only be included in a project incorporating other preventive maintenance treatments

² WS = Wearing Surface (58.01); D = Deck (58); SS = Superstructure (59) and Substructure (60)

³ Treatments should raise the condition of the rating to 5 or higher

⁴ When found to be cost-effective

⁵ Treatment is applicable to LPA bridges only. The minimum allowable deck thickness is 5 in.

⁶ Approved work includes repairs to address pack rust or corrosion in splice/connection plates, cover plate retrofits, fatigue crack mitigation, or to repair cracked welds with bolted connections. Structural steel repairs shall be based on supporting computations.

CONDITION-DRIVEN PREVENTIVE MAINTENANCE ELIGIBILITY CRITERIA

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