



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 20-15

September 10, 2020

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

FROM: /s/ Elizabeth P. Mouser
Elizabeth P. Mouser
Highway Design Director
Engineering Department

SUBJECT: Pavement Project Categories

REVISES: *Indiana Design Manual* Sections 602-1.0, 602-1.03(08), 602-1.04(02), 602-1.04(08), 602-1.04(09), Figures 602-1B and 602-1C

EFFECTIVE: Immediately

After a review of the pavement project categories in IDM Chapter 602, Concrete Pavement Restoration (CPR) has been reclassified as a preventive maintenance treatment. Additional revisions to the referenced sections and figures have been incorporated for consistency and clarity. Revisions are summarized on the following pages.

Questions related to pavement project categories should be directed to the Pavement Design Office, Kumar Dave, at kdave@indot.in.gov.

Questions related to the associated geometric design criteria for specific pavement project categories should be directed to the Highway Design Review Office, Russ Brittain, at rbrittain@indot.in.gov.

IDM Revisions

The revised IDM sections are included for reference and summarized below.

Section	Revision Summary
602-1.0	Moved CPR from Pavement Rehabilitation to the Preventive Maintenance (PM) project category list. Moved Cold Central Plant Recycling from the PM project category list to Pavement Rehabilitation to eliminate the discrepancy with the text. Deleted the duplicate reference to Crack Seal/Fill from the PM project category list.
602-1.03(08)	Section deleted. Information moved to 602-1.04(08).
602-1.04(02)	Revised text associated with Cold In-Place Recycling to eliminate “rehabilitate pavement.”
602-1.04(08)	Revised. Information previously in 602-1.03(08).
602-1.04(09)	New (renumbering only). Information previously in 602-1.04(08).
Figure 602-1B, HMA Preventive Maintenance Treatments	Added Hot In-Place Recycling and Cold In-Placed Recycling for consistency with text.
Figure 602-1C, PCCP Preventive Maintenance Treatments	Added Joint Repair for consistency with text.

602-1.0 PAVEMENT PROJECT CATEGORIES

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3. Pavement Rehabilitation
 - a. Structural Overlay, major and minor
 - b. PCCP Rubblization and HMA Overlay
 - c. PCCP Cracking and Seating and HMA Overlay
 - d. Unbonded PCCP overlay over old PCCP
 - e. Thin Bonded Concrete Overlay
 - f. Full Depth Reclamation
 - g. Cold Central Plant Recycling (CCPR)

4. Preventive Maintenance
 - a. Surface Treatments
 - b. HMA Mill and Fill Overlay
 - c. In-Place Recycling Technologies (HIR, CIR)
 - d. Crack Sealing and Filling
 - e. Fog Seal
 - f. Seal Coat/Chip Seal
 - g. Microsurfacing
 - h. Ultrathin Bonded Wearing Course
 - i. Concrete Pavement Restoration (CPR)
 - j. Concrete Pavement Preservation (CPP)
 - k. Pavement Preservation Initiative (PPI)

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602-1.04(02) In-Place Recycling

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2. Cold In-Place Recycling.

... CIR can be used as a preventive maintenance treatment to address most types of pavement distresses...

...

602-1.04(08) Concrete Pavement Restoration (CPR)

[content unchanged]

602-1.04(09) Concrete Pavement Preservation (CPP)

[content unchanged]

Treatment	AADT ¹	Pavement Distresses	Rutting, in.	IRI	Friction Treatment?	Surface Aging	Longitudinal Joint
Crack Seal	Any	Low to Moderately Severe Transverse or Longitudinal Joints/Reflective Cracks	n/a	n/a	No	n/a	n/a
Crack Fill	Any	Low to Moderately Severe Longitudinal Cold Joint, Reflective & Edge Cracking Plus Low Severity Block Cracking	n/a	n/a	No	n/a	n/a
Fog Seal	< 5,000 ²	Low-Severity Environmental Surface Cracks	n/a	n/a	No ³	Retards aging and oxidation; arrests minor raveling	Required on surface layer over longitudinal joint 24-in. in width
Seal Coat	< 5,000 ²	Low-Severity Environmental Surface Cracks	< 0.25 ⁴	n/a ⁴	Yes	Retards aging, oxidation, and minor raveling	n/a
Microsurface	Any	Low-Severity Surface Cracks	Any	< 130	Yes	Retards aging, oxidation, and minor raveling	n/a
UBWC	Any	Low to Moderately Severe Surface Cracks	< 0.25	< 140	Yes	Retards aging, oxidation, and moderate raveling	n/a
HMA Inlay	Any	Low to Moderately Severe Surface Cracks	Any	< 150	Yes	Replaces aged, oxidized, or raveled surface	n/a

HMA PREVENTIVE MAINTENANCE TREATMENTS

Figure 602-1B (Page 1 of 2)

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Treatment	AADT ¹	Pavement Distresses	Rutting, in.	IRI	Friction Treatment?	Surface Aging	Longitudinal Joint
Thin HMA Overlay w/Profile Milling	Less than 10 million, ESAL	Low to Moderately Severe Surface Cracks (For use on Category 1, 2, or 3 roads only)	< 0.25	< 150	Yes	Arrest aging, oxidation, and moderate raveling	n/a
HMA Overlay	Any	Low to Moderately Severe Surface Cracks	Any	< 150	Yes	Arrests aging, oxidation, and moderate raveling	n/a
Hot In-Place Recycling (HIR)	<5,000 ²	Low-Severity Surface Cracks	<0.25	<150	Yes	Arrests aging, oxidation, and moderate raveling	n/a
Cold In-Place Recycling (CIR)	Any	Low to Severe Cracking and Stripped HMA Layers	Any	Any	Yes	Replaces aged, oxidized, or raveled surface	n/a

Notes:

¹ For mainline pavement

² Unless traffic can be adequately controlled

³ Treatment may reduce skid numbers

⁴ Treatment does not address

HMA PREVENTIVE MAINTENANCE TREATMENTS

Figure 602-1B (Page 2 of 2)

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Treatment	AADT ¹	Pavement Distresses	Rutting, in.	IRI	Friction Treatment?	Surface Aging
Crack Seal	Any	Midpanel cracks with aggregate interlock	n/a	n/a	No	n/a
Saw and Seal Joints	Any	> 10% of joints with missing sealant, otherwise joints in good condition	n/a	n/a	No	n/a
Retrofit Load Transfer	Any	Low to medium severity mid-panel cracks; pumping or faulting at joints < 0.25 in.	n/a	n/a	No	n/a
Surface Profiling	Any	Faulting < 0.25 in.; poor ride; friction problems	n/a	n/a	Yes	n/a
Partial-Depth Patch	Any	Localized surface deterioration	n/a	n/a	Yes	n/a
Joint Repair	Any	Surface deterioration located around a transverse or longitudinal joint	n/a	n/a	No	n/a
Full-Depth Patch	Any	Deteriorated joints; faulting ≥ 0.25 in.; cracks	n/a	n/a	No	n/a
Underseal	Any	Pumping; voids under pavement	n/a	n/a	No	n/a
Slab Jacking	Any	Settled slabs	n/a	n/a	No	n/a

Note:

¹ On mainline pavement

PCCP PREVENTIVE MAINTENANCE TREATMENTS

Figure 602-1C

(rev. Sep. 2020)