

# INDOT BRIDGE INSPECTION MANUAL

## PART 7

### WEARING SURFACES

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# BRIDGE INSPECTION MANUAL

## Part 7: WEARING SURFACES

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### 7-1.0 WEARING SURFACE RATINGS

All bridge decks and deck slab superstructures that have independently or separately placed overlays with rigid, semi-rigid epoxy (or similar approved), and bituminous materials are to be rated as outlined in this section. Bridge decks and deck slab superstructures without independently or separately placed wearing surfaces, overlays, or protective systems shall be rated according to the requirements specified in Item 58 of the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges Manual.

The following general condition ratings for each type of wearing surface material specified herein shall be used:

#### **7-1.01 Portland Cement Concrete (PCC) Overlay Condition Ratings**

The following general condition ratings shall be used in evaluating Portland Concrete Cement (PCC) wearing surface overlays. PCC overlays shall include unmodified Class C concrete, latex modified, dense modified, microsilica modified, or similar approved modified PCC overlays.

#### **Condition Rating Guide for rigid Portland Cement Concrete Overlays:**

<b><u>Code</u></b>	<b><u>Description</u></b>
N	<b>NOT APPLICABLE</b> - Code N when Item 58 is also coded N.
9	<b>EXCELLENT CONDITION</b> – no significant defects.
8	<b>VERY GOOD CONDITION</b> – hairline cracking less than 0.012” nominal width and widely spaced.
7	<b>GOOD CONDITION</b> - cracking less than 0.016” nominal width, widely spaced, and less than 5% delamination.
6	<b>SATISFACTORY CONDITION</b> - cracking less than 0.020” nominal width and nominal on center spacing greater than 10 feet. Delamination less than 10%.
5	<b>FAIR CONDITION</b> - cracking greater than 0.020” and less than 0.040” nominal width and nominal on center spacing not greater than 10 feet. Delamination less than 20%.
4	<b>POOR CONDITION</b> – cracking greater than 0.040” nominal width and nominal on center crack spacing less than 10 feet. Delamination greater than 20%. Unpatched or unsound patching, or spalled areas, visible intermittently.
3	<b>SERIOUS CONDITION</b> - delamination greater than 20% with severe cracking and numerous unsound patches and spalled areas visible. The wearing surface is no longer effective.

**Condition ratings less than 3 shall not be coded.**

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**7-1.02 Semi-Rigid Epoxy Overlay Condition Ratings**

The following general condition ratings shall be used in evaluating a semi-rigid (epoxy, polyester, or similar approved material) wearing surface:

**Condition Rating Guide for Semi-Rigid Epoxy Overlays**

<b><u>Code</u></b>	<b><u>Description</u></b>
<b>N</b>	<b>NOT APPLICABLE</b> – Code N when Item 58 is also coded N.
<b>9</b>	<b>EXCELLENT CONDITION</b> – no visible defects or visible wearing of the friction surface aggregate.
<b>8</b>	<b>VERY GOOD CONDITION</b> – minor intermittent wearing of the friction surface aggregate across less than 5% total surface area within the travel lanes.
<b>7</b>	<b>GOOD CONDITION</b> – minor wearing, glazing, or polishing of the friction surface aggregate across less than 40% total surface area within the travel lanes.
<b>6</b>	<b>SATISFACTORY CONDITION</b> – deep wearing, glazing, or polishing of the friction surface aggregate across more than 40% total surface area, but all areas remain intact with no visible surface voids or peeling.
<b>5</b>	<b>FAIR CONDITION</b> – Less than 5% total surface area exhibiting areas of full thickness wearing down to bare deck, surface voids, or peeling.
<b>4</b>	<b>POOR CONDITION</b> – Greater than 5% and less than 10% total surface area exhibiting areas of full thickness wearing down to bare deck, surface voids, or peeling.
<b>3</b>	<b>SERIOUS CONDITION</b> – Greater than 10% of the total surface area exhibiting areas of full thickness wearing down to bare deck, surface voids, or peeling. The wearing surface is no longer effective.

**Condition ratings less than 3 shall not be coded.**

**7-1.03 Bituminous Overlay Condition Ratings**

The following general condition ratings shall be used in evaluating a flexible bituminous material wearing surface. All bituminous material overlays on State or Tollway-owned bridges shall be placed on an agency approved waterproofing membrane system. All bituminous material overlays placed on State or Tollway owned bridges that do not have an agency approved waterproofing membrane system between the wearing surface and deck shall be rated 4.

<b><u>Code</u></b>	<b><u>Description</u></b>
<b>N</b>	<b>NOT APPLICABLE</b> – Code N when Item 58 is also coded N.

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- 9**      **EXCELLENT CONDITION** – no significant defects, cracks, spalls, or voids visible.
- 7**      **GOOD CONDITION** – shallow wearing or rutting of the bituminous surface visible in the travel lanes. No wide cracks, spalls, or voids visible. All cracks present are sealed, and all spalls and voids are soundly patched.
- 5**      **FAIR CONDITION** – moderate wearing or rutting of the bituminous surface visible across more than 30% of the travel lanes. No wide cracks, spalls, or voids visible. All cracks present are sealed, and all spalls and voids are soundly patched.
- 4**      **POOR CONDITION** – moderate wearing or rutting of the bituminous surface visible across more than 30% of the travel lanes. Unsealed cracks and unpatched spalls or void visible across less than 10% of the total surface area.
- 3**      **SERIOUS CONDITION** – widespread wearing or rutting of the bituminous surface visible across the travel lanes. Unsealed cracks and unpatched spalls or void visible across more than 10% of the total surface area. The wearing surface is no longer effective.

**Only the condition ratings listed in this section shall be coded.**