

 Office of Structures Guidelines and Procedures Memorandum	DESIGN
	Number: D-87-35(4)
	Date: 03-16-2018
Treatment of Existing Bridge Decks for Bridges Included in District Resurfacing Projects	Approval: 

The following are alternatives to consider when approach roadways to structures are to be overlaid:

1. Procedures when a bituminous wearing surface does not currently exist on a structure:

- a. Review the General Notes of the existing plans to see if provisions have been made for future two inches of wearing surface. If the provision for future wearing surface was made, the superstructure elements (exclusive of deck) are in good condition, and if the concrete deck condition is such that its preservation is not feasible by a latex concrete overlay, then the structure may be overlaid up to the two inch thickness with hot mix asphalt (HMA).

The existing bridge deck roadway joints and resultant exposed height of barrier on the bridge shall be evaluated for adequacy/modification based on the proposed depth of HMA overlay.

- b. If the General Notes of the existing plans do not state that provisions for a future wearing surface were provided for, then a structural rating analysis of the superstructure elements in their present condition shall be performed with the dead load of the proposed overlay. If the rating results reveal that the maximum gross weight of all the rating vehicles can be accommodated in the **inventory** stress range, the proposed HMA overlay may be permitted if the concrete deck condition is such that its preservation is not feasible by a latex concrete overlay.

The existing bridge deck roadway joints and resultant exposed height of barrier on the bridge shall be evaluated for adequacy/modification based on the proposed depth of HMA overlay.

If the rating analysis shows any vehicle causing stresses within or exceeding the **operating** stress range, the overlay shall be denied. The paving option for this case is to partially or entirely remove the approach pavement section and replace it. The new pavement elevations shall match the adjoining existing bridge deck elevations.

2. Procedures when a bituminous wearing surface exists on a structure:

- a. Check the current bridge deck condition rating and if it is coded a five (5) or higher, analyze the superstructure in its present condition to see if it can accommodate the proposed HMA overlay. Verification of the existing wearing surface thickness shall be made prior to the rating analysis. If the stresses do not exceed the **inventory** stress level for all the rating vehicles then the proposed HMA overlay may be permitted.

The existing bridge deck roadway joints and resultant exposed height of barrier on the bridge shall be evaluated for adequacy/modification based on the proposed depth of HMA overlay.

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If the stresses are within or exceed the **operating** stress range, the overlay shall be denied. The paving option in this case is to remove and replace the existing wearing surface in partial or full depth.

- b. When a bridge deck condition rating is a four (4) or less and the bridge or bridge deck is scheduled for replacement, the structure may be overlaid with HMA if an analysis shows the structure will not exceed the **operating** stress levels for all rating vehicles. The HMA overlay shall be saw cut along the center line of the bridge roadway joints. Prior to placing the overlay, an appropriate debris shield shall be placed between girder or stringer flanges in spans over roadways, sidewalks, railroads, etc. until the deck or structure is replaced.

The requirement for increased inspection frequency to annually, based on the structure being in the **operating** stress range, may be waived if approved by the Deputy Director of the Structure Inspection and Remedial Engineering Division.

- c. When a bridge deck condition rating is a four (4) or less, not scheduled for bridge or deck replacement, and falls within the operating stress range for any rating vehicle with the proposed HMA overlay, the overlay shall be denied. If the bridge wearing surface is in need of refurbishing, the paving option in this case is to remove and replace the existing wearing surface in partial or full depth. Prior to removing the existing wearing surface, an appropriate debris shield shall be placed between girder or stringer flanges in spans over roadways, sidewalks, railroads, etc. until the deck or structure is replaced. Patching of the deck may be required but keep to an absolute minimum prior to placing the new HMA overlay.