

Just for street and road workers

Routine bridge work

Consult your supervisor and perform routine bridge maintenance and repair as directed.

Cleaning

First remove debris or excess vegetation from the bridge approach, bridge deck, under and around the guardrails, under the bridge, and in the waterway.

Dispose of accumulated debris. Do not leave debris where it might be picked up during the next high water event.

Clean decks, piers, abutments, and expansion joints. You may be asked to blow incompressible materials from the joints.

Blading the bridge approach (granular surface)

Bridge approaches may need frequent blading because they are difficult to drain and the subbase beneath the crust is prone to settling.

If a bridge deck is crowned, gradually reduce the road crown to match the bridge crown. If the bridge does not have a crown, gradually zero out the road crown to meet the elevation of the bridge deck.

Do not drag too much rock onto the bridge deck.

Repairing wood decks

Loose or broken planks can create a safety hazard for drivers. If you observe either, tell your supervisor immediately.

You may be asked to make minor repairs. First, tighten loose planks with existing or new bolts.

Then determine the number of planks to be replaced, and measure the lengths required. Bring new bridge planks to the site and cut them to length using a chain saw. Remove and replace old broken planks.

When you're finished and the bridge deck is secure, notify your supervisor. Documenting the timing of maintenance repairs can be critical in liability lawsuits.



Cleaning debris in river channel (Photo courtesy of Indiana LTAP)

Repairing delaminated decks

To determine the extent of surface delamination, drag a log chain over the entire deck surface. Where the concrete is deteriorating, you will hear a distinct hollow sound. Mark these areas with spray paint.

With jack hammers and hand tools remove the deteriorating concrete down to sound concrete. The deterioration may extend under the re-bars. Thoroughly clean the area with an air compressor and power and hand brooms.

If you are repairing the deck during cold weather, place a temporary asphalt patch.

If the weather is moderate, apply a grout or bonding agent and then place a concrete surface patch. Cover the new concrete with a liquid curing compound, plastic, and/or wet burlap, as directed by your supervisor. This protection allows the concrete to cure (develop the required strength) adequately before traffic is allowed on the concrete. ■

Effects of delamination on bridge decks

Delamination is generally caused when chloride ions (salts) infiltrate the concrete deck and eventually corrode the reinforcing bar (re-bar). When steel corrodes, it expands up to eight times. The expansion puts pressure on the concrete until its bond with the re-bar is broken and cracks develop.

Eventually pieces of the concrete deck will come loose and break off. Broken areas are like tooth decay: They will spread until the damaged areas are removed and filled with new material.