Prior to application of the membrane, the deck was sandblasted and cleaned of any deleterious material. The primer was then applied to the deck surface. The primer penetrates into the concrete to improve bonding of the membrane.

The spray-applied membrane application was performed by G.S. Bolton from New Hampshire.

Aggregate to be broadcast into surface layer (30-40 mils.) of membrane to enhance pavement bond.

Vertical sheet membrane sealed to deck surface.

Sealing the gutter line along the joint of the deck and curb.
R.J. WATSON’S Bridge Deck Membrane (BDM)
North Elm Bridge over the Royal River in Yarmouth, Maine
October 31, 2014

The membrane is sprayed continuously vertical to horizontal making a watertight seal at the gutter line.

Applying the first layer of membrane. Default thickness is 80 mils. (2mm).

Quality assurance tests (pull-offs) were performed and documented throughout the application process. Picture on the right shows that pull off test removed some concrete surface which indicates an ideal bond between membrane and substrate.

The membrane is sprayed continuously vertical to horizontal making a watertight seal at the gutter line.

Immediately prior to paving, blisters were noticed in the membrane surface. At this point, it was too late in the season to postpone paving any longer. The decision was made to proceed with paving the first course of asphalt now and repair the membrane prior to the application of surface course of asphalt in the Spring.
Cutting open the blisters revealed that the top layer of membrane had not bonded to the first course. Apparently the first course never cured properly in this area.

Tack was applied to the membrane surface prior to paving.

The full width of the deck surface was paved to a depth of 1-1/2" with the base course (12.5mm gradation).

In the Spring of 2015 the contractor/applicator returned to the project.

The asphalt pavement was saw-cut to the membrane. Pavement and membrane was removed to the bare concrete deck surface. The concrete was primed and membrane was re-applied. A benefit of this membrane system is that the membrane will adhere to itself seamlessly. Pavement was then placed and was ready for the application of the asphalt wearing surface. There were two areas similarly repaired.

The manufacturer explained the reason for the uncured membrane was due to contaminants in Part "A" during application. The manufacturer assumed the costs involved in repair.
Membrane has been removed to bare concrete.

Bridge Preservation membrane being applied.

Craig Hurd, Resident Engineer felt the repair work went well and seemed confident that the repair was a success.

The deck will be inspected in the spring of 2017 as this will mark the end of the second winter of this installation. Special attention will be paid to any signs of blistering of the pavement with particular attention paid to the two full-depth repairs.

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