Deck Preservation
NHDOT Pilot Program of Treatments

Northeast Bridge Preservation Partnership
Manchester, New Hampshire
September 9-11, 2015
Steve Johnson, Senior Engineer
Trial Project Location

Bridge between Piermont, NH and Bradford, VT with a failed thin overlay

Statistics

- 352’ single span Pennsylvania steel truss
- 20’-6” roadway width (curb to curb)
- Original construction 1929
- 1993 rehab installed a half-filled grid steel deck with lightweight concrete and a ½” experimental overlay
1993 Rehab Overlay application
Existing Condition
Trial Products

Quikrete FastSet Latex Modified DOT Overlay

Kwik Bond Polyester Polymer Concrete (PPC 1121)
Deck Preparation
Latex Modified Installation  
October 9 & 10, 2014
Placement
Broom Finish - Phase 1
Waiting
7° makes a difference
Phase 2
Phases 1 and 2 Complete
Polyester Polymer Concrete  October 28, 30, 31, 2014
Our “Chemist”
Methacrylate Primer
Phase 1 Installation
Floating
Friction Sand and Tining
Surface Preparation - Phase 2
Phase 2 - Installation
Phase 3 - Installation

Why aren’t there any Pictures?

Oh, and did I mention that we ran short of material?
Final Finish – Phases 1, 2, and 3
2015 Results - Polyester Polymer Concrete

Minimal cracking
2015 Results - Polyester Polymer Concrete

Some rust bleed through - was expected
2015 Results - Polyester Polymer Concrete

Some snowplow blade wear – also seen in Bradford
2015 Results - Latex Modified Concrete

Significant cracking in one location
2015 Results - Latex Modified Concrete

Hairline map cracking in numerous locations
2015 Results - Latex Modified Concrete

Minimal wear from snowplow blades
Top 5 Lessons Learned

5. Not the right location for Latex Modified Concrete – Structure is too flexible

4. ½” Latex Modified overlay is difficult to place and doesn’t allow tining – Use a thicker overlay

3. Fill deep grid depressions prior to placing Polyester Polymer Concrete Overlay to reduce potential cracking

2. Use a thicker Polyester Polymer Concrete Overlay to allow future sawcut grooving
Number One Lesson Learned

1. CLOSE THE BRIDGE TO TRAFFIC DURING CONSTRUCTION !!
Questions ?