



## Project Information

<b>Manufacturer</b>	Bridge Preservation
<b>Project Owner</b>	Chicago Transit Authority - Red Line LRT
<b>Project Name</b>	Granville Bridge Rehabilitation
<b>Contract Number</b>	N/A
<b>General Contractor</b>	Kiewit Western Company
<b>Coating Contractor</b>	American Concrete Restoration
<b>Structure Type</b>	Concrete Ballasted Rail Bridge
<b>Date of Installation</b>	September 2004
<b>Square Feet</b>	15,000
<b>Location</b>	Chicago, IL

## Surface Preparation

Removal of track and ballast done by excavator and skid-steer loader. All ballast was removed down to the original concrete deck surface. A preexisting asphalt waterproofing membrane that varied from 20 mils to 500 mils in thickness was mostly removed by using pneumatic chisels. The remaining asphaltic membrane was removed by abrasive sand blasting.



The original bridge structure was constructed in 1920, and had not received any type of waterproofing upgrade since the original construction. The asphalt waterproofing membrane proved difficult to remove, and primarily had to be removed using air chisels and spud bars. The original clay duct bank was severely damaged and required rebuilding using Five Star Structural Concrete to fill, smooth and provide a sound base material for the waterproofing membrane to adhere to.



## Inspection and Testing

Ambient conditions are recorded at each project. Bridge Preservation requires that dew point be 5 degrees (F) above dew point with the temperature rising prior to application of primer or coating systems.

Moisture content in the concrete surface should be 5% or lower to insure proper adhesion of primer to the concrete substrate. Additional drying is required if concrete moisture content exceeds maximum allowable values.

Adhesion to concrete is important to insure a sound well adhered waterproofing membrane. Minimum tensile pull-off values should be above 150 psi on concrete substrates. Cohesive failure within the concrete is desirable.

## Priming and Coating Application

The entire deck was flood coated with Bridge Deck Concrete Primer. This method of application was used to maximize penetration of the primer into the deck surface, to fill the cracks and to eliminate the possibility of overspray.

Steel coupons were imbedded in the concrete deck at 300 square foot intervals to aid in measurement of the waterproofing membrane using a magnetic dry film coating thickness gauge. Minimum average thickness on this deck was 80 mils.

Final membrane being sprayed with the ballast being placed onto the deck. The membrane was 15 to 30 minutes old. Membrane was sprayed in just over 2 hours to complete the deck. The different color was due to the artificial lights.

