

Deckguard[®] Spray-Applied Waterproofing System

Bridges



Deckguard[®] provides watertight protection of both steel and concrete substrates against freeze-thaw degradation and the corrosive effects of winter salt spray ensuring extended service life of the bridge structure.

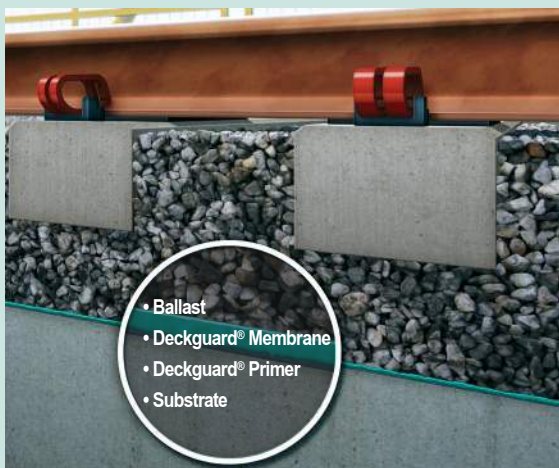
Bridge the World with Leading Infrastructure Solutions

Deckguard® Outperforms

Torch-Applied, Hot Mop, Pre-Form Sheets and Leading Spray-Applied Products

Deckguard is an easily installed spray-on material that forms a tough seamless waterproofing membrane for highway and railroad bridge decks. This cold-applied elastomeric barrier provides longer bridge deck lifecycle performance and more ease of application than environment-harmful non-spray membranes, such as torch-applied and hot mop products. Deckguard's cost-saving thin coating also outperforms all other types of spray-applied membranes, including MMA.

This innovative waterproofing material has been tested to meet or exceed the most stringent DOT and AREMA standards. D.S. Brown is the only manufacturer who evaluates each product batch and offers a spectrograph analysis from these tests for comparison with the spectrograph of the applied material to assure installed product quality. D.S. Brown also provides onsite Quality Assurance inspections for the duration of each bridge project.



Deckguard® rail bridge application.

Deckguard® Spray-on Seamless Waterproofing Membrane

Highway and Railroad Bridge Decks

Deckguard has the highest tested resistance for crack-bridging, having been tested to 40 cycles for 1/8" at -15°F to ensure watertightness under extreme deck movement. It is the first membrane system to use IR Fingerprinting during manufacture and to provide individual batch IR printouts with each shipment guaranteeing material shipped meets all published test data. This innovative membrane provides maximum protection against stray current, making it ideally suited for use on cantenary and live third rail LRT bridges for protection of embedded steel reinforcement and steel decks.

This spray-on membrane can be applied to 5 mil profiled steel decks without priming, eliminating a time-consuming step and providing faster placement for time-sensitive installations. It is extremely resistant to water vapor transmission and protects against moisture entrapment between Deckguard and deck surfaces that could be susceptible to freeze-thaw degradation. It can be applied in extreme cold and elevated temperatures exceeding 170°F surpassing the limitation of 104°F of both MMA and Urethane membranes.

Deckguard can be used in conjunction with hot asphalt overlays to provide the best possible protection against penetration of saltwater from winter snow and ice prevention activities. Deckguard Primer will bond with asphalt residue to allow quick installation when time constraints warrant fast turnaround.

D.S. Brown's Deckguard is able to resist early loading of ballast and pneumatic tire traffic almost immediately following membrane placement, ensuring fast turnaround and limited delays during construction. It meets and exceeds all requirements of AREMA guidelines for use on all railroad bridges.

Deckguard has passed the North American Ballast Test at 80 mils for 2.0 million cycles. It can be used in direct contact with rock ballast without the need for protection board, reducing cost and installation time on railroad bridges. Also, unlike many other membrane systems, Deckguard does not have an objectionable odor that could cause public concerns during installation.

Applications

Innovative Deckguard Spray Membrane is specifically engineered for use on highway and railroad bridge decks, bridge abutments, pier caps, tunnels and pedestrian walkways.

This waterproofing membrane can be used on intermodal and LRT rail bridges with or without protection board, providing fast turnaround for demanding project schedules.

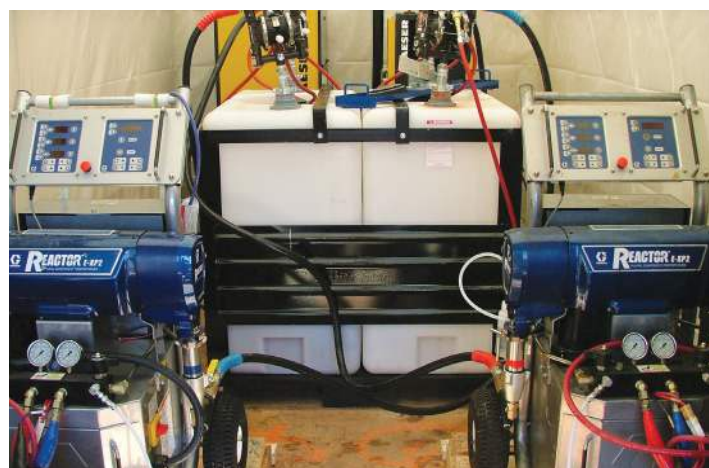
D.S. Brown's Deckguard can be used without priming on steel decks having a 5-mil profile allowing the fastest system installation in the industry.

Deckguard's superior toughness allows for short-term rubber-tired construction/vehicular traffic before returning the bridge deck to service.

Installation

Deckguard Spray Membrane is spray-applied using suitable plural spray equipment at a 1:1 mix ratio. Deckguard Spray Membrane is applied over the Deckguard Primer at a nominal 80 mils. Application of a second subsequent 30 to 40 mil layer of membrane or top coat shall be applied on highway bridge decks that have been determined to require an aggregate broadcast for shear-key purposes.

Shelf life is up to one year in factory sealed containers stored between 55°F and 95°F.



Typical spray pumps equipped with data recorders used to dispense the Deckguard® membrane.



Deckguard® Waterproofing System, Greenleaf Avenue Bridge, Chicago, IL

Deckguard® Advantages

- Low vapor transmission
- Applied to 5-mil profile steel decks without priming
- Low odor
- Meets AREMA Cold Spray-Applied Waterproofing requirements
- Seamless lap joints
- Low temperature flexibility
- Complies with "Buy America" requirements
- VOC Compliant
- Certified Applicator program
- 100% solids
- Non-hybrid system
- Excellent chemical resistance
- Superior crack-bridging
- Accepts thermal movement without crazing
- Infrared Spectroscopy used as part of Quality Control during manufacture

Bridges

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Deckguard® Primer

Property	Test Method	Criteria
Gel Time		30 seconds typical
Maximum Tack-Free Time at 77° F (hours)		1 hour
Bond to Deckguard® Membrane	ASTM D4541	500 psi+
Adhesion to Steel	ASTM D4541	>300 psi
Adhesion to Concrete	ASTM D7234 and D4541	150 psi*

*Or failure in concrete.

Deckguard® Top Coat

Property	Test Method	Criteria
Open to Traffic		4 Hours*
Solids Content		100%
Gel Time		30-45 seconds
Tack-Free Time		3 minutes
Hardness	ASTM D2240	45-50 Shore D
Elongation	ASTM D638	250% +
Water Vapor Transmission	ASTM E96 Procedures A and B	< 0.9 perms
Adhesion to Steel	ASTM D4541	> 300 psi
Adhesion to Concrete (primed)	ASTM D7234 and D4541	> 200 psi**
Taber Abrasion H 18/1000 cycles	ASTM D4060	125 mg
Crack-Bridging	ASTM C1305 Minimum 80 mils at 40 cycles at -15° F with 1/8" opening	Pass
Ballast Test	N. American	Pass 2,000,000 cycles
Electrical Resistance	ASTM D257	1.5 x 10 ¹⁴ +ohmcm
Tensile Strength	ASTM D638	> 2000
Chemical Resistance to Glycol, Calcium Chloride, Diesel and Gas	ASTM D543 Method B	Pass
Tear Strength, pli, Die C	ASTM D624	450 pli

*Deckguard membrane must include an approved aggregate and be allowed to cure 4 hours prior to allowing traffic.

**Or failure in concrete

Deckguard® Waterproofing System

Property	Test Method	Criteria
Open to Traffic		4 Hours*
Solids Content		100%
Gel Time		5 seconds
Tack-Free Time		10 seconds
Hardness	ASTM D2240	50 Shore D
Elongation	ASTM D638	250% +
Water Vapor Transmission	ASTM E96 Procedures A and B	< 0.9 perms
Adhesion to Steel	ASTM D4541	> 300 psi
Adhesion to Concrete (primed)	ASTM D7234 and D4541	> 200 psi*
Taber Abrasion H 18/1000 cycles	ASTM D4060	125 mg
Crack-Bridging	ASTM C1305 Minimum 80 mils at 40 cycles at -15° F with 1/8" opening	Pass
Ballast Test	N. American	Pass 2,000,000 cycles
Electrical Resistance	ASTM D257	1.5 x 10 ¹⁴ +ohmcm
Tensile Strength	ASTM D638	> 2000
Chemical Resistance to Glycol, Calcium Chloride, Diesel and Gas	ASTM D543 Method B	Pass
Tear Strength, pli, Die C	ASTM D624	450 pli

*Deckguard membrane must include an approved aggregate and be allowed to cure 4 hours prior to allowing traffic.

**Or failure in concrete

Deckguard® Tack Coat

Property	Test Method	Criteria
Color		Black
Specific gravity at 25° C		1.02
Penetration at 77° F	ASTM D5	15-40
Weight per gallon at 60° F		8.5 lbs.
Flash Point, C.O.C.		550° F min
Odor		Tar