

Product Case History



The Lions Gate Bridge

PRODUCT(S) USED:

- Exterior Coating 1: Carboguard 859
- Exterior Coating 2: Carboguard 893
- Exterior Coating 3: Carbothane 134 HG

AREA COATED:

The Lions Gate Bridge was built in 1938. It stretches 853 meters (2799 feet) across the Burrard Inlet.

The B.C. government insisted on a deck replacement process that minimized the closure of the bridge to traffic. The bridge design chosen by world-renowned local engineers is an “orthotropic” design. It is a very efficient way of strengthening a deck structure, but also much more complicated to fabricate and install insuring the perfect fit and alignment of each individual piece.

The M.T.O. specified coating system was Carboguard 859 organic zinc-rich primer, Carboguard 893 a cycloaliphatic amine epoxy (mid coat) followed by a finish coat of Carbothane 134 HG, an aliphatic acrylic polyurethane.

LOCATION:

VANCOUVER, BC

DATE OF APPLICATION:

MAY - NOVEMBER 2001

MARKET:

BRIDGES & HIGHWAYS

SUBSTRATE:

STEEL

SURFACE PREP:

CLEAN & DRY

EXPOSURE:

FREQ. WET W/FRESH WATER;
CONDENSATE, SPLASH OR SPRAY

SURFACE PREP:

SSPC / SP12WJ4



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As the project progressed, some engineering problems resulted in lengthy delays of up to one full year. Thus, the previously prepared coated material's lifespan in the hard elements was questioned.

The unexpected delays created a two-fold coating problem. The uncoated Carboguard 859 Zinc Primer on the faying surfaces as well as the non-faying surfaces had to be addressed to compensate for the lengthy setbacks.

Carboline Technicians recommended any loose salts or water-soluble salts (Chlorides) on the surface to be removed prior to further coating or erection work.

The integrity of the primer would not be compromised as long as the exposure was not extreme. Care had to be taken to ensure "ponding" does not occur on any of the primed surfaces as the immersion condition (ponding) will greatly accelerate degradation of the 859 Primer.

The solution was to power wash to SSPC/SP12WJ4. This simple procedure and application was enough to offset the delay and keep the surface-tolerant painting systems integrity front and center.

COATING SELECTION EXPLANATION:

As of May 15, 2001, there are currently 22 of the 54 deck sections in place. Each 16.2 meter-wide section is attached or spliced together using approximately 800 high-strength steel bolts per slice which are also system-perfect to be coated with rustbond. Rustbond penetrating sealer is a one-of-a-kind product that is simple to apply and can be used on a wide range of difficulty substrates that require corrosion protection. Rustbond is unique to Carboline, meets VOC requirements and is used world-wide.

Carboline is proud and confident the control and prevention of corrosion on the bridge has been fully addressed by using Carboline products; the industry leader in Corrosion Control World-Wide.