

## October - November 2024

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## Harbor Bridge Project Painting-by-the-Numbers

HPB painting operations reached about 70% completion this fall across 6.5 miles of structures. The numbers are staggering at approximately 3,300,000 square feet of primarily concrete surface requiring about 16,500 gallons of Department of Transportation-approved opaque concrete sealer to cover.

Here's a glimpse at the ongoing final touches for the following roadwork and bridge structures: Retaining walls, traffic barriers, curbs, abutments, footers, columns, caps, beams, segments, median slabs, and pylons.

**Safety First:** For each crew member working in each project area, a formal safety orientation and plan must be reviewed to avoid chemical and high-elevation hazards. About one-third of the painting work is performed at over 110 feet high, utilizing man baskets that reach up to 185 feet, and on custom-made cantilevered under-bridge platforms that extend 80 feet to reach the underside of the segments and delta frames in the cable-stayed bridge spans.

**Surface Preparation:** The secret of a good paint job is all about the preliminary work done before the topcoat is applied. Several steps must be followed before the application to prevent paint from peeling, cracking, or bubbling. 1) All concrete, whether cast-in-place, poured, slipped, or fabricated off-site, must cure at an average of 75 degrees Fahrenheit or higher temperature for a minimum of 28 days. 2) The surface area is cleaned by water blasting to remove all oil, dust, grease, dirt, and other foreign residue, leaving a slightly etched uniform texture to ensure adhesion. 3) After a thorough cleaning, a procedure known as 'point and patch' is followed, where the raw surface is inspected to identify uneven texture or surface fissures, which are filled with a patching compound and scraped to prepare the final canvas.

**Material and Finish:** Project-wide, a specially formulated opaque white silicone acrylic sealer is used to bond with the high-performance concrete in our structures, providing protection and color retention. The product offers a waterproof barrier preventing stains from seeping into the concrete. The thermoplastic nature of the resin allows for superior protection and ease of routine maintenance or removal of unwelcome graffiti. Before painting begins, the surface must be completely dry with temperatures at 50 degrees Fahrenheit or higher and no rain in the forecast for at least four hours. Two coats are sprayed liberally with a minimum of three hours to dry between coats. The total application rate is about 200 square feet per gallon.

As with every scope of work on the HBP, the job is not complete until it passes a quality assurance inspection. Thank you to our crews who continue working nights and weekends on overhead structures to avoid inconveniences to daytime commuters during lane closures and detours necessary for public safety.





