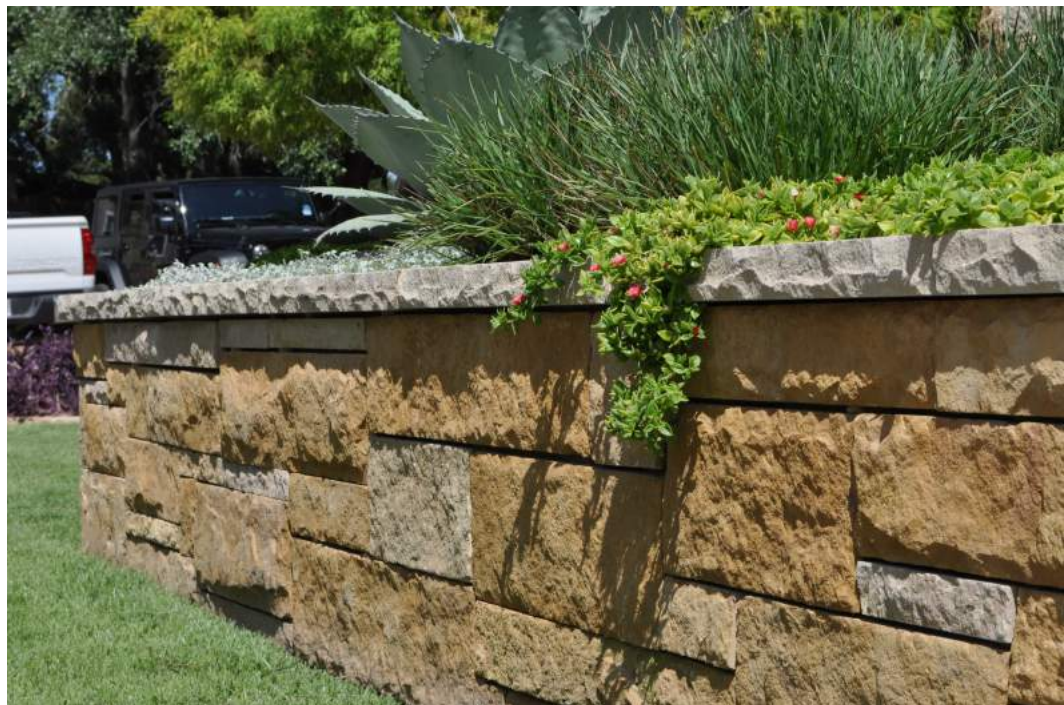
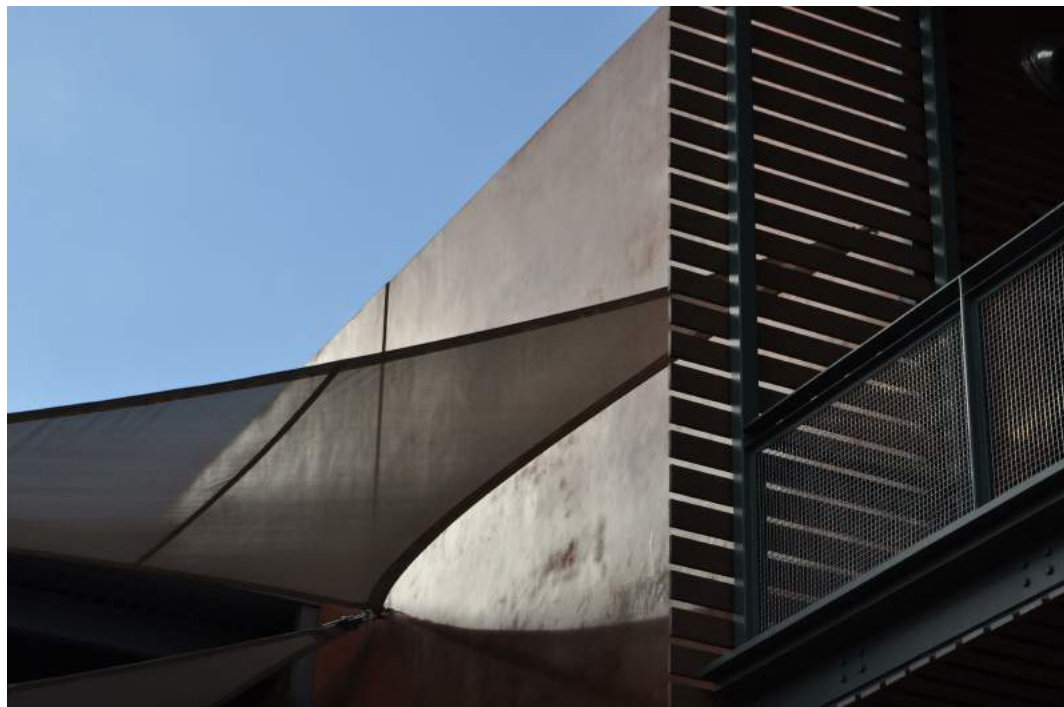
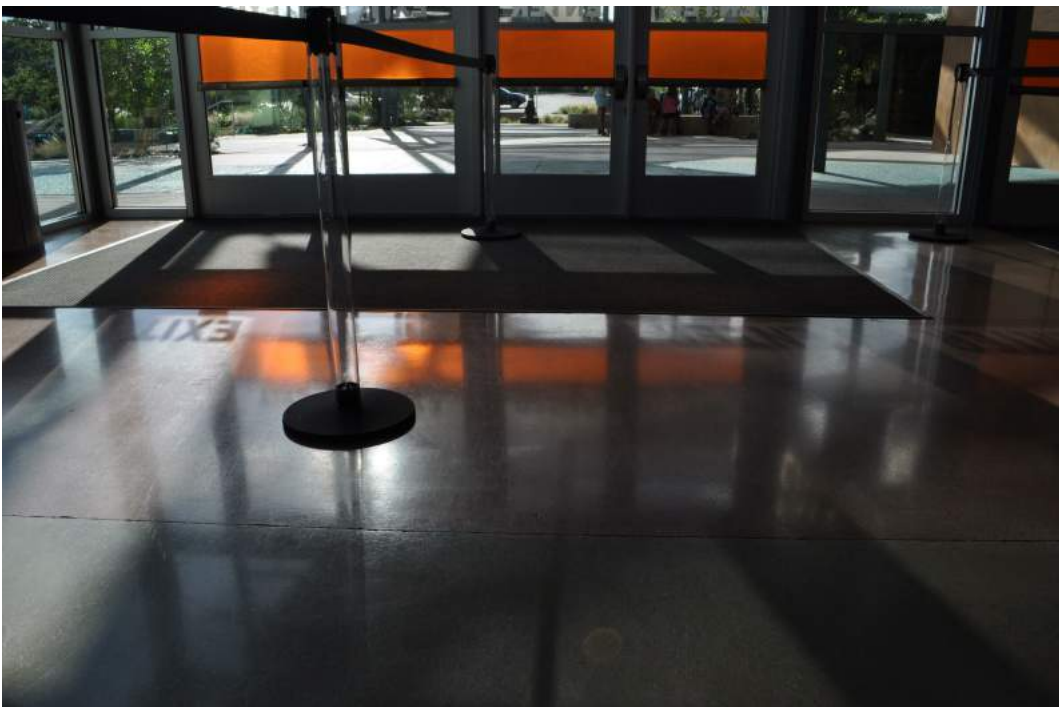


INNYX

CASE STUDIES



The Golden Gate Bridge



Fifteen Million Dollars Spent on Maintaining the Bridge's Paint Every Year.

Who: The Golden Gate Bridge, Highway and Transportation District

What: Ionyx T2

When: 2012

Where: San Francisco, CA

Why: Slow down and help prevent corrosion damage to the bridge, and preserve appearance.

In 2012, the Golden Gate Bridge, Highway and Transportation District had a problem they thought they had to live with: a never ending paint job. The Golden Gate Bridge is so large that by the time painters finish repainting the mammoth structure, they have to start the entire process over again.

In 2013, The Golden Gate Bridge, Highway and Transportation District employed 33 full time painters to maintain this national icon. The current process of repainting the bridge involves: grinding the surface down to bare metal, applying a very thick, heavy zinc-loaded primer, and then finally the color coating over the primer.

Maintaining the bridge is particularly arduous due to the corrosive salt water environment it exists in. Salt is very damaging to paint, and quite often a literal "salt fog" blankets the bridge almost entirely.

When we approached them, we did not know how long our protective coating would perform in this harsh environment, but we did know it would provide some much needed upkeep relief. They agreed to coat over part of the North Tower immediately after repainting it.

4 years later, the coated section looks almost exactly the same as the day the new paint was applied. As you can see, the uncoated section is heavily oxidized, failing, and aesthetically displeasing.

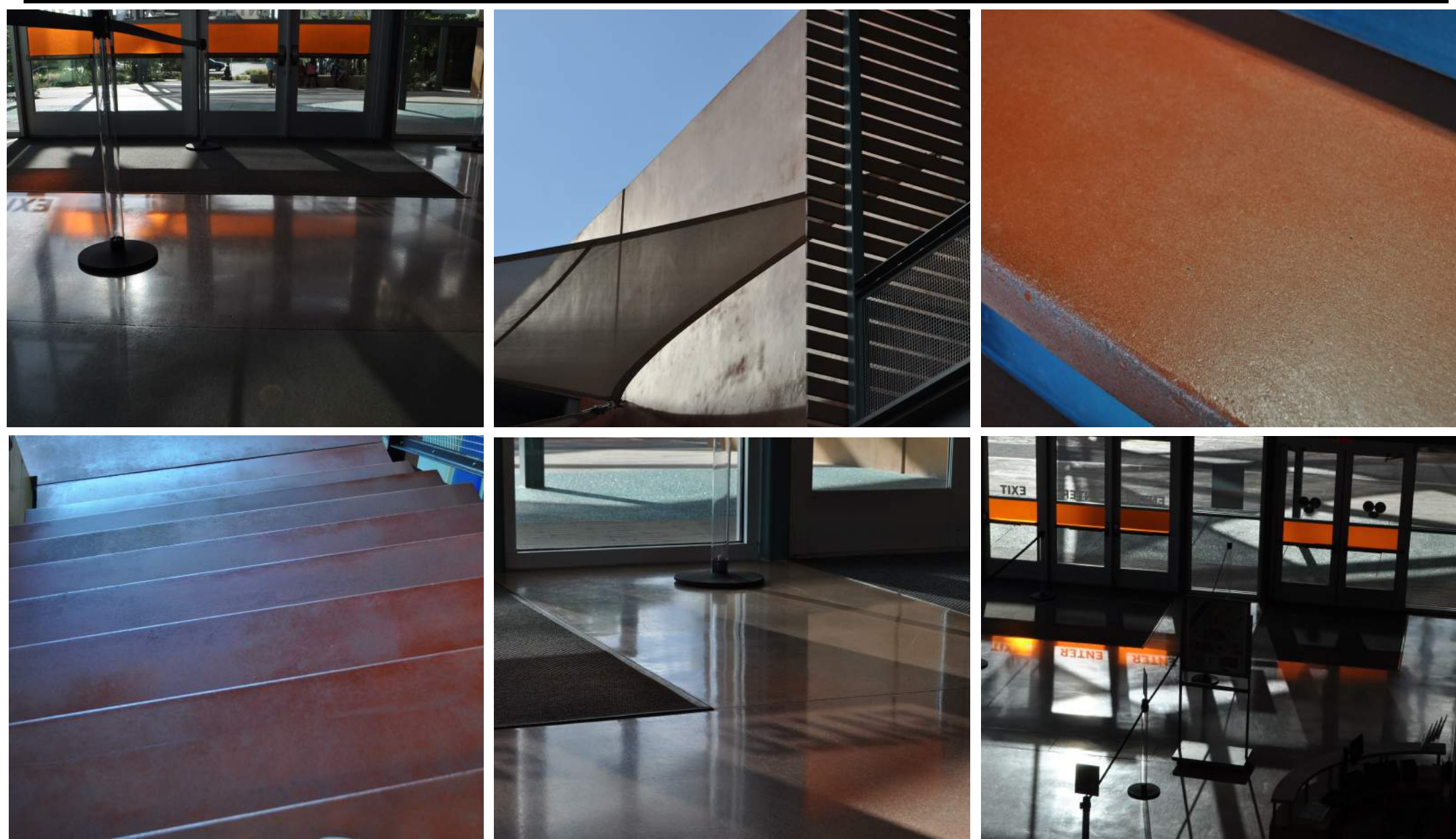
On average, fifteen million dollars is spent on maintaining the bridge's paint every year. Millions of dollars will be saved by using our asset preservation coatings. When nanotechnology meets the coating industry, tax dollar eating problems like this one become easy to solve.

Maintaining the Golden Gate Bridge:

- The bridge is continuously repainted, instead of all at once. It takes about **3 years** to repaint the bridge from end to end.

- There are **33 painters** who are responsible for painting/maintaining the paint on the bridge.

- The 10 year budget for painting/maintaining the paint on the bridge is **over 150 million dollars**.



San Antonio Children's **Do-seum**

Who: San Antonio Children's Do-seum

What: Ionyx T2

When: April - November 2014

Where: San Antonio, TX

Why: Preserve the beautiful aesthetics of the museum and protect parts of the building from the large amounts of daily traffic

In 2008, San Antonio Children Museum determined that it was time for an overhaul. They wanted to make learning something that is not only fun for kids, but to also create a unique experience that connects children, families, and the community. After 3 successful city projects contributing to this goal, their masterpiece - The Do-seum - opened its doors in June of 2015.

If there is one thing that being in the business of entertaining kids teaches, it's that sometimes things can get a little messy. The Do-seum owners knew they had to protect their giant knowledge-sharing inspired structure from the hundreds of

thousands of children that would be racing all through the building. In other words, they needed to preserve their asset.

They didn't just want to preserve the aesthetics of the building, they wanted to enhance them. They wanted a building that had elements that would attract kids, as well as the parents that would take them there. Importantly, these enhanced aesthetics would have to brave the creative talents for destruction which children are sometimes known for.

Starting with the walls in April and finishing with the floors in November of 2014, our protective coatings were chosen for the job. The children were coming.

The images above were taken in late June of 2016. **More than 1 million people** have come in and out of The Doseum since the coatings were applied. The coated concrete floors in front of the entrance still have their mirror like finish, despite all the traffic. The color finish on the stairs (which play musical notes with each step - lots of traffic) has held up perfectly. The sheen of the coating on the outside walls, after two years in the Texas Sun, can still be seen. Despite giving it their best, it seems not even vacationing children can take these coatings down.



Who: Land West Design Group

What: Ionyx Multipurpose Sealer

When: 2009

Where: Austin, TX

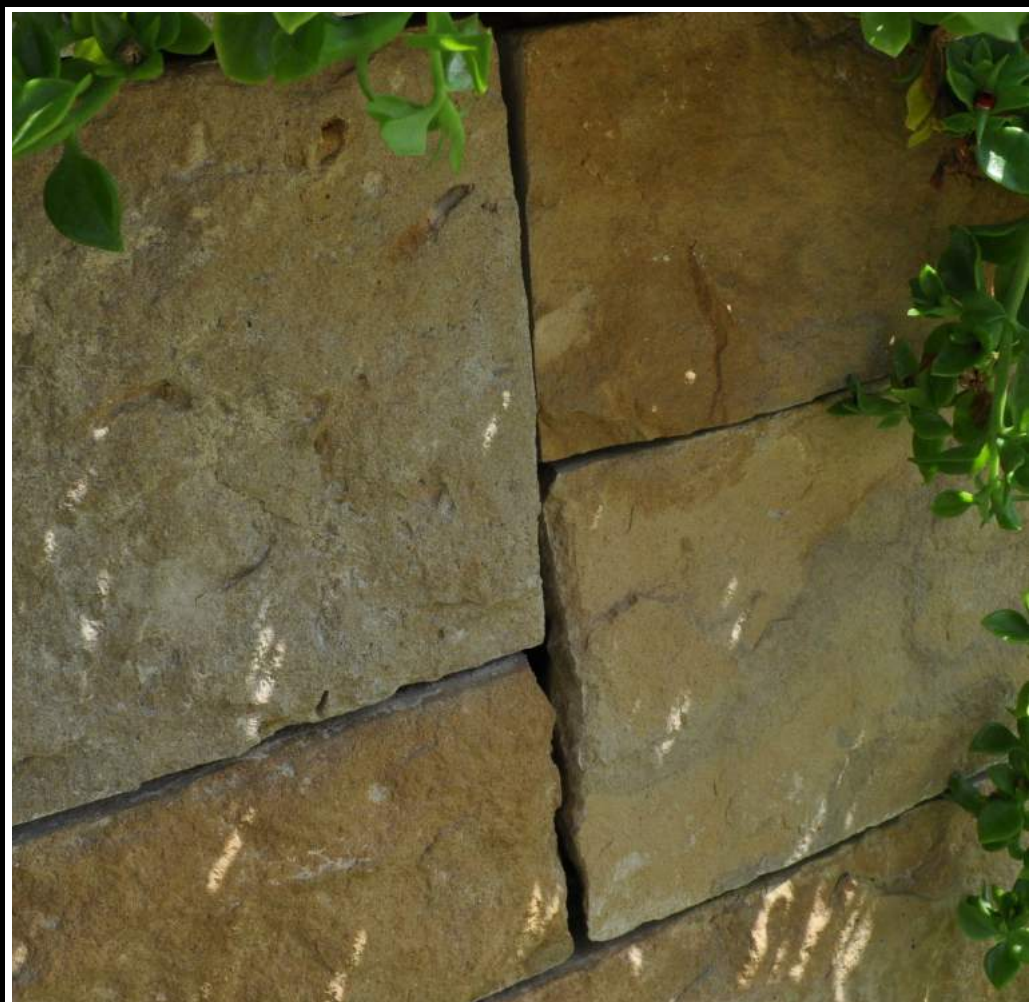
Why: Maintain and protect the clean, natural look of their outdoor stone from organic growth and stains, as well as make cleaning easier

Soon after commercializing our very first product, we found Land West, a landscaping company located about 5 miles away from our first location. They were and still are very active and good at what they do, and they needed their main office to reflect the quality of their work. In order to do that, they needed a high quality sealer.

A few gallons later and their stone was sealed from anything nature could throw at it, and Texas has thrown some pretty intense weather our way since 2009. Their stone/masonry has only been sealed once.

These pictures were taken in the beginning of July, 2016, **7 years after being sealed!** As you can see, the property still has an immaculate appearance. We thought we'd try to peek under the foliage to find some algae, moss, or mildew, but to no avail. The 0 VOC, water-based sealer has done its job by preventing any blemishes from ruining this pristine property's image.

Our chemistry lab may have a little leeway in its appearance with all the mad scientistry going on, but a landscaping company can't afford to have their work place look anything less than perfect. We are honored that they chose us to preserve this beautiful property, and glad that our very first product has outperformed even our best expectations.



CATEGORY 5
SHOOT-OUT



Who: Gone Again 32. ft. Skater

What: Ionyx Holdfast Bottom Coat



Why: Reduce drag, make hull easier to clean, prevent marine growth, break the speed record for 32 ft. Skater.



When: April 2014

Where: Biloxi, MS

Kenny Mungle, owner of the GONE AGAIN racing team, wanted to make his boat, GONE AGAIN, the fastest in its class. He has a long career of racing boats, and is one of the best in the nation. He and his team are masters of optimization. Knowing how to squeeze out just a few miles per hour over your competition can make you a national star faster than a 32 ft. skater in a top speed shootout.

The 2014 GLOC "Grand Lake O' the Cherokees" was coming up, and the speed record at that time was 178 MPH for 32 ft. Skaters. Kenny had achieved 176 MPH with GONE AGAIN, but just couldn't quite get any more speed out of her. After contacting Kenny and telling him what we could do, he let us coat the hull and the underwater gear with our marine coating. 10 days later, GONE AGAIN broke the world speed record for its class by registering a screaming 182 MPH. Kenny Mungle became a happy customer.



Though a lot of science may go into the coating, the way it works is actually quite simple. The coating is extremely durable, very resistant to corrosion, and limits marine growth by not allowing it to "stick." More importantly, it has a hydrophilic quality, or in other words, it makes water stick to it. By creating a permanently wet, smooth surface, water drag is significantly reduced, allowing the coated object to move through the water with less resistance.

The racing boat community is extremely competitive, with rising stars falling as quickly as they climb. After 2 years, Kenny Mungle has cemented his name in this adrenaline fueled community. He remains vigilant for any competitive advantage he can get, but when it comes to hull coatings, we're still his number one pick.



Who: Matson Shipping

What: Ionyx HoldFast Prop Coat

When: 2014

Where: Beijing, China

Why: Prevent destructive cavitation on propeller and improve surface slip for increased fuel economy.

Cavitation is a devastating phenomenon that has affected propellers and impellers since their invention. A spinning underwater propeller generates bubbles on the surface of the spinning blades. The high pressure zone created by a spinning propeller causes these bubbles to implode, leaving a temporary vacuum on the surface of the propeller where the bubble used to be. Water in the high pressure zone is immediately forced into the vacuum at a force of up to 60,000 PSI. Over time, these micro-occurrences can completely destroy a propeller. This damage, which appears as craters on the surface of a propeller, is called Cavitation.

Where many coatings attempt to address the symptoms of cavitation by being hard or flexible, Ionyx HoldFast Prop Coat solves the cause of cavitation - HoldFast Prop Coat prevents the bubbles from forming on the propeller's surface. Once applied, our coating creates a hydrophilic surface. Hydrophilic means that water is attracted to the surface, as opposed to being pushed away (hydrophobic). This counter-intuitive approach is successful because the coating creates a shield of water on the surface. This protects the propeller in two ways: the permanent water shield occupies the space where bubbles would ordinarily form; if bubbles do form near the propeller surface and implode, the force of the water entering the vacuum is dissipated from the water shield attracted to the coating. After 3 years, zero cavitation damage has occurred. Problem Solved.

Cavitation Diagram

1. Bubble forms on surface of propeller.

2. High pressure environment exerts force on the bubble.

3. High pressure causes bubble to implode, leaving a temporary vacuum.

4. Water in the high pressure zone is forced into the vacuum space left by the imploded bubble and slams into the surface at up to 60,000 PSI.

