

SheiKra

Roller Coaster Recoating Reaches New Heights at Busch Gardens

Each year tens of thousands of visitors flock to theme parks to enjoy the many attractions and shows, and to ride the heart-pounding roller coasters. That's why keeping the parks' rides and surrounding grounds aesthetically appealing and in top condition is priority-one for owners.

Paul Weigel, President of Service Painting Corporation in Tampa, Florida, is no stranger to theme park maintenance. For more than 30 years, park owners across the United States have relied on Weigel to keep their attractions safe and attractive. One of those parks is Busch Gardens®, also located in Tampa, which is home to the popular SheiKra® roller coaster; a curling ribbon of steel that climbs 60 meters (200ft) in the air and stops before plunging down a sheer vertical drop at 113kmph (70mph); around 360° loops; through an underground tunnel; and a splash landing that sprays water over 12 meters high (40ft), leaving riders breathless.

In 2011, park engineers decided that SheiKra was in dire need of coating maintenance, due to constant exposure to weather, humidity, and the intense Florida heat. Weigel was asked to prepare a recoating plan to restore the ride's signature red and blue colors, while providing long term corrosion protection. Included on his bid list of coating providers was AkzoNobel, with its International® protective coating range.

"I've always appreciated the performance integrity of International® coating systems. I had heard my sales representative talk about a new low VOC* single pack acrylic polysiloxane topcoat that was under development and I was extremely interested in what the product might be able to do for this project."

Although the new Interfine® 1080 topcoat was in final testing, it wasn't ready for public use. Nevertheless, Weigel's enthusiasm helped push the research and development production schedule forward in time for AkzoNobel's protective coatings Territory Manager, Benny Carter, to submit product mock ups to Weigel and park owners for review. Carter also recommended seven other International® protective coatings including Interzone® 954.

"Given the previous coating system's blistering, peeling, and delamination issues, we wanted to ensure long term corrosion protection with a coating that's rugged enough for use in offshore and chemical environments," said Carter. **"Interzone® 954's low VOC*, high solids single-coat formulation would also help reduce application time and materials costs."**

The project presented logistical challenges far beyond corrosion protection. The roller coaster is extremely tall, long and narrow, with multiple loops and turns. Not only would access be very difficult, another attraction ran

underneath one of the turns, requiring work to cease until the train passed through. A 100% containment area would also need to be constructed to enclose over 90 meters (300ft) of the ride's 'run out' area in order to protect the thousands of daily visitors and employees walking through the construction site to access adjacent attractions and restaurants. Finally, other scheduled park work would force all recoating to be completed within 35 days.

The International® protective coatings system was selected for the project in January 2013. Weigel began by constructing the containment tenting from fabric that car manufacturer's use for vehicle air bags. Following this, over 60 meters (200ft) of steel track was cleaned to remove the chlorine and chemical build-up from the 'pool' water inside the ride's splash zone. Next, crews conducted an SP-10 near white blast clean, before spray applying surfaces with Interplus® 356 epoxy based primer. The Interzone® 954 epoxy intermediate barrier coat was then applied, followed by the Interthane® 990 finish coat; tinted to the ride's notable red and blue colors using AkzoNobel's Chromascan® color tinting service. Corrosion was also found inside SheiKra's 106 meter (350ft) sheet pile tunnel. Since the tunnel was painted black, the same cleaning and coatings steps as in the 'run out' area were used, minus the topcoat.

Applicators then tackled the hand-application of Interfine® 1080 to SheiKra's 25,500m² (275,000ft²) of surface area comprising of tube columns, girders, piping, and rails. Accessing the highest points in the ride required an army of 21 man-lifts and a hydraulic crane weighing more than 200,000kg (225 tons). With the crane's 76 meter (250ft) boom, applicators inside a two-man basket could reach the ride's harrowing 70 meter (200ft) pinnacle – equal in size to a 20 storey building. In addition, small areas of rust were identified and repaired with an SP-3 power tool clean. Bare metal areas were then spot primed with Interplus® 356. Working in 12 hour shifts, it took a total of 7,000 man hours for crews to complete the recoating project. Quality inspections were then conducted by NACE Level 3 inspectors.

"Interfine® 1080 lived up to its promise," said Weigel. **"The product was easy to apply and combined with the entire coatings system, helped save approximately 15% in labor and materials costs. The high gloss finish was stunning and made this million dollar attraction look like it was finished with powder coatings."**

As theme parks seek new ways to attract visitors and expand service hours, owners will look to their supplier relationships for innovative ways to minimize maintenance downtime and maximize the park's aesthetic appeal to keep visitors "shrieking" for more.