

Rehabilitating Tanks Using Concrete Protective Liners

SURE-GRIP® CASE STUDY



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Project Overview

Project name: Rehabilitation of Tanks

Project date: 2009-2011

Products: Sure-Grip®

In 2009, Sure-Grip® concrete protective liners were used for tank rehabilitation in an anodic treatment of aluminum facility in Grünburg, Austria. Because of the liner's success, additional tanks were installed in 2010 and 2011.

Situation

Different chemicals are used in the aluminium anodising basins for surface treatment. In particular, chemicals such as sulphuric acid, chromic acid, detergents and other rinsing agents are introduced and applied.

The existing tanks had been in use for more than 30 years and were lined with standard polypropylene (PP) sheets on the interior to protect against corrosion. However, the constant contact with sulphuric acid vapor had caused significant corrosion over the years. Consequently, the load bearing capacity had been reduced, and the containment ability of the tank was in question. Because of this, the facility's management team decided to renovate the basins.

Solution

Planning began in May 2008, and it became immediately clear that one of the biggest challenges the project faced was the timeframe and availability for renovation. To ensure workplace health and safety, it was not possible to conduct renovation during production hours. Therefore, all of the work on-site had to be scheduled during winter holidays while the facility was shut down. Altogether, there were only three weeks available for renovation between December 2008 and January 2009.

The tanks had successfully used PP liner for the previous 30 years, which is why it was chosen again for the renovation. In particular, the project required a concrete protective liner made from PP-R. Sheets



Figure 1: Prefabricated basin.

with an 8 millimeter thickness were selected to reduce the risk of accidents and ensure additional security against abrasion. All attachments and built-in parts were also fabricated with PP-R sheets and pipes.

In order to meet the stringent timeline, the entire basin and ancillary parts were prefabricated. After the basin was fabricated with concrete protective liner, it was delivered to the facility and lifted into the existing concrete tank by a crane, where it was aligned to the inner formwork and cast into concrete.

Outcome

Due to the successful renovation of the first tank, which would not have been possible without the close cooperation between Heson and ourselves, we updated an additional six tanks from 2009 to 2011 and are in the planning stages for three additional renovations.

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