

Belzona coating for mill scale wastewater channel in steel industry

ID: 9656

Industry: *Steel & Metal Processing*
Application: *SHM-Solids Handling Machinery*

Customer Location: *Bruck an der Mur*
Application Date: *January 2022*

Substrate: *Concrete*
Products: *Belzona 1814*

Problem

After 6 years in service the customer, who fabricates wire, faced severe delamination on a concrete wastewater channel in the process of steel wire rolling.

The whole rolling machine has a length of about 165 m, and the scale wastewater channel is situated below it. During the rolling process high-pressure water descales the glowing wire.

Originally, the channel was already coated with a competitor product, and the structure of this solution consisted of a primer, middle layer and top layer.

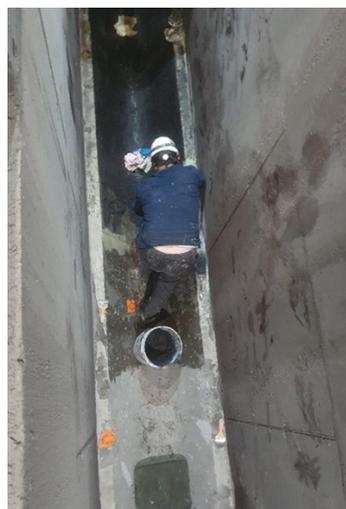
The competitor's repair was failing mainly between the concrete and the primer, but some delamination also occurred between the middle and top layer.



Damaged substrate



Application in progress



Application in progress



Finished application

Application Situation

Previously applied alternative solutions all failed very fast because of the highly abrasive environment. After testing the performance of Belzona 1814, the customer was so content with the solution that he wanted the entire channel protected with it. The repair could only be made during shut downs. For three consecutive years at each shut down, Belzona 1814 has been applied to further parts of the channel until the whole channel will be protected.

Application Method

First the failing competitor coating had to be removed.

To prepare the substrate for the Belzona solution, the concrete substrate was grit blasted.

When applying the coating, first a smaller amount of Belzona 1814 resins was mixed without the aggregate to prime the concrete.

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This improved the adhesion of the Belzona 1814 mixture with the aggregate to the concrete. Belzona 1814 was applied approximately 3-4mm thick.

Belzona Facts

The competitor's solution started failing very soon after being installed. The customer was actively looking for other solutions, but not much else could be used.

Hearing about the abrasion resistant Belzona products, they were willing to test them.

The customer specifically wanted to go with Belzona 1814 as it is cost effective (the channel is 165 m long).

Seeing the performance of Belzona 1814 after a while in service, the customer was very content with it and requested further segments to be coated.

For 3 consecutive years, an area of 30 to 40 m² per year was repaired and protected with Belzona 1814. This corresponds to 210-370 kg Belzona 1814. The product revenue for the whole channel being between 75-100K Euro and the project revenue being between 140-200K Euro.

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