

BELZONA PROTECTS AND REINFORCES THE WALLS OF AN 1800 SNOW RUN-OFF TUNNEL

ID: 7755

Industry:

Application: WPA-Wall Problem Areas

Substrate: Concrete

Products: * Belzona 4111 (Magma-Quartz) ,
* Belzona 4911 (TX Conditioner) ,

Customer Location: Washington, USA

Application Date: Summer 2018

Problem

The water rushing through this 9' tunnel carries everything from silt to large boulders. This takes its toll on the concrete walls that were originally poured in 1953. In order to protect the walls, there were steel plates mounted on the lower portions, and in 2001, Belzona 4111 was applied from the top of the steel section up from 18" to 4' depending on the location inside the tunnel. After 17 years of exposure to this environment, the Belzona 4111 was starting to show some wear.

**Photograph Descriptions**

- * 17 year old Belzona 4111 (Magma-Quartz) ,
- * Belzona 4911 (TX Conditioner) applied ,
- * New Belzona 4111 (Magma-Quartz) applied ,
- * Application complete ,

Application Situation

This 1800' tunnel is used to regulate melting snow run-off to avoid flooding in areas around the nearby mountains.

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ISO 9001:2015

FS 695214

ISO 14001:2015

EMS 695213

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Application Method

A modified version of WPA-4 System Leaflet was used for this application. An MBX Bristleblaster was used to abrade the areas where the new Belzona 4111 was going to overlap the old Belzona 4111. The concrete wall was cleaned and checked for any loose areas before application. The areas varied in height, so depending upon that, the square footage was marked on the wall to ensure proper coverage of the Belzona 4911. After applying several units of Belzona 4911, the Belzona 4111 was mixed and applied with a trowel at approximately 1/4" overall thickness. Due to the extremely rough surface of the concrete, there were many areas that were considerably thicker, but the finish was kept smooth to avoid causing a source for cavitation during operation.

Belzona Facts

Belzona 4111 was originally used in 2001 to provide protection. So after 17 years when the decision was made to "re-armor" the tunnel, the Customer once again decided to use Belzona 4111. This time the material was applied a little higher up the tunnel wall. It is now expected that the Belzona 4111 should provide at least another 15 to 17 more years of protection as it already has. Inspection in 2019 after 144 days of use, there was extremely minimal, but expected, loss of the Belzona 4111. The contractor and customer were pleased that the Belzona 4111 held up and performed as expected.

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