

Hot Ore no problem for Belzona

ID: 8112

Industry: Steel & Metal Processing

Application: VPF-Valves, Pipes and Fittings

Substrate: Carbon Steel

Products: * Belzona 1251 (HA-Metal) ,
* Belzona 1511 (Super HT-Metal) ,
* Belzona 1983 (SuperWrap II) Belzona 9381 ,

Customer Location: Aluminium Plant - Spain

Application Date: March 2018

Problem

The hot ore is highly abrasive, causing a loss of wall thickness in some areas of the T-section. Further degradation would result in catastrophic failure of the equipment and a forced shut down. Replacement is not an option as this would also require shut down.



Photograph Descriptions

- * Belzona 1251 (HA-Metal) being applied to reinforcement plate ,
- * Reinforcement plate bonded into place ,
- * Belzona 1511 used to create a fillet around the plate ,
- * Completed repair after wrapping with Belzona SuperWrap II ,

Application Situation

A T-section of pipework carrying hot aluminium ore, in large quantity and at high velocity. The Tee section is made from carbon steel, has a diameter of 40", and is part of the digesting system in the smelting plant. The heat is continuously above 130C during service, however the temperature of the external surface is 100C. The application must be done in service as shut down is extremely costly. Repairs must last for 2 months until a scheduled shut down, at which point the equipment will be replaced.

Application Method

The application was carried in accordance a modified version of Belzona System Leaflet VPF-11. A carbon steel reinforcement plate was pre-fabricated to fit the worn area of the pipe section. Preparation was carried out by grit blasting to achieve a near white metal finish and a surface profile depth greater than 75 microns. The reinforcement plate was bonded using Belzona 1251 (HA-Metal) to bond onto the hot substrate whilst in service. The edges were sealed and finished with Belzona 1511 to create a

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FS 695214

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smooth surface for the Belzona SuperWrap II system to be applied over. Belzona SuperWrap II with Belzona 1983 resin was used to encapsulate the area, adding further strength to the overall system.

Belzona Facts

The application was carried out whilst the equipment was still online, preventing a forced shut down. This allowed for the process to continue until the next scheduled shut down. The repair cost was significantly lower than the cost of a forced shut down, saving time, money and inconvenience.

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