

Rebuild and Protection of Discharge Elbows on a Francis Turbine

ID: 9047

Industry: Power

Application: VPF-Valves, Pipes and Fittings

Substrate: Cast Iron

Products: Belzona 1311 (Ceramic R-Metal), Belzona 1331, Belzona 1341 (Supermetalgilde), Belzona 2141 (ACR-Fluid Elastomer)

Customer Location: Hautes-Alpes

Application Date: September 2022

Problem

The discharge elbows of Francis turbines suffered severe cavitation-erosion in the inferior areas.



Damage caused by erosion-cavitation leading to a substrate loss greater than 5mm.



All elbows viewed together.



Post substrate rebuilding, the first coat of Belzona 1341 and Belzona 2141.



Final application showcasing Belzona 1431 and Belzona 2141.

Application Situation

Francis turbine elbows within a Hydroelectric Power Station.

Application Method

The areas affected by cavitation were reloaded using Belzona 1311. All elbows were then coated using Belzona 1331 or Belzona 1341. The most cavitation-intense zones were then further top coated using Belzona 2141 (an Anti-Cavitation Resistant Elastomer). The application was carried out in accordance with Belzona System Leaflet VPF-01 & VPF-02.

Belzona Facts

The customer wanted to negate having to replace the elbows - this would have to be every 10-years. By using Belzona solutions, we can perpetually rebuild and protect them over time.

For more examples of Belzona Know - How In Action, please visit <https://khia.belzona.com>

ISO 9001:2015

FS 695214

ISO 14001:2015

EMS 695213

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