

Belzona Protection of 180 Stay Vanes and Nearly 200 m² Bottom Water Guide against Erosion-Corrosion

ID: 10303

Industry: Power

Customer Location: India

Application: CEP-Centrifugal Pumps

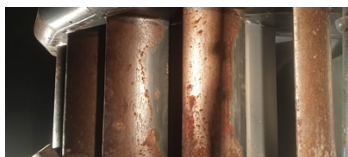
Application Date: February 2024

Substrate: Carbon steel

Products: Belzona 1311 (Ceramic R-Metal), Belzona 1321 (Ceramic S-Metal)

Problem

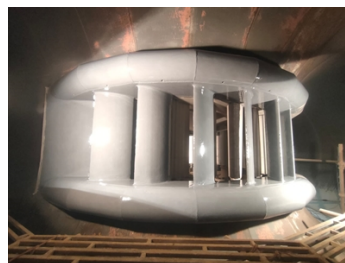
At a hydroelectric power plant in India with a generating capacity of 400 MW, the stay vanes and bottom water guide area of the hydro-turbine were suffering severe erosion-corrosion damage. The customer had previously relied on an epoxy coating system, but it delivered under-rated performance, poor adhesion, and inadequate erosion-corrosion resistance. The earlier coating also had to be reapplied during every shutdown for the last 4–5 years, so it did not deliver the expected service life or long-term protection.



Hydro-turbine were suffering severe erosion-corrosion damage



Surface was grit blasted to achieve the required surface roughness & cleanliness



Application of Belzona protective system



Closer view on the hydro-turbine after the application of Belzona solution for erosion-corrosion resistance

Application Situation

The existing coating needed to be removed. The stay vanes and bottom water guide area are critical hydro-turbine components, so reliable erosion-corrosion protection is directly linked to operational efficiency, shutdown planning and asset life. Approximately 180 stay vanes and nearly 200 square metres of bottom water guide area were treated with Belzona range of compounds.

Application Method

The application was carried out in accordance with Belzona Know-How Brochure CEP 3 and 5.

After blasting, the areas were cleaned and degreased thoroughly. Belzona 1311 (Ceramic R-Metal) was specified to rebuild and reclaim the worn and pitted areas, followed by the application of the Belzona 1321 (Ceramic S-Metal) as a protective coating to resist erosion-corrosion and extend the service life of the equipment.

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

Belzona products are manufactured under an ISO 9000 Registered Quality Management System.

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After the application, an inspection was carried out against the method statement, surface preparation requirements and the project quality assurance plan.

Belzona Facts

Belzona solution was proposed to the customer together with product demonstrations and a clear explanation of the rebuild-plus-protection logic, assuring long-term asset reliability. Belzona system addresses both substrate rebuilding and protective coating performance in one engineered solution.

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