

# BELZONA PROTECTION OF 180 STAY VANES AND NEARLY 200 M<sup>2</sup> BOTTOM WATER GUIDE AGAINST EROSION-CORROSION

ID: 10303



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## 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.

## 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.

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.

## INDUSTRY

Power

## LOCATION

India

## APPLICATION DATE

February 2024

## PRODUCTS

Belzona 1311 (Ceramic R-Metal)

Belzona 1321 (Ceramic S-Metal)

## SUBSTRATE

Carbon steel

## PHOTOS

1. Hydro-turbine were suffering severe erosion-corrosion damage
2. Surface was grit blasted to achieve the required surface roughness & cleanliness
3. Application of Belzona protective system
4. Closer view on the hydro-turbine after the application of Belzona solution for erosion-corrosion resistance

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