

BELZONA REPAIRS AND PROTECTS FRANCIS TURBINE

ID: 8706



PROBLEM

Over time, the turbine had suffered from serious erosion, cavitation and several parts of the vanes had deteriorated due to foreign matter entrained within the process. During an inspection, severe pitting was identified in the draft tube area.

APPLICATION SITUATION

Restoration of a 91Mw francis turbine within an Hydroelectric power plant.

APPLICATION METHOD

This application was carried out in accordance with modified system leaflets CEP-01, CEP-05 & CEP-10.
First, the turbine was grit blasted to SA2.5, achieving a surface profile of 75 microns before being cleaned with Belzona 9111. Once the surface was clean & dry, any severely pitted areas or damaged vanes were rebuilt with Belzona 1311 along with perforated metal sheets, restoring the turbine back to it's original dimensions. After the 1311 had cured, the surface was frost blasted (40 microns) before applying 2 coats of Belzona 1341. Finally Belzona 2941 conditoner and Belzona 2941 were applied to the the tips of the turbines vanes as these areas were most susceptible to cavitation.

BELZONA FACTS

The Belzons system was chosen as Belzona 1341 offered efficiency enhancement properties, combined with the anti-cavitation properties of Belzona 2141. The client expressed their happiness with the quality of the Belzona repair once complete and in opertaion.

INDUSTRY

Power

LOCATION

Hydroelectric Power Plant, Turkey

APPLICATION DATE

December 2021

PRODUCTS

Belzona 9111 (Cleaner Degreaser)
Belzona 1311 (Ceramic R-Metal)
Belzona 1341 (Supermetalgilde)
Belzona 2141 (ACR-Fluid Elastomer)
Belzona 2941 (Elastomer SP-Conditioner)

SUBSTRATE

Stainless Steel

PHOTOS

- 1.) Rebuilt damaged vanes with perforated sheet
- 2.) Cavitated vane tips repaired with Belzona 1311
- 3.) 1st coat of Belzona 1341
- 4.) Final application

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