

# BELZONA PROVEN CAVITATION PROTECTION TO FRANCIS TURBINE

ID: 1441

Industry: Power

Customer Location: Hydroelectric plant, Slovakia

Application: CEP-Centrifugal Pumps

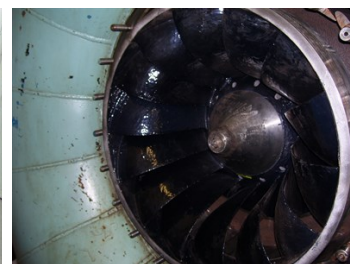
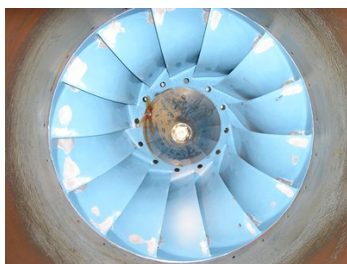
Application Date: 2004 and 2007

Substrate: Cast Iron

Products: \* Belzona® 1311 (Ceramic R Metal) Belzona® 1341 (Supermetalgilde) Belzona® 2141 (ACR Elastomer),

## Problem

Cavitation had caused erosion of the metal and loss of turbine performance. Belzona® 1311 and Belzona® 1341 had been applied in 2004, but had suffered further cavitation, so system upgraded by applying more cavitation resistant Belzona® 2141.



## Photograph Descriptions

- \* Cavitation damage to turbine runner ,
- \* Belzona® 1341 showing some cavitation damage ,
- \* Belzona® 2141 being applied to the runner ,
- \* After 24 months service Belzona® 2141, inspection shows no further cavitation damage ,

## Application Situation

Francis turbine runner, 800mm diameter, 40-50m head and optimum 600rpm. Power output 2.1MW with 4m³/s flow rate.

## Application Method

Application was carried out in accordance with Belzona Know-How System Leaflets CEP-3 and CEP-10

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  
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## Belzona Facts

Inspection of the Belzona Ceramic coating in 2006 showed damage from cavitation, so specification was changed to Belzona® 2141. Further inspection after 2 years showed no damage on the turbine runner.

In 2013 small areas of coating damage were repaired with further Belzona 2141.

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