

BELZONA PROVEN CAVITATION PROTECTION TO FRANCIS TURBINE

ID: 1441



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.

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

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.

INDUSTRY

Power

LOCATION

Hydroelectric plant, Slovakia

APPLICATION DATE

2004 and 2007

PRODUCTS

Belzona 1311 (Ceramic R Metal) Belzona 1341 (Supermetalgilde) Belzona 2141 (ACR Elastomer)

SUBSTRATE

Cast Iron

PHOTOS

1. Cavitation damage to turbine runner
2. Belzona 1341 showing some cavitation damage
3. Belzona 2141 being applied to the runner
4. After 24 months service Belzona 2141, inspection shows no further cavitation damage

For more examples of Belzona Know-How in Action, please visit khia.belzona.com

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