

Belzona 1111 Machined Shaft Repair

ID: 9458

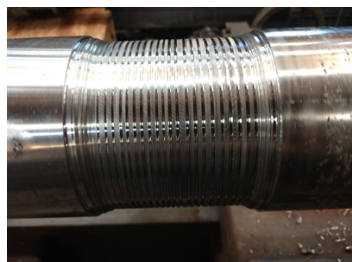
Industry: *Marine*
Application: *MPT-Mechanical Power Transmission*

Customer Location: *Washington*
Application Date: *May 2019*

Substrate: *Carbon steel*
Products: *Belzona 1111 (Super Metal)*

Problem

The propulsion shaft on a small fishing vessel had some corrosion in the area where the seal mounts.



Shaft is mounted on a lathe, and the area has been machined down and roughened, ready for the application.



Belzona 1111 applied while the lathe was turning slowly.



Machining the Belzona 1111 to the proper dimension.



Application completed, fully machined, and dressed down with emery cloth.

Application Situation

There was some corrosion located on the propulsion shaft on this small fishing vessel. The damage was located where the seal is mounted that keeps the sea water on the outside of the vessel. Failure of the surface here would eventually lead to a failure of the seal and would result in water leaking into the vessel. Using Belzona 1111 allowed for a repair to take place inside of one day, and allowed the vessel to be put back together sooner and returned to service without additional cost of extended dry-dock fees.

Application Method

A lathe was used to prep the area, as well as to remove the excess Belzona 1111. When the Belzona 1111 was applied, it was applied with the lathe turning slowly using a short bristled brush, first scrubbing the material into the roughened surface, and then slowly applying thin layers until the application area was filled out beyond the diameter of the shaft. Applying it in this manner helps to avoid air pockets which result in voids that need to be filled once the shaft is machined down. Should any voids appear during the machining process, additional Belzona 1111 is applied to fill them, allowed to cure, and machined again to the final dimensions.

Belzona Facts

Welding would cause heat stress. On a smaller shaft of this size, that would likely cause the shaft to warp. The shaft would then need to have the heat stress relieved by baking the entire shaft and slowly cooling all at once, and then machined down. Since the facility does not have that capability, this would have required shipping the shaft to another location, which would have resulted in several days of delay and extensive dry-dock expenses, and more days not operating and catching fish to sell.

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ISO 9001:2015
FS 695214
ISO 14001:2015
EMS 695213

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