

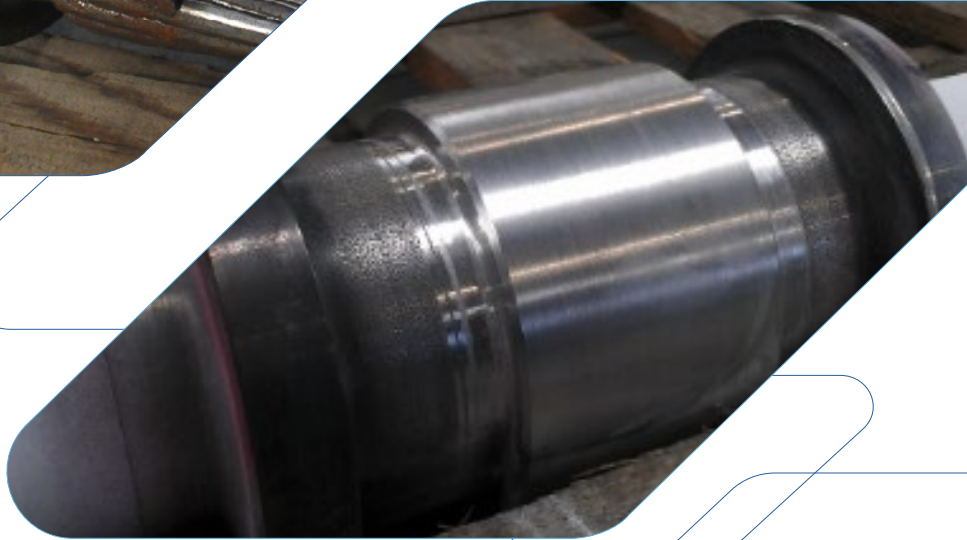
CASE STUDY GSGMWH2023

Reclamation of Gear Shafts

Superior wear life achieved with Laserbond® Cladding



Before: Damaged bearing
journals and gear teeth



Built up with Laserbond® Cladding

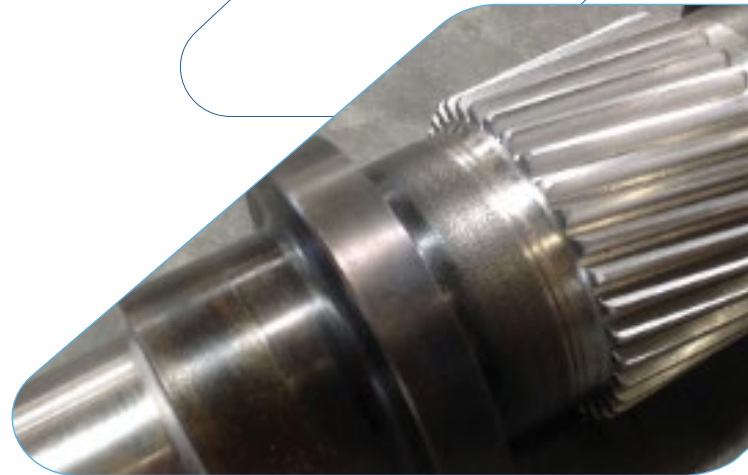
The Problem

Customers frequently come to us with damaged bearing journals and gear teeth. Our customers experience ongoing wear issues on the bearing journals, which in turn means that the shaft is also not performing optimally.

The Solution

Our customers seek a way to prolong component life and a great way to achieve superior wear life is with Laser Cladding. Laserbond® cladding is a process to apply metal coatings using a laser as heat source. The well-focused laser beam melts the base material and an additive powder to create a wear and corrosion resistance overlay.

In these examples we removed the damaged area by machining, then built up with Laserbond® Cladding and then cut the gear teeth and finish ground the bearing journals. After Laser Cladding gear teeth were cut as per the profile and specifications provided by our customers.



After: Laserbond® Cladding

After Benefits and Feedback

Key Benefits

Unlike thermal spraying or chrome plating, Laserbond® cladding provides a strong metallurgical bond with minimal dilution of the base material, exceptional thickness control, and a small heat affected zone. The automated laser cladding system ensures the process can be precisely repeated, resulting in a high quality homogeneous coating deposition critical in high demanding environments. As clad material can be varied, critical magnetic and non-magnetic components can be protected with optimal coatings.

The key benefits of Laserbond® Cladding include:

- Greater production with fewer maintenance shuts,
- Lower operating costs from purchasing replacement parts,
- Greater protection of the main rotating assembly,
- Lower risk of an unplanned maintenance event, and
- A smaller carbon footprint through fewer replacements

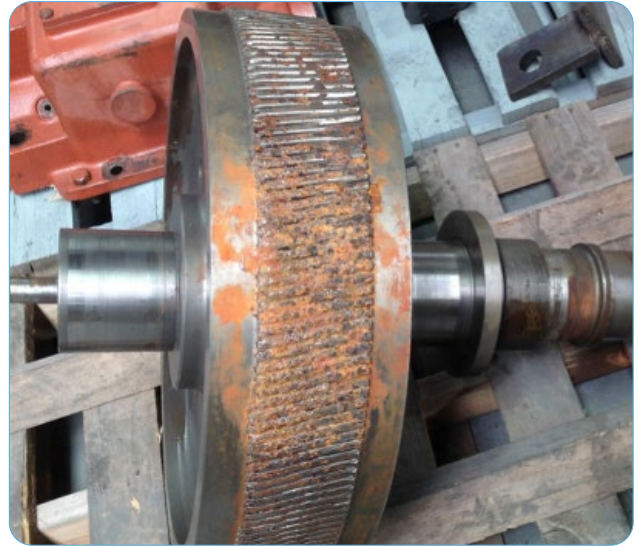
The Outcome

Customer feedback:

'The customer was very satisfied with the solution of Laserbond® cladding to prolong the life of the components and ultimately achieve superior wear life'.

About Laserbond

We are a specialist surface engineering company, founded in 1992, that focuses on the development and application of materials, technologies and methodologies to increase operating performance and wear life of capital intensive machinery components. Our surface engineering technology has applications across many industries, such as resources and energy, agriculture, advanced manufacturing, defence and infrastructure construction.



Damaged gear teeth of the mating gear



Damaged area is removed by machining built up with Laserbond® Cladding



New gear teeth were cut as per the profile given the customer



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