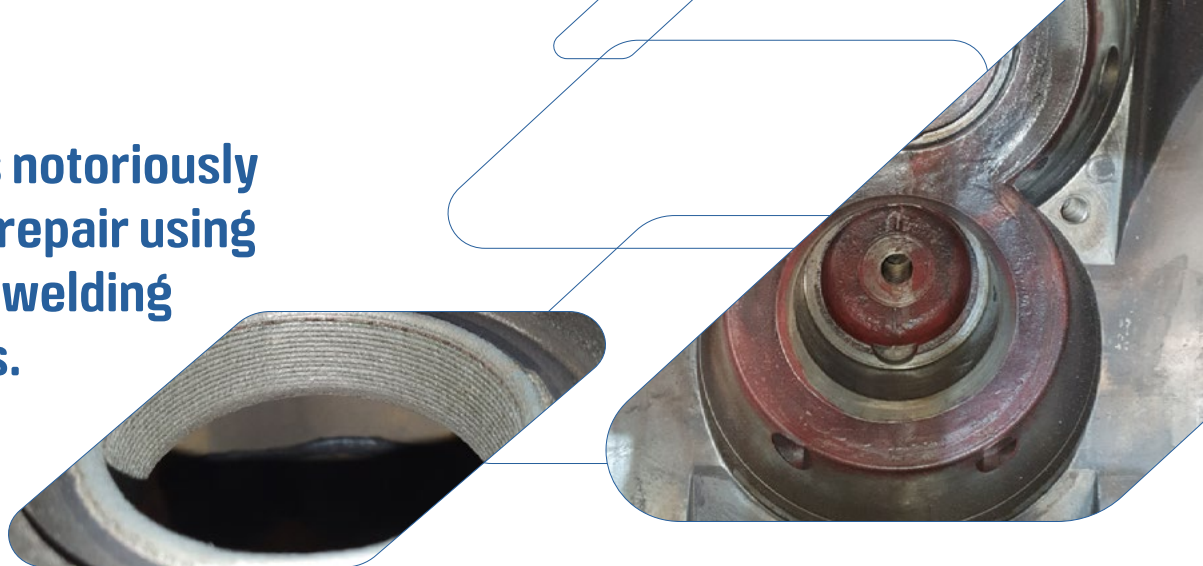




PRODUCT APPLICATION - CIGMWH2021

Laserbond® Cladding Cast Iron

Cast Iron is notoriously difficult to repair using traditional welding techniques.



White Cast Iron in particular has been deemed unweldable due to damage from heat input creating cracking, fragility and porosity. The minimal, localised heat input of laser cladding overcomes these problems meaning once unrepairable parts can now be reclaimed and restored to better than new.

Laserbond® Cladding Process

Laser cladding is a process to apply metal coatings using a laser as the heat source. The laser melts the base material and an additive powder, in a very focussed pool, to create a wear and corrosion resistant overlay. Unlike traditional welding, laser cladding provides a metallurgical bond with minimal dilution of the base material, exceptional thickness control, and a small heat affected zone. The resulting metallurgical bond from laser cladding is also much stronger and impact resistant than the chemical bond formed from plating and the mechanical bond formed from thermal spray surface coating techniques.

Continuous Improvement

Laserbond continue to develop and improve our cast iron cladding capability. Recently, we have been working closely with one of our key customers to develop a customised solution for a rail application. A particular key drive train component was no longer manufactured and stocked by the OEM so the rail operator was facing a fleet upgrade unless the worn part could be repaired. After extensive internal and external testing, we developed

cladding results and supporting procedures which were reviewed and approved by the customer to deliver a safe, reliable and improved quality of part after cladding. This component is now back in service on locomotives, safely, running across the country.

All our continuous improvement work means that today we can successfully Laserbond® Clad all types of cast irons with the same superb results.

To find out more about extending the operating life of new and used parts, or about the remanufacture of components and equipment, call or e-mail us at info@laserbond.com.au

Advantages of Laser Cladding Cast Iron

- Laserbond® Cladding results in a metallurgical bond between the coating and substrate
- Cast iron components can be laser clad with targeted additive materials to deliver fit for purpose function in the specific operating environment. This could target abrasion, corrosion and/or impact resistance, so the clad component can last many times longer than with other reclamation coatings and even the original part, resulting in significant total life cycle cost savings
- Localised, low, heat input significantly reduces the negative impacts of heat on the substrate, reducing the chance of cracking and porosity
- The process of reclaiming cast iron parts is environmentally friendly, reducing raw materials usage, waste management, pig/crude iron production, and, therefore, energy consumption
- Studies have shown that energy consumption to produce a new part is up to 30 times greater than that for reclamation



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