



Underground mining road header boom after laser treatment.



Temperature sensitive components are repaired with minimal risk using Laserbond's deposition process.



Three times longer life, 7.5% total drilling cost savings, and increased penetration rates were the key findings from this independent DTH hammer trial.

## Faster drilling, slower wear and fewer change-outs result in lower drilling costs.

Since the initial 2015 comparative DTH Hammer drill trial in Queensland, our new LaserBond clad drill hammers have been put to the test in various ore bodies and ground conditions around Australia and overseas.

Drilling contractors and miners have been keen to explore whether the improvements in wear-life and cost reductions delivered at that first trial can be replicated on their sites.

And it appears that is exactly what's happening. In fact one drilling contractor commented that



not only was wear-life significantly improved but the drill holes were being drilled faster – even further cutting costs.

With our ongoing collaboration with customers we're continuing to develop our game-changing LaserBond DTH Hammer drills so we can confidently offer a superior, reliable product with the certainty that it will deliver faster drill holes, longer wear-life and seriously lower overall drilling costs. Find out more at:

[www.laserbond.com.au/hammertrial](http://www.laserbond.com.au/hammertrial)

**Just pick up the phone or email us now to arrange your own risk free trial.**

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PRODUCTIVITY | INNOVATION | CONSERVATION

# New laser hammers last longer

LASER cladding has received significant attention and development in recent years due to its unique features and capabilities in various industries involved in metallic coating, high value component repair, prototyping, and low volume manufacturing.

Utilising a laser to deposit a tungsten carbide (WC) metal matrix composite (MMC) overlay enabled the deposition of significantly smaller WC particles, with minimal heat effects evident.

Therefore, concentration of WC can be increased significantly, the mean free path between the WC particles is smaller, and the wear resistance is considerably improved.

This has been proven with the company's recently released DTH Hammers lasting significantly longer to reduce overall drilling

costs. The 'mean free path' is the critical parameter as it's the MMC (cobalt, nickel or similar) that wears - not the tungsten carbide.

The smaller the average size and the higher the volume percentage of WC particles within a deposited layer delivers its abrasive and erosive wear resistance and the metallurgical bond allows applied layers to be used in high impact, heavily loaded situations with no risk of spalling or separation of the overlay.

The infinite controllability of the laser energy allows minimisation of undesirable thermal decomposition of hard phases such as carbides, resulting in optimum wear resistance.

### New advantages

LaserBond's new cladding technique has proven advantages over previous methods.

It has higher deposition rates with infinitely variable energy adjustment; and extremely low dilution with base material enabling very thin layers.

With almost non-existent heat affected zones the LaserBond cladding has no effect on the structural performance of substrate with negligible distortion enabling cladding of dimensionally sensitive components.

At a comparative trial in southern Australia in 2015, LaserBond's new DTH Hammer lasted more than three times longer than the 'industry standards' it was competing with.

Under the sole control of Brisbane-based mining consultancy Xtega Pty Ltd, this independent comparative trial

was held at a hard rock metalliferous mine, selected for its highly abrasive rock with an indicated MPa between 90 and 200.

"There is an irrefutable decrease in the rate of abrasive wear which results in an increase in the life of the LaserBond hammer," Xtega concluded.

Other benefits included improved mechanical availability and efficiency; higher impact and penetration rates; improved site and operator safety; and less downtime for changeouts - along with significant cost savings.

The company's knowledge of the cladding process, associated metallurgy and its end use application environment allows it to offer a zero risk trial for their new DTH Hammers.