LASERBOND®

PRODUCTIVITY | INNOVATION | CONSERVATION

LASERBOND

Composite Carbide Long Life Steel Mill Rolls

Steel Mills around the world are now experiencing the significant benefits of installing LaserBond® Composite Carbide Rolls - huge increases in service life and dramatic decreases in maintenance costs.

LaserBond® re-engineers and fully manufactures a comprehensive range of Steel Mill Rolls and Roll Shells (cantilever, run-out, aligning, persuader, etc.). Our rolls are manufactured and surface engineered, with a Composite Carbide, to the customers exact specifications.

Steel Mills around the world are now experiencing the significant benefits of installing LaserBond® Composite Carbide Rolls. These Rolls and Shells, available in all lengths and diameters are delivering exceptional increases in service life and performance. As well as corresponding dramatic decreases in maintenance costs.

LaserBond® Composite Carbide Rolls and Shells can be purchased with the confidence of knowing that they can replace existing OEM rolls and deliver significant maintenance and total life-cycle cost savings.

Our Rolls are designed for installation without retrofitting or modification meaning the transition to LaserBond is simple.

Steel Mills using the LaserBond® Long Life Rolls have all reported exceptional in-service performance.

Reporting up to 20 times longer life than standard Rolls through superior heat and abrasion resistance, outperforming every OEM roll.

LaserBond® Composite Carbide Rolls advantages are delivered through our proprietary surface engineering deposition process. This process enables the deposition of metallic or metal matrix composite layers with a full metallurgical bond, utilising an accurately focussed and infinitely controllable high power laser beam. The laser beam creates a very small weld pool on the surface of the area to be clad and enables precise control of the heat transfer into the base material and the deposited layer. It avoids the risks of heat distortion and other undesirable heat effects, such as decarburisation and thermal cracking.

Steel Mini Mill Rolls

Mini Steel Mills use many types of Rolls for forming and transporting rebar during production. The movement of the rebar over the rolls at high speed causes friction and deep grooves wear into the standard OEM Rolls. These deep wear grooves on the Rolls cause product to hang or stick and not release creating a 'cobble' or jam. The wear grooves also cause rubbing on the rebar profile, damaging the finished product, resulting in rejected product. Driven table Rolls convey the newly formed, hot rebar from the finishing stand at high speeds to the cooling beds before being cut to length. Due to the wearing of the Rolls, constant and regular maintenance is necessary to replace worn rolls. This results in high maintenance costs and downtime.

The LaserBond® Composite Carbide cladding is significantly harder and more impact resistant than OEM Rolls, significantly reducing Roll wear.

Features and Benefits of LaserBond® Composite Carbide Long Life Steel Mill Rolls & Mini Rolls

- Surface texture finished to individual customer requirements from 'as clad' with a roughness similar to coarse emery paper, to a super finish Ra 0.2-0.5 micron
- Coarser finish offers excellent 'grip where necessary'
- Super finish offers mirror finish – no scratches on the finished product
- Roll Shell manufactured to replace OEM Shell
- Manufactured to customer specifications
- Product coming off the Rolling Mill generally defaults to one side of every Run-Out Roll increasing the wear factor
- A LaserBond® surface engineered Carbide Composite produces Rolls with up to 20 times longer life
- Outstanding resistance to frictional wear and operating pressure
- Rolls are supplied with Part No. laser engraved on them for ease of identification and traceability
- All shipping costs including freight and duty (where it applies) are rolled into a single quoted price covering door to door delivery to make doing business easy
- Rolls are delivered in sturdy fumigated wooden crates designed to be lifted by forklift.

About LaserBond®

We manufacture, repair, reclaim and enhance the performance of high wear critical metal components in a range of capital intensive industries. These include steel making, mining, minerals processing, manufacturing, power generation, transport, marine, plant and machinery, fluid handling, agricultural sectors and many others.

In Australia we became the first specialist surface engineering company operating a laser and now have 21 years' experience. Our vast proficiency means materials are selected, customised and applied to deliver the very best properties of abrasion, impact, pressure, product interface and heat resistance in the customer's specific operating environment.

We are also pleased to advise that we won 2023 AIST (Association for Iron and Steel Technology) Rolls Technology Best Paper Award for our technical paper entitled "Lifetime-Extended Steel Mill Rollers Produced by Laser Cladding".

Established in 2007, this award is presented to the author of a paper, selected by the AIST Rolling and Processing Technology Division, and judged to be the best paper submitted to the Rolls Technology Committee.

What our customers are saying:

"LaserBond have met and exceeded our KPI's as a supplier at every level, including cost reduction, on-time delivery, QA/QC Inspection" and "in every case the LaserBond have far exceeded our expectations in terms of the service life we are now achieving".

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Cost Benefit Analysis

This cost benefit analysis is based on Table rolls in a steel mini mill.

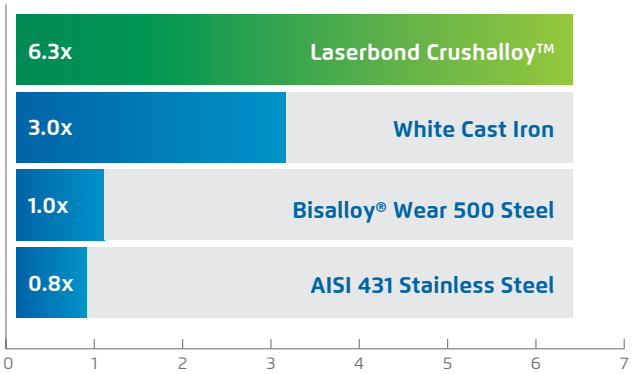
		Original OEM Roll	LaserBond® Clad Roll	Savings Multiplier
Roll Life (Tonnes)		55,000	1,980,000	
Roll Cost ($)		$620.00	$1,140.00	
Cost per Tonne - Full Line	Rolls in Line	$1.35	$0.07	**19.6**
Roll Life Weeks		7	234	
Cost per Week - Full Line	120	$11,429.00	$584.00	**19.6**
Operational Costs per annum		$594,286.00	$30,348.00	
Operational Cost Saving per annum				**$563,938.00**

Abrasive wear is a common form of material loss for parts in contact with soil, ore, minerals, rocks, slag, and other hard particles. In order to reduce wear and extend wear life, hard, wear-resistant materials are selected for components subject to high abrasion.

The graph compares the wear resistance of LaserBond's CrushalloyTM with white cast iron, the wear plate material Bisalloy® 500 and the martensitic stainless steel ASI 431. The wear resistance of CrushalloyTM is 6.3 times higher than Bisalloy®, and more than twice as high as a white cast iron.

ASTM G65-A - ABRASIVE WEAR TEST

University of South Australia | Future Industries Institute



WEAR RESISTANCE FACTOR

Our Vision

Since 1992 we have pursued a vision of increasing component performance and extending plant and machinery life through the research, development and application of advanced surface engineering technologies. Capital-intensive industries rely on plant and equipment performing at peak efficiency for the longest possible period to maximise productivity.

Our capabilities incorporate a unique range of advanced surface-engineering technologies and services designed to enhance the life and performance of machinery, equipment and production-vital components.

Our sites in Sydney, Melbourne, Brisbane and Adelaide offer a wide range of in-house specialised service capabilities to enable large and complex projects to be completed quickly and reliably.

LaserBond Limited: ABN 24 057 636 692

NSW: 2/57 Anderson Road,
Smeaton Grange, NSW 2567 Australia
p. +61 2 4631 4500

SA: 112 Levels Road, Cavan,
South Australia 5094 Australia
p. +61 8 8262 2289

VIC: 26-32 Aberdeen Road,
Altona, Victoria 3018 Australia
p. +61 3 9398 5925

QLD: 74 High Road, Bethania,
Queensland 4205 Australia
p. +61 3 9398 5925

info@laserbond.com.au
www.laserbond.com

APPROVED COMPANY ISO 9001 Quality Management Systems — QMS Certification Services

APPROVED COMPANY ISO 45001 Occupational Health & Safety Management Systems — QMS Certification Services

APPROVED COMPANY ISO 14001 Environmental Management Systems — QMS Certification Services

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