



**an excellent choice**



Vision and Mission..... 4  
 A history of innovation..... 5  
 Developing new processes ..... 6  
 Pioneering engineering materials..... 7  
 Creating deposition methods ..... 8

Services we offer ..... 9  
 Repair and remanufacturing..... 10  
 Lean 5S manufacturing ..... 11  
 Products we make..... 12  
 Game changing technology ..... 13

Technology we licence ..... 14  
 Complete package..... 15  
 Industries we serve..... 16  
 Reducing downtime..... 17  
 Lowering maintenance costs..... 18

# Contents

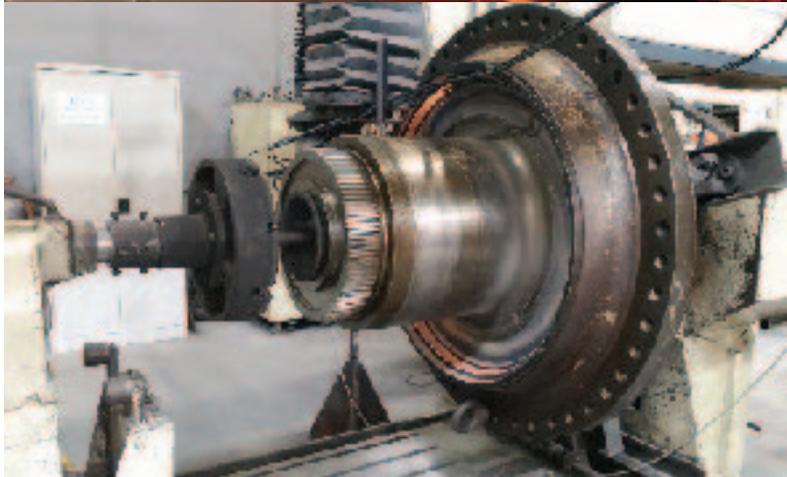
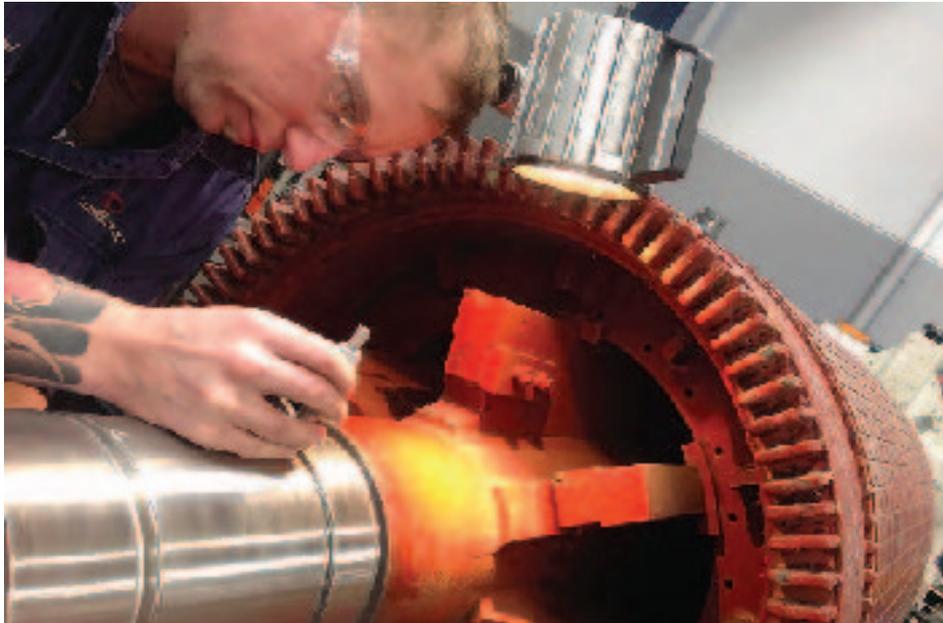


- Improving productivity ..... 19
- Values we embrace ..... 20
- Our people and culture ..... 21
- Leadership team ..... 22
- Integrated management systems ..... 23



For 25 years LaserBond has been researching, developing and applying innovative surface engineering technologies to extend plant and machinery life, improve resistance to wear and corrosion, increase reliability and reduce maintenance and replacement costs. We focus on heavy industry sectors that embrace the productivity, innovation and sustainability benefits delivered by our products, services and technology.

**Surface engineering is in our DNA**



***Our vision*** is to be a global leader in the research, design and implementation of advanced surface engineering technologies and innovations that tangibly reduce unit operating costs and impact on the environment, by extending the wear and operational life of production-vital equipment.

***Our mission*** is to optimise the capacity and capability of our facilities and staff to deliver innovative services and products and build on our core competency of surface engineering to diversify and grow our business.

## Vision and Mission



The company is a classic grass roots family-founded business. Gregory Hooper, whilst working as a leading technical specialist in welding applications and metallurgy, foresaw a services company that could embrace new metal spray deposition technology. With family support, Greg founded the company as HVOF Australia P/L in 1992, working from a small workshop in Ingleburn, NSW. His brother, Wayne, joined the business in 1994. It relocated to larger premises in

Smeaton Grange, NSW in 2012. Cavan SA was established in 2013. It was ASX listed as LaserBond Limited (ASX:LBL). The company was at the forefront of the development of the High Pressure High Velocity Oxy Fuel (HP HVOF) process. This process sprays semi-molten droplets of coating material at extremely high velocities, resulting in coated surfaces of the highest possible quality and performance to improve durability, resistance to corrosion, or both.

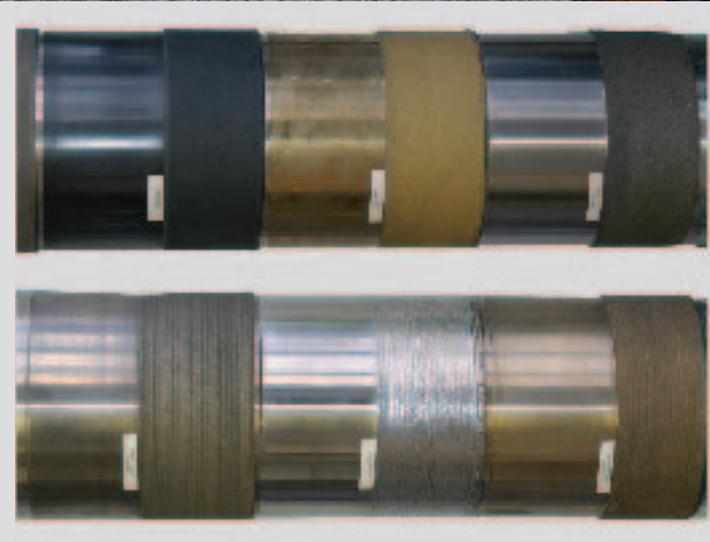
## A history of innovation



We have an extensive range of technologies that apply to a wide range of metallic and non-metallic materials. This is supported by a well-equipped metallographic laboratory. Our innovation in laser cladding dates back to 1999 when we built one of the world's first high-powered laser cladding systems (6kw). The company has now built several laser systems. The most recent is a 16kw unit integrated into an advanced robotic manufacturing cell. This is coming online late 2016. In 2014 our team lodged patent

applications for a revolutionary new 'LaserBond deposition method' that enables extremely thin layers of metallurgically bonded cladding to be laid down at low heat without intermetallic dilution or porosity. A suite of gas quenched vacuum heat treatment furnaces were installed in 2015 enabling work in post-coat fused alloys. Our formal R&D collaboration with UniSA accelerates and encourages this corporate passion for innovation which is endemic throughout the LaserBond organisation.

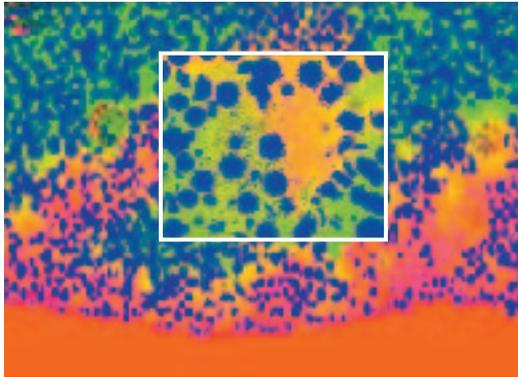
## Developing new processes



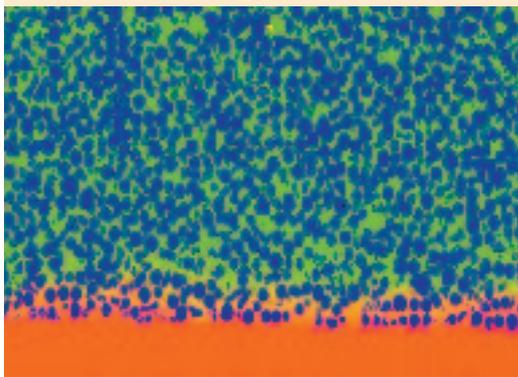
We have a dedicated R&D team that is backed by more than 30 years experience in industrial tribology and the impacts and effects of abrasion, erosion and corrosion. LaserBond's material scientists work with customers to develop a tailored solution for their specific surface engineering requirements. We learn about the environment the coating will be used in to design the properties required to withstand that environment. LaserBond applies its extensive materials engineering

expertise to design a coating and application method solution to fulfil components duty. We have access to a materials and alloy database of some one million variants. Combining a well engineered coating material and component design delivers longer life higher performance outcomes at least cost. Our designed products work. They are proving themselves in the industrial marketplace. They last longer, perform better and, overall, cost less to own, operate and maintain.

## Pioneering engineering materials



Normal Laser Cladding of composite layers produces undesirable dilution and decarburization of the carbide phase, thus reducing performance.



New patented\* LaserBond® deposition technology provides a metallurgical bond without the debilitating dilution effects, and enables the deposition of layers with a higher concentration of retained hard phases.



Our R&D team invented a new method for depositing thin, metallurgically bonded coatings to structural substrate metals using laser systems. Working with scientists at the Australian Synchrotron the outcomes are shown (above) by way of some advanced imaging obtained using the Scanning X-ray Fluorescence Beamline Microscopy. It has provided unprecedented visual proof that LaserBond's new method is far superior to that which had been used previously. This

opens up more industrial applications to the benefits of surface engineering to deliver superior performance over homogeneous cast materials. LaserBond utilizes a range of HP-HVOF, arc spray, air plasma, wire & powder and laser systems for coating applications. The systems engineering team is also developing advanced additive manufacturing processes that incorporate multi-axis robotics to exploit new opportunities in product manufacturing.

## Creating deposition methods



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. Laser cladding and thermal spraying technologies form the focus of our 'Service Division' business. Our high capacity welding, machining, heat treatment and surface finishing provide the complete in-house service suite.

Capital-intensive industries rely on plant and equipment performing at peak efficiency for the longest possible period to maximize production. We offer tried and tested alternatives to simply replacing expensive equipment that has worn or been damaged. Fretting and wear of bearing surfaces, wear damage to drive splines, thrust bearing faces, broken gear teeth can all be repaired using the laser cladding process. Performance will be good as or better than new.

## Services we offer



Repair, refurbishment and remanufacturing of worn or damaged components gives better performance and cost outcomes. Customers benefit from equipment and components going back into service faster, at less cost and often to better than OEM specification. This delivers a significant positive bottom line impact with lower ongoing maintenance costs, reduced operating downtime and extended service interval between overhauls.

LaserBond's advanced materials and surface engineering technologies also lessen employee exposure to safety hazards and reduce environmental waste. Scrapping worn equipment comes at a high cost to the environment. Repair and remanufacturing saves waste and lowers carbon footprint – e.g. new parts cost 30 times the energy. So we're helping the environment in two ways - our processes use far less fossil fuel energy and we deposit less waste.

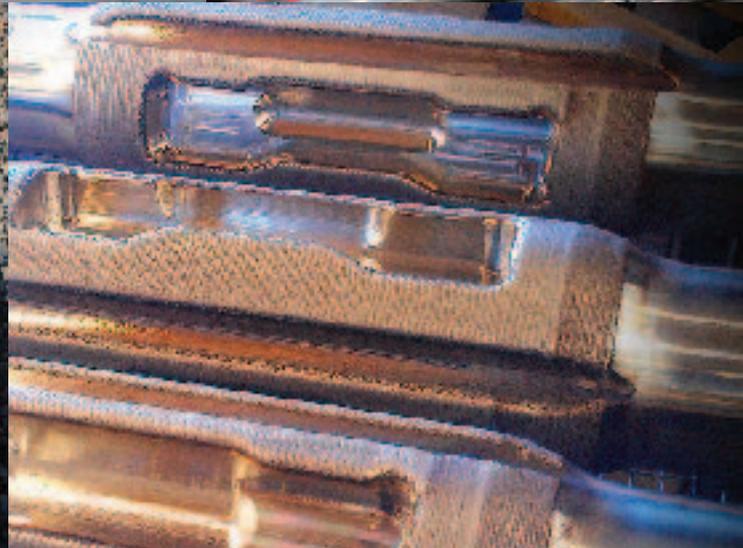
## Repair and remanufacturing



LaserBond's facilities in Sydney and Adelaide offer a wide range of in-house specialised service capabilities to enable large and complex projects to be completed quickly and reliably. Our facilities have adopted the principles of Lean 5S Manufacturing, a methodical team-based approach to organising our work space to ensure that it is tidy, arranged ergonomically, efficient and capable of repeatable, quality output. Since full implementation LaserBond

has realised measurable improvements in quality, on-time delivery, waste and organisation culture. Lean 5S is applied throughout the company from the front desk to the despatch dock. It ensures that our customers get the quality they demand. Our performance under Lean is visually monitored through several publicly available KPI's, including on-time delivery, production to specification, energy efficiency as well as our safety, environment and innovation goals.

## Lean 5S manufacturing



Twenty five years of servicing a range of industries exposes LaserBond to many opportunities to improve performance of high wearing components. We design and manufacture a range of specialist products that embed our surface-engineering technologies, more and more commonly for OEM partners who utilise our expertise in metallurgy and powder coating application technology.

Our products replace the limiting component of larger machine systems, usually offering life extension of two - five times. By delivering far superior wear life and operating efficiency, our direct and OEM customers enjoy less unplanned and expensive downtime, lower unit costs and higher productivity. An additional benefit is that safety for all involved in the operational process is generally improved as well.

## Products we make



Application of LaserBond's surface engineering expertise delivers game-changing products and new processes. The development of our new laser deposition method enables fast cladding of thinner films of tailored wear resistant non-homogeneous alloys. These can be applied internally and externally to suit many end-use applications. This game-changing thinking delivers economic hard-chrome

replacement for hydraulic cylinders. A natural extension of integrating multi-axis robots positioning the laser and work piece will be to '3D-print' a complex component entirely out of high wear resistant materials. Globally this type of low volume manufacturing is rapidly being adopted. The possibilities for far superior and more economical production of certain pieces this way are limited only by imagination.

## Game changing technology



LaserBond builds its own cladding systems because there is no off-the-shelf integrated solution available for the heavy industry sector. We have developed efficient high capacity systems that incorporate laser power units, multi-axis robotic cladding, multi-axis component handling, improved safety and an ancillary equipment package. Our technology licensing

program offers a tailored equipment package fully integrated for an industry or market application with exclusive access to LaserBond surface engineering research and technology. It also includes regular updates on new and/or improved cladding materials and techniques, a range of specialist technology, hardware and equipment and provides full off-site training.

## Technology we licence



With each installation LaserBond engineers and technicians do on-site commissioning and further application training. A dedicated LaserBond 'Technology Package' enables our customers to become productive by making money far faster than researching to buy the hardware – integrate the components – develop the software systems – learn to

operate the system – understand the metallurgy – build the QA process – and many more 'experience' steps that LaserBond has learned over time. Being a pioneer in cladding technology and working across a wide range of demanding Australian industry applications makes LaserBond the go-to company to ensure systems are designed to suit customers' specific industry needs.

## Complete package



LaserBond's surface engineering technology continues to deliver game-changing component and equipment performance across an extensive range of industries for customers who seek improved wear and corrosion performance at much lower cost.

#### **Mining**

Underground or open pit. Long wall or high wall. Mining involves equipment and component wear. Headers, Haul trucks, G.E.T., Grader blades, Cylinders, Pumps, Valves; the list goes on. Productivity depends on extending availability of high performance machinery.

#### **Drilling – OG&E**

In the LaserBond range of down-the-hole hammers, bits and consumables, we have brought together a quarter of a century of research and understanding into the mechanical effects of component wear. We have designed, developed and manufactured – from the ground up – a totally new approach to DTH consumables that delivers 3 times longer life - this was proven in independently controlled field trials in 2015. Customers using above and below ground components in oil, gas and energy exploration and production also benefit from our attention.

## Industries we serve



In fluid-based systems, product or process leakage can create environmental issues. LaserBond engineers develop solutions for high wearing components that become the weak link or determining factor for scheduled and unscheduled maintenance shutdowns of process plant.

**Power, plant and transport equipment**

We apply innovative surface technologies to components that last longer, increase production yield, reduce downtime and maintenance costs – improve productivity.

**Power generation**

Power generation needs consistent performance and reliability from plant and equipment that is subject to high-pressure and high velocity loading. This type of machinery is also subject to breakdowns. These can sometimes occur in boilers and feed pumps, or turbines and generating systems, or with vital components in coal-fired power generation. Also with components exposed to abrasive and corrosive particulate matter and gases. These are all components that must maintain performance levels to serve downstream customers. LaserBond's technology and experience can play a vital role.

## Reducing downtime



#### **Transport and marine**

Effective and efficient transport is reliable and consistent. National and international shipping. Land transport. Public transport. Loading and unloading vehicles and equipment. Off-road haul trucks. Forklifts and work site vehicles. Achieving reliability means limiting breakdowns of vital components. Corrosive marine environments and heavy duty applications especially benefit from LaserBond's surface engineering technology. Large machine parts can be remanufactured with long life metallurgy.

#### **Plant and machinery**

Laser cladding is ideal for refurbishing and repairing broken and worn machinery - gear teeth, housings, thrust bearings, drive shafts, hydraulic

cylinders, all to OEM spec or better. We can also recover and remanufacture fatigued metal components and surface-engineer them for extended operational and service life in a range of challenging environments - at a fraction of the cost of replacement OEM parts.

#### **Fluid handling**

Fluid handling means high velocity fluids - liquids and gases. High velocity means wear, erosion and corrosion - at high impact points within pump impellers, valves seats and stems, bends and elbows in pipework systems. And those pumps, valves and pipes are vital components in a production process. A worn component means inefficiency, leaks and delays. With LaserBond's technology, components work better, last longer and cost less.

## **Lowering maintenance costs**



**Manufacturing**

Chemical manufacturing. Timber processing. Paper manufacturing, Plastics extrusion. Aluminium processing. Food processing. Cylinders. Pumps. Compressors. Conveyor systems. Compressed air systems. Packaging systems. If a part of the process fails through metal fatigue, wear or abrasive erosion, the whole process stops. We can increase resistance to wear and corrosion, optimise performance, extend plant and machinery operational life and increase component reliability. This is of particular importance to customers who produce goods and services necessary for everyday life.

**Defence**

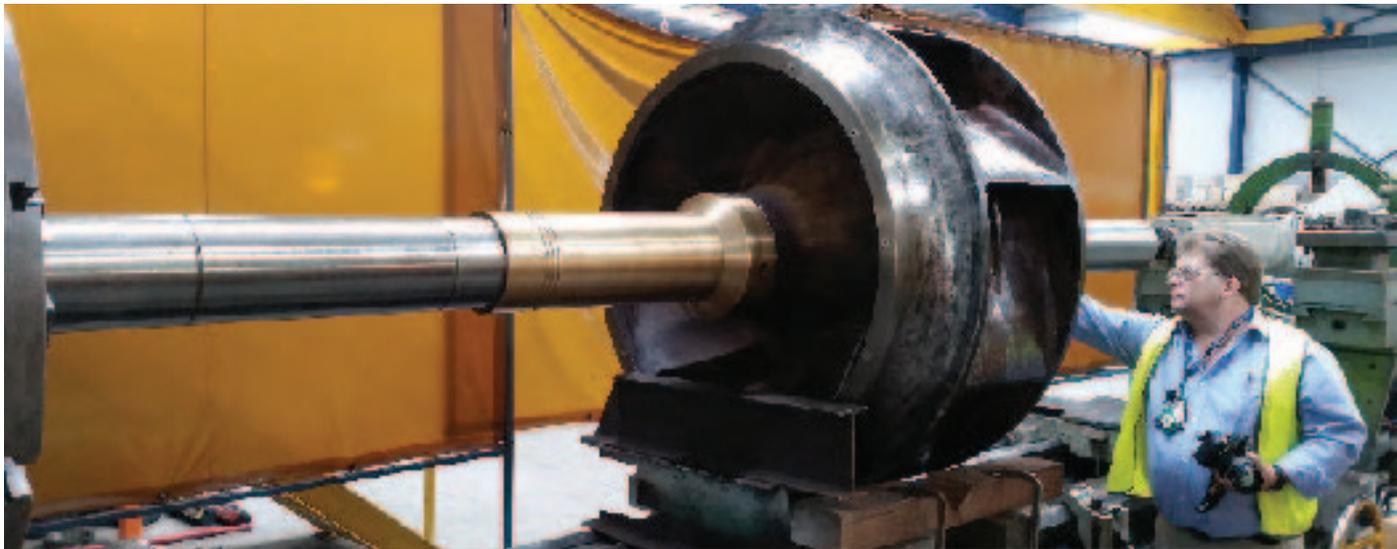
Applying surface-engineered materials to defence equipment can improve

its field performance and longevity. LaserBond's metallurgical experience assists to develop and deliver new materials and specialised components to enhance all of Australia's defence force capabilities and delivery platforms, propulsion systems and survivability equipment.

**Agriculture**

The gentle art of cultivation is occasionally not so gentle. Large-scale ground preparation in abrasive soils and rock requires powerful machinery and robust, reliable components. Abrasive soils and rock means wear on those components. Wear that will decrease their efficiency and increase ground preparation time. LaserBond surface engineering will improve wear component life for better crop yields and harvest results.

**Improving productivity**



LaserBond embraces corporate best practice for the successful delivery of our services, products and technology. We acknowledge our responsibility to a diverse range of stakeholders. We have implemented a series of integrated policies which focus on productivity, innovation and conservation.

• **Workplace Health & Safety** - A workplace where people can work without being injured and eliminating potential workplace

exposure to noise and substances that may cause harm.

- **Environment** – Developing innovative technologies that deliver product and services which help conserve our environment.
- **Community** - Engaging with our employees, families and communities to respect their rights and empower their aspirations.
- **Quality** - Ensuring our systems, processes and people deliver quality outcomes wherever and however they engage with the company.

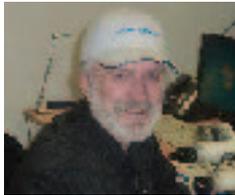
## Values we embrace



LaserBond truly believes that one of the keys to our success is attracting and retaining a talented and diverse workforce. We strive to provide an environment for our employees which encourages innovation and creativity, and that rewards success and effective teamwork. Many of our people have developed longstanding friendships through working with others at one of our workshops or office facilities.

Our employees know the core values and behaviours we require them to demonstrate. It's a significant part of our corporate culture. And we believe those values and behaviours combine to create a culture in which employees can thrive, doing their best to deliver high quality services, products and technology for our customers. There's more to LaserBond than just operating as a successful, profitable business.

## Our people and culture



## **Gregory Hooper** FOUNDER - EXECUTIVE DIRECTOR

Gregory is one of Australia's acknowledged specialists in surface engineering and has more than 30 years practical and sales experience in leading edge surface engineering technologies.

He is the founding member of the LaserBond team and established HVOF Australia Pty Ltd (the precursor to LaserBond) in the early 1990s. The formation of which coincided with a significant technology development in surfacing processes known as High Pressure High Velocity Oxy Fuel (HP HVOF). As an Executive Director at LaserBond Limited his core responsibilities for the company is R&D and sales. He is continuing to develop surface engineering technologies and specialist products utilising the extensive experience and practical skills found within LaserBond.



## **Wayne Hooper** EXECUTIVE DIRECTOR

Wayne is a professional engineer with extensive experience in the specialist infrastructure and manufacturing sectors. He holds degrees in Engineering and Science and is a Master of Business Administration and has strong practical experience in design, project management and contract management. Before joining the company in 1994 he worked in the power generation and manufacturing sectors and held a senior marketing role in the building products industry.

As an Executive Director of LaserBond he has responsibility for technology development, production, engineering and logistical support and administration for the group.



## **Allan Morton** CHAIRMAN

Allan is a well-qualified, experienced professional engineer and business leader. He holds degrees in Engineering (B.E. Mech 1st Class Hons) and Business Management (Operations), and is also graduate of Harvard Business School (Executive MBA [PMD]). His career commenced with sixteen years with CSR Limited, working within their sugar division throughout Australia and New Zealand.



## **Philip Suriano** NON-EXECUTIVE DIRECTOR

Philip was appointed a Director and 2008 and has brought the experience of a diverse and practical professional career – spanning corporate banking, finance and media – to the Board. He holds a degree in Banking and Finance and spent some 16 years in senior positions, including operations, marketing and sales, in the Australian media sector. He has also had extensive involvement in large-scale manufacturing and the Australian mining industry and is currently continuing his long-standing involvement in the corporate finance and equities sector.



## **Matthew Twist** FINANCIAL CONTROLLER

Matthew joined the company as Chief Financial Officer in 2007 and brought extensive experience in financial management, financial and operational control and systems development to the role. He was appointed Company Secretary in 2009.

Matthew has fulfilled the academic requirements to attain the Certificate in Governance Practice for the Governance Institute of Australia and is currently a certified member.



## **Steve Halloran** PRODUCTION MANAGER

An experienced tradesman, Steve joined LaserBond in 2007. After working in a number of diverse operational units in the workshop and fully conversant with the overall operation

of the company he was given responsibility for estimating and quoting jobs for the workshop. Steve holds a Cert II Mechanical Engineering Trade Certificate.



## **Peter Mutty** NATIONAL SALES MANAGER

A highly experienced thermal spray and cladding systems manager, who has worked in national and international leadership roles.

Peter has a wealth of knowledge in the maintenance and repair fields covering a board cross section of heavy industries, including earthmoving, exploration, mining, oil & gas, power generation, hydraulics, steel making, refining smelting and steel making.

# Leadership team



LaserBond is certified PAS99:2012; the world's first integrated management system which brings our ISO 9001 - Quality Assurance, ISO 14001 - Environment and AS/NZS 4801 - Workplace Health and Safety under a common risk-based set of documentation, policies, procedures and processes. Our commitment is to not only deliver quality products and services on time, and in full, but also to manufacture them in an environmentally sustainable manner. All of this whilst ensuring that our workplace is safe and healthy and a desirable place of employment for our people.

## Integrated management systems



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