

AWWELD

Leadership in Life Extension

Capabilities and Company Overview

*Innovative coatings to
extend the life of critical equipment*

LOCTITE[®]
COMPOSITES APPROVED APPLICATOR

V202002

Complete Surfacing Solutions

- Hardfacing and surface engineering to extend life of critical equipment
- Large machine shop
- Thermal spray, welding and composite coatings
- Machining, grinding, fabrication, design and engineering
- Head office in Melbourne (Laverton North)
- 24 hour operation when required
- Access to worldwide materials engineering expertise

Industry	Equipment Repaired/Manufactured
Mining & Resources	Conveyor Pulley Lagging, Pumps, Vacuum Pumps, Pistons, Chutes, Buckets, Teeth, Valves,
Pulp & Paper	Roll Covers, Roll refurbishment, Pumps, Rotary Valves, Boilers, Vessels, AbrasaPlate pulper liners, AbrasaPlate screen and sorter bodies, Vacuum Pumps,
Woodchip	Face Plates, Anvils, Chipper Knives, Counter Knives
Bulk Material Handling	Rotary Valves, Conveyor Pulley Lagging, Transport Screws, Buckets, Chutes, Conveyors, Hoppers
Timber, MDF	Bed Plates, Glue Blenders, Pistons, Saw Guides
Cement	Rotary Valves, Chutes, Hoppers, AbrasaPlate liners, Ducts, Hammers, Boiler Parts
Steel Industry	Rolls, Grip Coatings, Bearing Chocks, Shafts
General Engineering	Pumps, Shafts, Valves, Vessels, General Wear Components, Mixers, Rolls, Rotating Components
Quarrying	Crusher shells, shafts, AbrasaPlate wear plate, AbrasaStuds,



Machine Shop

Equipment	Capacity
Overhead Cranes	60 tonnes total, 10m clearance
Lathes	Up to 1.4m swing, 10m length
Vertical Borers	30 tonnes on the table, dia 3.0m
Horizontal borer	3m x 5m x 4m
Cylindrical grinders	10m length, 1.5m dia
Roll Grinder	6m length
Drills	Up to 1.5 x 3.1 x 2.0m
Surface Grinders	600mm x 2.5m
Robotic Welding	12m x 3m x 3m, 9 axes
Metal spray booths	Up to 8m x 5m x 4m
Blast/Paint booths	Up to 15m x 5m x 4m
Balancing	15m long x 4.0m diameter

Coating Technologies

Process	Applications
Plasma Transferred Arc (PTA) Welding	Tungsten Carbide deposits for extreme abrasion and impact positions
HVOF Thermal Spray	Versatile wear resistant deposits
Twin-Wire Arc Spray	Wide variety of metal spray deposits, especially for dimensional restoration, large scale wear prevention, and in-situ processing
DC-Plasma Spray	State-of the art high melting temperature ceramic coatings
Polyurethane coatings	Lightweight tough wear prevention coatings, highly specialised paper industry roll covers, pulley lagging
MIG Welding	Fabrication, general hardfacing
Tig Welding	Precision hardfacing
Loctite Composites	Composite coatings for pumps, and industrial components
AbrasaStuds	Wear resistant studs for high impact applications

HVOF Thermal Spray



Large Vertical Borer – 3.5m diameter



Machining
(1.4m diameter x 11m length)



Cylindrical Grinding
(1.8m diameter x 9m length)



Robotic Welding (10m
x2m x2m)



Horizontal Borer
(Table 6m x 3m x 3m)

Product:	Rotary Valves
Industries:	Cement, Wood Chip, Bulk Material Handling, Asphalt, Coal, Grain
General Overview:	Heavy and light duty rotary valves manufactured or repaired. Suitable for the harshest environments
Expected life extension:	4-8 times

- One of Awweld's main areas of focus
- Super-heavy duty design based on 30 years of industry experience
- New manufacture and reclamation of any RV
- Consulting and advice on setup and operation
- Tungsten carbide rotor vanes, housing bores, seal journals
- Diamond ground parts for precise clearances
- "Set and forget" long life design
- Oversize heavy-duty motors and bearings



Product:	AbrasaPlate™ Wear Plate
Industries:	Various Industries
General Overview:	A general purpose chrome-carbide overlay plate suitable for application in various positions. High impact and abrasion resistance
Expected life extension:	4+

Overview

- Chrome carbide wear plate
- Weld overlay hardfacing on mild steel backing
- High wear resistance compared to stainless steel, Q&T steel
- Easy to form, weld, roll, cut
- Different grades for different applications
- Good impact resistance
- Available in sheet form or full fabricated assemblies

Available Grades:

- **AP-3000** – High quality general purpose plate designed for medium impact and high abrasion. A high volume of hexagonal chrome carbides in a tough austenitic and martensitic matrix.
- **AP-7000** – Increased chrome carbide content is achieved through the submerged arc welding process. Resulting in higher abrasion resistance.
- **AP-X** – A 2-3mm thick cross hatch weld overlay on top of any standard plate. Increases impact resistance and allows the plate to become self protecting using a ‘rock box’ effect.
- **AP-6000** - Uniformly distributed hexagonal chromium and complex carbides imbedded in tough austenitic and martensitic matrix for high temperature applications.
- **AbrasaPipe** – Internally hardfaced pipe designed for abrasion resistance. Prevents wear against fine particle slurries and dust.

Cross section of AbrasaPlate



Common Applications:

- Chutes
- Ducts
- Fans
- Truck beds
- Screen plates
- Transition segments
- Elbows
- Buckets
- Hoppers
- Crushers

Common sizes (Hardfacing/backing thickness, mm)

3 on 3	8 on 8
4 on 4	9 on 10
4 on 6	9 on 16
5 on 8	12 on 12
6 on 6	17 on 12
6 on 8	20 on 10

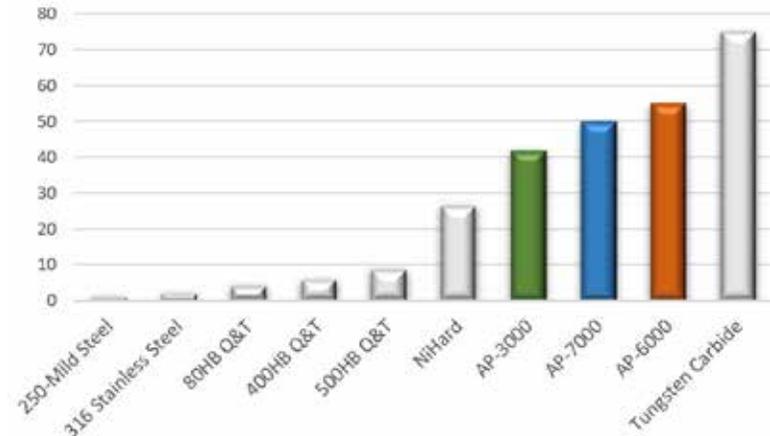
Other sizes on request

Standard sheet sizes

1.5 x 3.0m (4.5m ²)
2.2 x 3.0m (6.6m ²)



Wear Resistance Rating



Product:	AbrasaPlate™ Wear Plate
Industries:	Various Industries
General Overview:	A general purpose chrome-carbide overlay plate suitable for application in various positions. High impact and abrasion resistance
Expected life extension:	4+



Rolled AbrasaPlate



Chip Transfer Chute



Steel mill coal screens

Paper Industry Orifice Wear Plate



Secondary Pulper Lining



Hydropulper lined with AbrasaPlate wear plates, with AbrasaPlate-X cross hatch baffle plates



Product:	AbrasaPlate-X™ Cross Hatch Wear Plate
Industries:	Various Industries
General Overview:	A general purpose chrome-carbide overlay plate suitable for application in various positions. High impact and abrasion resistance
Expected life extension:	4+



Cross hatch AbrasaPlate is light weight, and outstanding for high impact applications. It is made of mild steel backing, with a weld overlay chrome carbide hardfacing, then a 3mm thick hardfaced cross hatch pattern.

The cross hatch pattern enables bulk solids to fill up depressions in the surface, and then self-protect.

It also provides outstanding impact resistance.

Common sizes
(Hardfacing/backing thickness, mm)

4 on 4 X	9 on 10 X
4 on 6 X	12 on 12 X
6 on 8 X	



Product:	AbrasaPipe™ Wear Pipe
Industries:	Mining, Cement, Mineral Preparation, Power, Pulp & Paper
General Overview:	A hardfaced pipe available in all common sizes, with hardfacing either internal or external.
Expected life extension:	4+

- Internally or externally hardfaced pipe
- Same composition as AbrasaPlate
- All standard pipe sizes available
- Standard lengths up to 12m available
- Smooth overlay
- Bends and transitions also available
- Very small diameters available
- Hardfaced joints and neck rings available



Standard Pipe Sizes

mm	Inch	OD	ID	Internal Hardfacing (mm)
63	2.5	73	52	3-5
75	3	89	72	3-6
90	3.5	102	86	3-6
100	4	114	98	3-8
150	6	168	150	3-8
200	8	219	197	4-9
250	10	273	249	4-9
300	12	324	297	4-9



Custom pipe sizes are also available, with multiple layers of hardfacing.

Product:	Vacuum Pumps
Industries:	Ore Processing, Pulp & Paper, Mining, Food Processing, General Industry
General Overview:	Heavy duty vacuum pumps manufactured or repaired. Suitable for the harshest environments
Expected life extension:	4-8 times

- Full overhaul capabilities
- Dimensional restoration of worn components
- Hardfacing of cones, rotors, housings
- Specific application expertise
- Weld overlay, composite, thermal spray coatings as required
- Testing capabilities
- Non-stick coatings to prevent internal build-up of scale



Product:	Vacuum Pumps
Industries:	Ore Processing, Pulp & Paper, Mining, Food Processing, General Industry
General Overview:	Heavy duty vacuum pumps manufactured or repaired. Suitable for the harshest environments
Expected life extension:	4-8 times



Product:	Pump Repairs
Industries:	General Industry, Pulp & Paper, Mining, Food Processing
General Overview:	All parts of pumps repaired and restored; longer life than new pumps, saving you money!
Expected life extension:	1-8 times, depending on options

- Precision Machining and grinding
- Weld repairs
- Metal spray coatings
- Composite Loctite coatings (Approved applicator)
- Heavy duty solutions
- Full overhaul
- Testing available
- High temperature applications
- Abrasive media applications
- Robotic weld repairs



Product:	Loctite Composite Coatings
Industries:	General Industry, Pulp & Paper, Mining, Food Processing
General Overview:	All parts of pumps repaired and restored; longer life than new pumps, saving you money!
Expected life extension:	1-8 times, depending on options

Avweld are approved applicators of Loctite Composites.

Loctite composites utilise world-leading adhesive technologies to provide repair and coating options for all types of industrial machinery. **Composites are available for repair of metal, concrete, rubber and plastics.**

Brand new technology for ease of application makes Loctite Composites very competitive.

Loctite Composites can be applied by Avweld, or purchased for self application by our customers. On-site training is available free of charge.

Full Loctite Composites range is available, including:

- Loctite Nordbak Wearing Compound
- Loctite Nordbak Fast Cure Wearing Compound
- Loctite Nordbak Brushable Ceramic
- Loctite PC 7255 Sprayable Ceramic
- Loctite Nordbak Chemical Resistant Coating
- Loctite Fixmaster Rapid Rubber Repair Kit
- Loctite Fixmaster Superior Metal
- Loctite Fixmaster Magna-Crete
- Loctite High Impact Crusher Backing
- Loctite Pipe Repair Kit



Above: Worn out pump impeller before repair.

Below: After repair with Loctite Wearing Compound and PC 7255 Sprayable Ceramic



LOCTITE®
COMPOSITES APPROVED APPLICATOR



Product:	Shaft/Journal repair
Industries:	All industries
General Overview:	All shafts and journals are repairable, either just for dimensional restoration, or for added protection with hardfacing
Expected life extension:	1-6

- Metal spray repair of worn shafts
- Cold-spray process – no induced stresses
- No heat treatment required
- Dimensional restoration of bearing journals
- Hardfacing for seal journals
- Often cheaper than shaft replacement
- Fast turnaround possible

Shaft Types

Armature shafts

Commutator shafts

Crusher shafts

Distributor shafts

Drum shafts

Eccentric shafts

Feed roller shafts

Gear shafts

Paper roll shafts

Pump shafts

Refiner shafts

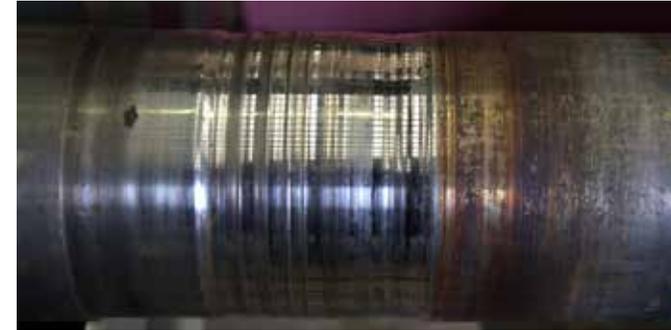
Steel roll shafts

Stub shafts

Tapered shafts

Turbine shafts

Winder shafts

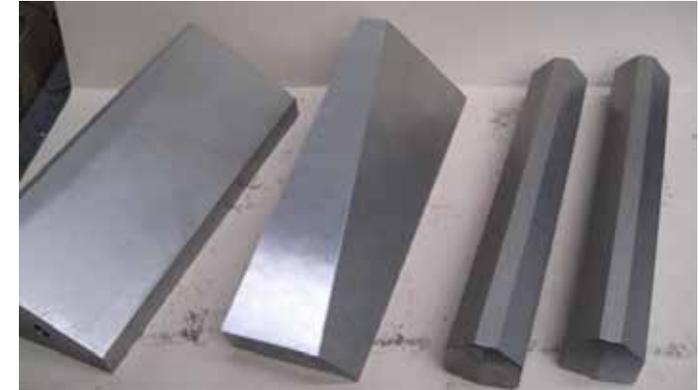


Worn journal



Product:	WoodChip Components
Industries:	WoodChip, Timber, MDF, Particleboard
General Overview:	Highest wearing components coated with proprietary materials to increase life massively over <i>any</i> other product available in Australia.
Expected life extension:	10++

- Supplying all wearing consumables for woodchippers
- Impact resistant weld overlay coatings for longer life available. Proven in Australia's biggest chippers



Awveld Can Supply:

Chipper knives

Counter Knives

Face Plates

Knife Clamps

Chip Deflectors

Chip Pocket Liners

Bed Knives

Anvils

Chip Breakers

Belly Bands

Any other wear components required

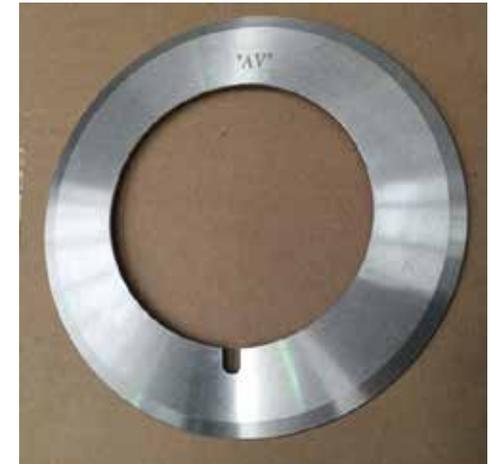


Product:	Knives
Industries:	Pulp and Paper, timber, steel, plastics
General Overview:	High quality knives designed for increasing performance of chippers and cutters
Expected life extension:	50%

- Knives manufactured new from quality tool steel
- Cryogenic treatment available
- Material selection advice available for broad range of applications
- Knives hardfaced using tungsten carbide and metal spray options

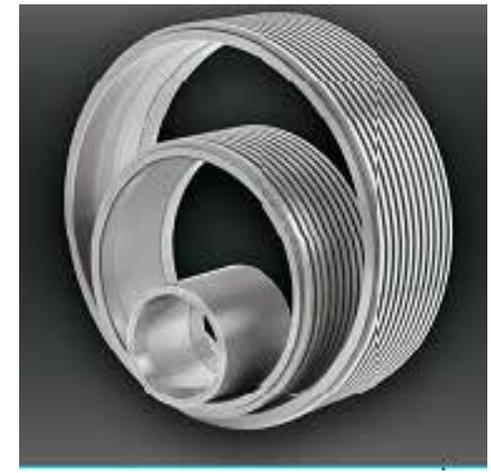
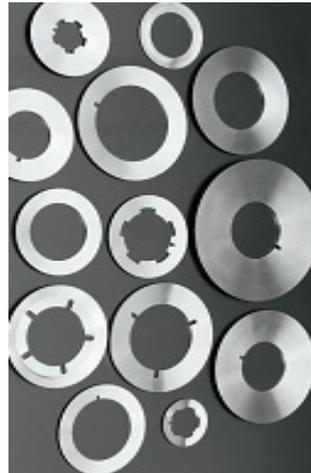
Industries

- Woodchip
- Steel
- Plastics
- Paper
- Recycling
- Printing
- Packaging



Knives

- Chipper Knives
- Counter Knives
- Bed Knives
- Top Slitter Knives
- Bottom Slitter Knives
- Guillotine Knives
- Tube Slitter Knives



Product:	Metallic, Carbide and Ceramic Roll Coatings
Industries:	Pulp & Paper, Steel, Aluminium, Board, Food Processing,
General Overview:	Highest quality tungsten carbide roll covers offer extreme abrasion resistance
Expected life extension:	1-10

- Precision grinding, machining, coatings
- Super finishing – optical mirror finish possible
- Dimensional restoration, wear resistant coatings, non-stick coatings
- Tungsten carbide, chrome carbide, bronze, stainless steel coatings, Ceramic Chrome Oxide coatings
- PTFE (Teflon™) coatings for non-stick applications



Product:	Hydraulic Rams, Pistons, Chrome Replacement Coatings
Industries:	MDF, Particleboard, Steel, earth moving, general engineering, mining
General Overview:	Tungsten carbide coating of cylinder surfaces for longest life possible, highly engineered bushings and seals
Expected life extension:	4-10

- Wear resistant coatings for hydraulic pistons
- Replacements for traditional hardchrome coatings
- High density, low porosity, high wear resistant coatings
- Can be superfinished to optical mirror finish
- Increased seal life
- Materials: Tungsten carbide, chrome carbide



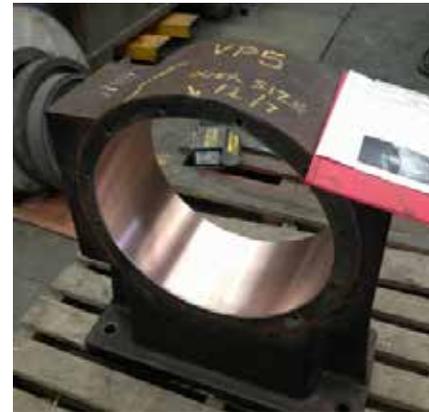
Product:	Screws
Industries:	Pulp & Paper, recycling, bulk material handling, MDF, Particleboard, Petrochemical, Cement, General Industry
General Overview:	Wear-solutions for all screws, from mild corrosion to the most severe erosion
Expected life extension:	2-10

- Manufacture and refurbishment of all size screws
- AbrasaPlate screw flights
- PTA tungsten carbide weld overlay to flights and cores
- Robotic application
- Supply of replacement flights
- Chrome or Tungsten coatings
- Loctite Composite coatings



Product:	Bearing chocks
Industries:	Steel manufacturing, general industries
General Overview:	For a fraction of the cost of a new bearing chock, Awweld can rebuild the critical dimensions to tight tolerance, generally with superior performance to OEM parts
Expected life extension:	1+

- Any size bearing chocks/chucks can be refurbished
- Often cheaper than new chocks
- Fast turnaround
- Precision machining



Product:	Fans
Industries:	Mining, Cement, General Industries
General Overview:	Aw weld have a range of wear-prevention solutions for fans of all shapes and sizes, including both refurbishment and manufacturing.

- Manufacture, Repair and Lining of all fan types
- Supply and installation of fan wear plates

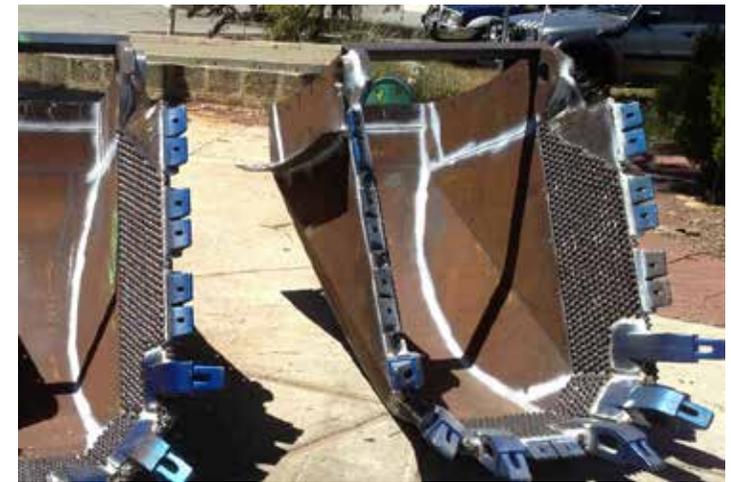
Hardfacing options:

- AbrasaPlate™: Fans can be manufactured entirely from wear resistant chrome carbide plate
- AV72 hardfacing: Arc-sprayed chrome boron for general purpose wear prevention
- AV100 hardfacing: HVOF applied tungsten carbide for extreme wear resistance
- Loctite Composite Coatings: Economical and lightweight, without sacrificing performance



Product:	AbrasaStuds™
Industries:	Mining, Quarrying, Earth Moving
General Overview:	Wear-studs for high impact abrasion resistance in heavy applications
Expected life extension:	4-8 times

- Heavy duty alloy and carbide studs provide outstanding wear resistance in demanding applications
- Applied using stud-welding process
- Provides “self-protecting” layer due to voids between studs
- Replacement studs can be applied directly over worn out studs



Standard Sizes

- 16mm
- 20mm
- 20-P Pointy studs for timber feed rolls

Common Applications

- Loader, Excavator, Bogger and Face Shovel Buckets
- Truck Trays
- Dozer Blades and Push arms
- Crusher Wear Parts
- Feed Chutes
- Ground Engaging Tools



Product:	Crusher Repairs
Industries:	Mining, Quarrying,
General Overview:	Repair and hardfacing of all types of crushers
Expected life extension:	4-8 times

- Weld repair of all types of crushers
- Metal spray of worn journals on eccentric shafts
- Hardfacing of crushing and sizing teeth
- Supply of AbrasaPlate for wear surfaces
- AbrasaPlate screens
- Loctite Crusher Backing

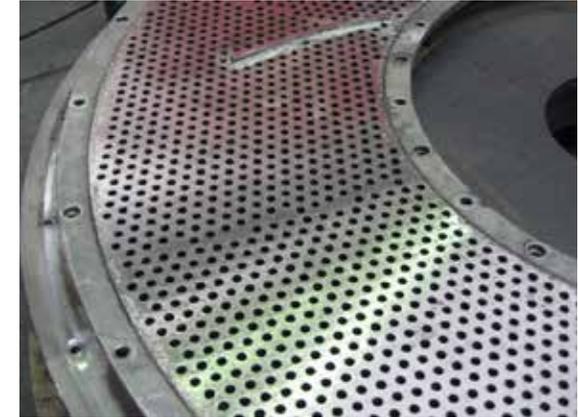


Product:	Screens
Industries:	Pulp and Paper, Mining, Food
General Overview:	The absolute toughest pulping screens available
Expected life extension:	6 times the life of stainless steel screen plates

- Tungsten carbide weld overlaid screens
- Retain sharp edges for longer
- Also available in lower grades (stainless steel, Q&T plate)
- Manufacture and repair

Suitable for all flat screens, including:

- Pulpers
- Pulper-emptying
- Turbo-separator
- Reject-separator
- Reject-sorter
- Fiberizer
- Screw Press
- Reject Press
- All Makes and Models



Screens manufactured and hardfaced by Awweld

Product:	Valves
Industries:	Various
General Overview:	Repair and manufacture of ball valves, plug valves, seats, valve housings, stems and yokes using specifically engineered materials for particular applications
Expected life extension:	2-10

- Any size valves (2" – 60")
- Repair and hardfacing
- Stellite coatings
- Tungsten carbide
- Chrome carbide

- Specialise in heavy duty valves
- High temperature applications
- Corrosive environments



Cast pure Stellite valves



Robotically welded ball valve



600mm Lunkenheimer Valve bodies ready for hardfacing with AV10™



Valve-plug PTA welded with Stellite

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