



Product Solutions  
Engineered Surfaces for Exceptional Performance



## Welcome to MSSA NewsWire - Issue 2

Well it's December already and our last Newswire of the year, so may we take this opportunity to wish you, your families, friends and colleagues, season's greetings and our very best wishes for 2018, from us all at Metal Spray Supplies Australia.

This issue of Newswire features some of the many Metalspray applications in use within the Agricultural industry to improve equipment performance also reducing wear and tear. In our "Product Focus" section we inform you of an innovative product called 'Cored Wire', and we discuss the benefits it can bring to you. We also have an important staff announcement to tell you about.

MSSA will close (for a well-earned break!) on the 22nd December 2017. Please ensure that you get any orders in well in advance, so as we don't have a stressful lead up to the festive season. We will then return on the 2nd January 2018 rejuvenated, fit and ready to go – we will see!



### Looking back at 2017 do you remember?

**Jan 18<sup>th</sup>** NASA announce 2016 was the hottest year on record, surpassing the 2015 record which itself topped a record set in 2014. This could be beaten again

**January 20<sup>th</sup>** Donald Trump inaugurated as the 45<sup>th</sup> President of the USA- who thought that would happen???

**February 1<sup>st</sup>** British Members of Parliament vote in favour of the European Union Bill allowing the government to begin Brexit.

**March 8<sup>th</sup>** Aboriginal DNA study by University of Adelaide shows aboriginal population dates back 50,000 years.

**April 16<sup>th</sup>** World record for gathering of Charlie Chaplin look a likes 662 in Vevey Switzerland

**May 7<sup>th</sup>** Emmanuel Macron wins France's Presidential election

**June 11<sup>th</sup>** Japan passes law allowing Emperor Akihito to abdicate

**July 2<sup>nd</sup>** Jeff Horn (QUEENSLANDER!!!!) defeats Manny Pacquiao in WBP Welterweight World Boxing title fight.

**August 3** Footballer (Soccer) Neymar signs 5-year deal with Paris Saint Germain for \$263 million setting a new World Record

**August 21<sup>st</sup>** Big Ben in London chimes for the last time before a four-year restoration commences.

Did you know, the Palace of Westminster in London, UK has been Metalsprayed?

**September 19<sup>th</sup>** Donald trump addresses the United Nations stating that if the US is threatened "They will totally destroy North Korea"

**October 14<sup>th</sup>** The Spanish government says it will impose direct rule over Catalonia after the region voted for independence in a referendum

**November 7<sup>th</sup>** Melbourne Cup: Joseph O'Brien at 24 is the youngest trainer to win with Rekindling jockeyed by Corey Brown

**December 5<sup>th</sup>** First pizza party in space held by astronauts of the International Space Station

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## Interesting FACT

The UK Navy/RAF were faced with a problem of high heat and exhaust gases from their F-35 Lightning II fighters (the most advanced jets in existence!) destroying traditional coatings. [Click here for the link to an article showing how Metalspray triumphs again over traditional coating methods.](#)

Now that you have read the article, you may recall in our first Newsletter, we stated that we are looking to educate people on the benefits of the process and how it affects our everyday lives. The article refers to "Thermal Paint". The definition of *Paint* is "typically consists of pigment, resin, solvent and additives" The

thermal paint they refer to is actually a wire that is Arcsprayed and comprises of Aluminium and Titanium (Metallisation 28E) – IT DOESN’ T USE A SOLVENT!!! We wonder why people are not aware of the process? Or just confused?

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## Important Announcement - Pete's Retiring

It’s time to say a BIG thank you to Peter Kaggelis who has been our Sales Engineer for more than 12 years. Peter has decided the time has come for him to retire and pursue his love of camping and fishing. During his time at MSSA, Peter has been amazed at the applications and the capability of the Metal/Thermal Spray processes. Coming from a Boiler maker background, this was an exciting and sometimes challenging role, with differing sets of rules when combining the many different spray processes with a wide and extensive range of materials.

We wish Peter a long and happy retirement.

Bob Veljkovic (pictured) has now joined MSSA to continue with Peter's good work. Bob is a Mechanical Engineer Toolmaker spending most of his trade career precision machining, fitting, mechanical maintenance and assembly. Bob is keen to learn more about the world of Metal/Thermalspray and sees it as an exciting challenge (definitely a challenge Bob!!! Just ask Pete)



## Feature Article

### Metalspray engages growth in Agricultural applications

The necessity for cutting/slashing and ploughing in the Agricultural sector means that the components used are subject to very abrasive and corrosive conditions, in their day to day use.

Metal/thermal spray coatings and hard facing can provide the solution for wear and corrosion resistance as well as extending life and increasing performance of Agricultural equipment.

The necessity for the irrigation of planted crops requires pumps that will withstand the hardness and ph. values of water and fertilizers. The metal spray process can apply ceramics to pump seal areas to repair and protect OEM components: -

- Agricultural: Knives and blades, Threshing components, Ground engaging machinery
- Agriculture, forestry: barking blades & tools, wear parts for farming tools, feeding screws for fertilizers, feeding screws for wood barks,
- Sugar cane: sugar cane crusher, sugar cane cutters

The metalspray and hard facing processes use various forms of equipment that employ wire, powder and cord to deliver the required solutions.

Every issue of abrasion does not involve the same solution and therefore requires a careful study of each individual or specific application according to:

- type and size of the abrasive material,
- abrasion rate, temperature, impact occurrence...
- geometry, size and the weld ability of the part.

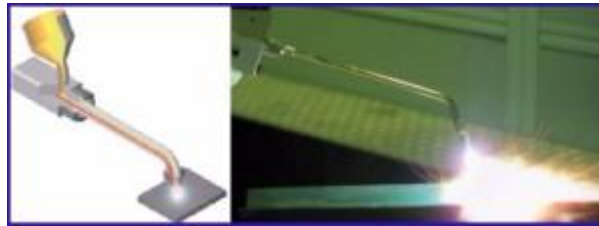


Tuf-Cote® "rope like" hardfacing electrodes to improve ABRASION & EROSION resistance.

TUF-COTE is brazed using an oxygen-acetylene torch. It can be welded onto mild steel, low carbon steel, low alloyed steel, stainless steel, lamellar grey cast iron, spheroid cast iron. It can also be brazed on to certain alloys of manganese steel with precautions. TUF-COTE® is weld-able on itself, making local repair or recycling of parts possible.

The Powder welding process utilises an Oxy Acetylene flame which is ideal for the deposition of smooth, thin, well bonded layers onto a wide range of substrates, including cast iron. The Hardfacing takes place at lower temperatures, which minimises oxidation and distortion of the workpiece and enables easy surfacing of edges.

Below is a diagram and picture of Powder Welding:



The Oxy Acetylene Flame spraying process followed by subsequent Fusing as a two- stage process, after spraying the coating is fused with an oxy-acetylene burner or for mass production by using induction heating or in a vacuum furnace allows the coating to be Metallurgically bonded, extremely hard, corrosion resistant and resistant to impact and chipping. The powders used for Spray and Fuse Hardfacing are typically compositions of Ni, Cr, Co, Bo, Fe, W and WC in varying blends

The application of Chrome Oxide ceramic powder or cord allows various pump parts to be either repaired or have their life expectancy increased with a very hard wearing coating.



Pumps can also be coated with Monel®, Inconel®, Stainless Steels by Flamespray and Arcspray methods



### Arcs praying

Alloys that have been used throughout the decades in manufacturing agricultural tools, often lack adequate wear and corrosion resistance. The Thermal/Metal spraying process is used for enhancing heavy-duty and self-sharpening ground-engaging tools that are not susceptible to premature failures. We can typically apply a metallic or carbide based material onto a substrate to augment its properties. The end products are agricultural tools that feature superior wear and corrosion resistant properties.



With Australia aiming to be the “Market garden” of the World, the Metalspray and Hardfacing processes will be playing a far greater role in its success in the years ahead.

A recent annual Industry snapshot by The Australian Food and Grocery Council (AFGC) shows that the \$127.4bn Australian food and grocery sector has added more than 7,300 jobs in 2015-16. AFGC CEO Tanya Barden stated, “The food and beverage, grocery and fresh produce sectors employ 320,300 people representing over 33 per cent of Australian manufacturing jobs- despite a small decrease in industry turnover of a third of a per cent to \$127.4 billion”

For more information [click here](#) for full article.

With rising costs, the need to make machines/ components operate for longer periods and more efficiently, presents an ideal opportunity for the Metal/thermal spray coatings and hard facing applications to play its role in the future.

Interested in AGRICULTURE? - Click Here for More Information

Product Focus: **CORED WIRES** (our "All-in-One" Top Coat & Bond Coat)

When Arcspraying, it is a common practise to apply a Bond Coat followed by a Top Coat. This means changing over wires after the Bond Coat which takes up valuable time. MSSA offer a 'one-step' solution to address this issue, meaning that you only need one wire, and our MSSA R20 and R30 are cored wires that fit into this category.

[MSSA R20](#) is a Nickel, Molybdenum and Aluminium cored wire. Follow the link for more details

[MSSA R30](#) is a Nickel, Chrome, Aluminium, Molybdenum, Iron cored wire. Follow the link for more details

Want to know more? Click to see our Technical Bulletins: [MSSA R20](#) and [MSSA R30](#)

Feature Article in next issue of News wire : **ANTI-CORROSSION**

Do you know about?

Metal Spraying

Flame Spraying

Arc Spraying

HVOF Spraying

Plasma Spraying

Masking

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