

SHIELDING GASES



Words and images: Jamie Gray

BOC's Applications Technology Centre at Minto in Sydney's southwest showcases new technology that improves the rate of production and quality of welds.



Kyle Scott, Head of Product Management and Manufacturing Applications, shows off some of the amazing technology at the Minto Application Facility.



Just some of the equipment on site.

BOC's excellent new Applications Technology Centre at Minto in Sydney's southwest is a showcase of new technology that improves the productivity and quality of welds at a rapid pace. Products available today have sped up production efficiencies by 30%-40% over those of just a few years ago. So, whether you are new to metal fabrication, or have been in the game of welding for decades, there are new products that could significantly impact your business' bottom line.

SCREEN TIME

The facility at Minto is at the old BOC Gas & Gear location which has been adapted into the new Application Training and

Product Education facility. This isn't a facility competing against TAFE training. This is a facility for BOC customers to learn about new technologies to include in their existing or new business.

To show me around the centre was Pete from BOC, who opened my eyes to the facility's scope to develop and test new products, develop welding procedures for customers looking to do something outside the box, and training BOC staff on new products and developments.

Pete chatted about the rapid rate of product development: "BOC is selling machines today that didn't exist a year ago, so we needed to have a hands-on way to share the benefits of this new equipment and technology with our customers. This new Application Facility is

the outcome of that need.

"Metal fabricators are used to seeing their welding arcs as tiny, bright, sources of light and energy through their helmets. At this facility we've created unique and safe training equipment that actually records and projects the different effect unique shielding gases have on welding arcs in real-time. You can stand here and see the welding arc projected up onto a screen, then switch between various shielding gases and learn the characteristics of each on a large projection or large flat screen."

IMPROVED

As all metal fabricators know, both TIG and MIG welding techniques require a shielding gas to protect the weld zone from

the air which leaves the weld looking like an Aero chocolate bar full of air bubbles. It not only looks ugly; it has no real strength or penetration. Over the decades straight argon has been a much-used shielding gas. Argon is fine for aluminium, but not great for carbon steel, so BOC has been adding oxygen and carbon dioxide to improve the look, quality and strength of the weld – not to mention producing a significant increase in productivity.

Welding speeds are also significantly improved with the addition of helium.

WELDING ALUMINIUM WITH A HELIUM/ARGON BLEND SHIELDING GAS

Another great feature of the Minto facility is that, as well as being able to view the benefits of certain gas combinations on the large screens, you can also put on your PPE and jump into one of the welding bays and try for yourself the unique benefits of various products.

Welder Geoff Adam showed us the effect of using a helium/argon blend for aluminium fillet welds. Geoff produced half a dozen fillet welds and the final product looked amazing – the welds looked strong and even. But the speed of the process was also impressive. Everyone knows you can't rush welding and

expect good results. With the gas being so well suited to both the machine and the material, he could just work at the right speed for the task. In this instance the result was around a 20%-30% improvement in speed.

STAINLESS-STEEL PLATE USING BOC STAINSHIELD HEAVY

The Stainshield Heavy product is 2.8% CO₂, 35% helium and the balance an argon product. It produced immaculate welds for metal-fabrication specialist, Paul Wotherspoon, working on a 3mm stainless-steel plate. This unique mix of gas brings production efficiencies of around 25% due to its quicker welding speed. Paul's welds were very tidy with minimal clean up required and did a fantastic job in terms of penetration, look and strength.

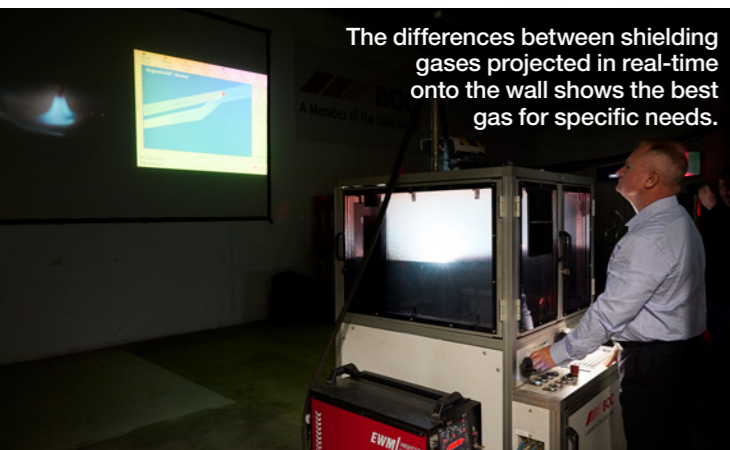
THE WRAP UP

BOC's Application Facility will be a fantastic resource for metal fabricators who may have been using the same shielding gases for some time. The level of detail and technology BOC has committed to the facility is fantastic. After watching the unique and clear differences these shielding gases achieve on the arc projector, I already know at least 3 or 4 tradies who run businesses that I'm going

WELDING-GAS MIXTURES INCLUDE:

- ARGOSHIELD Light
- ARGOSHIELD Universal
- ARGOSHIELD Metal Cored
- ARGOSHIELD 40
- ARGOSHIELD 52
- ARGOSHIELD 54
- ARGOSHIELD 100
- ALUSHIELD Heavy
- ALUSHIELD Light
- STAINSHIELD Heavy
- STAINSHIELD Duplex
- STAINSHIELD Light
- SPECSHIELD Copper
- ARGOPLAS 5
- ARGOPLAS 20

to make sure put half a day aside and arrange a visit the BOC Application Facility at Minto to keep up to speed with the industry's latest developments. And after jumping onto the BOC website – boc.com.au – and taking a look at the dozen or so shielding-gas options, you would be mad not to get up to speed on the latest products to ensure you're working to your full potential. *wtw*



The differences between shielding gases projected in real-time onto the wall shows the best gas for specific needs.



The facility has everything needed to experience how selecting the right shielding gas can save time and money.



Hands-on welding bays allow trying out specific gas combinations.



The BOC team.