

SILVACUT™



Flux cored alloy developed specifically for improved bit performance for down hole drilling

Lucas Milhaupt, the industry leader in brazing solutions, introduces Silvacut, the flux cored answer that provides stronger carbide braze joints. **Silvacut: Keeping your tools on the cutting edge!**

Superior Wetting

Silvacut offers superb wetting on tungsten carbide, even on lower cobalt bearing grades such as C2 (6% Co). By virtue of its optimized nickel and manganese content, Silvacut flashes farther than other common carbide brazing alloys such as AWS BAg-7 (56Ag/22Cu/17Zn/5Sn) and AWS BAg-24 (50Ag/28Zn/20Cu/2Ni) as seen in Figure 1. And while other alloys such as AWS BAg-22 (49Ag/23Zn/16Cu/7.5Mn/4.5Ni) also contain manganese, the amount used often creates a slag on top of the joint that can make seeing the joint difficult during brazing operations. The higher manganese content also leads to more tenacious oxide formation which leads to an increase in flux consumption and number of overall flux inclusions within the joint. Lastly, Silvacut eliminates the need and skill required to smear molten filler metal to enhance wetting. This in turn minimizes the heat effect which is detrimental to the PCD.

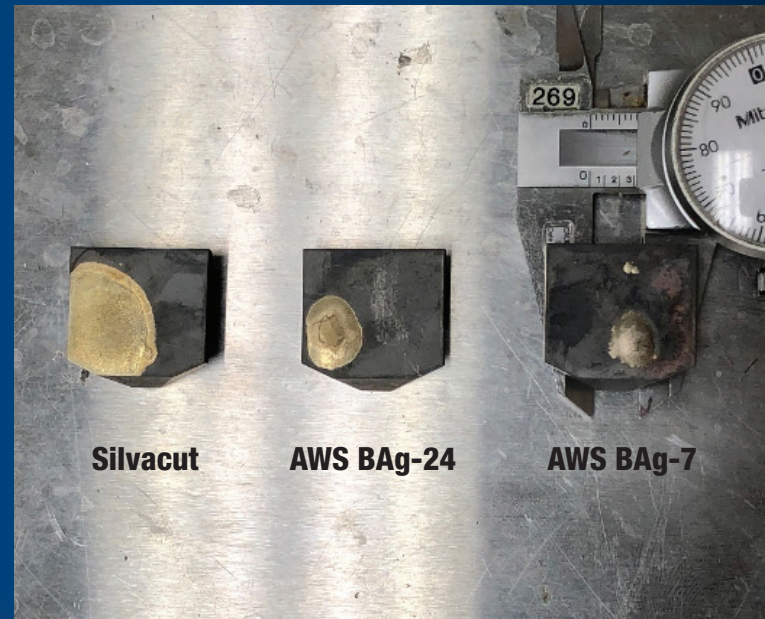
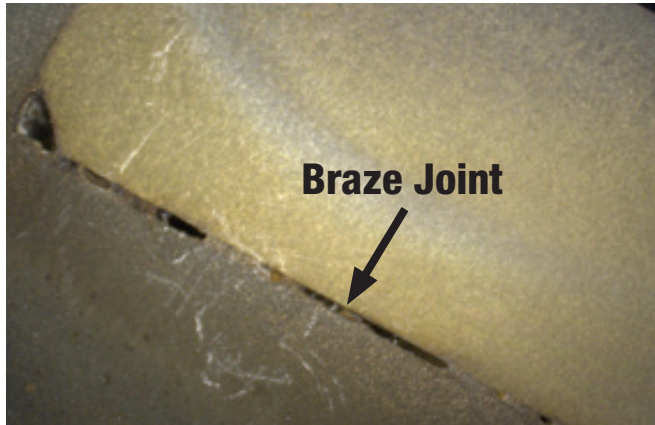


Figure 1: Wetting of C2 Carbide

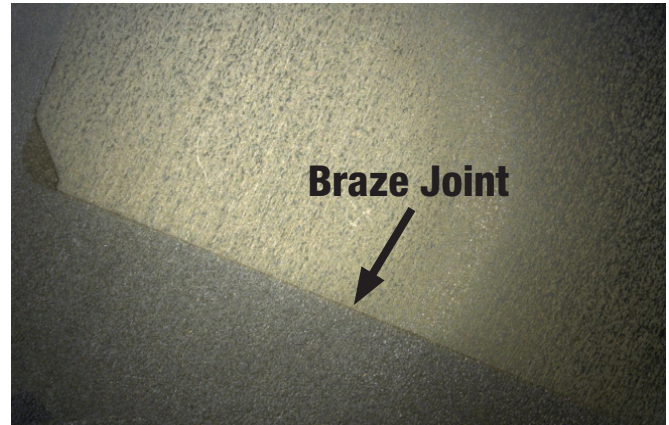


The Carbide Braze Solution

Your trusted partner in all things brazing, Lucas Milhaupt works relentlessly to provide innovative joining solutions. That's why Silvacut isn't just an alloy--it's a one stop solution to carbide brazing. And a premium braze alloy demands a premium braze flux. Therefore, Lucas Milhaupt is proud to offer their most powerful carbide flux, cored inside the industry's most capable alloy. The flux cored wire is a powerful tool for helping manufacturers lead the industry in first pass yield and low field failures. Silvacut not only packages the advantageous wetting properties of the filler metal but also combines it with a premier flux that is extremely fluid and aggressive which helps displace flux inclusions and reduce tenacious surface oxides. Whenever the flux cored wire is applied to the joint, fresh flux is applied along with the alloy to help break away oxides during longer heating cycles. This in turn leads to lower porosity and higher joint integrity as seen in Figure 2.



AWS BAg-7 and Separate Flux (High Porosity)



Silvacut (No Porosity)

Figure 2: Example of Carbide Porosity

Why Flux Cored Wire?

- Combined with a premier flux, Silvacut allows for a one-step brazing process without the need to apply separate flux
- Alloy/flux ratio designed to promote excellent alloy flow without leaving excess flux residue on the part that otherwise increases cleaning time post braze
- Flux inside the wire means that fresh flux is applied to the joint every time wire is fed which helps cut through tenacious oxides and displace flux inclusions producing higher integrity joints

Why Silvacut?

- Silvacut provides the best wetting out of any of the common silver carbide braze filler metals
- Liquidus of 1274F which helps prevent PCD overheating
- No need to use extra heat to improve wetting and alloy flow
- Provides longer lasting connections, allowing your drill bits to outlast the competition.

Product Name	Flow Point (Liquidus)	
	F°	C°
SILVACUT	1274	690

