

ALLOY SELECTION GUIDE

PRODUCT	RESISTANCE TO					DESCRIPTION & SUGGESTED APPLICATIONS
	ABRASION	GALLING	IMPACT	CORROSION	HIGH TEMP.	
VERSAIloy® 60	E	E	P	E	E	Exceptional high hardness and low coefficient of friction provides outstanding metal-to-metal wear resistance. The low melting point and free-flowing characteristics allow smooth, even deposits on the base metal with a minimum of dilution and base metal distortion. Maintains a high level of hardness up to 1200°F/649°C, with excellent corrosion resistance. Recommended for any severe wear with low impact application. Cams, draw blocks, shafts, sleeves, bushings.
VERSAIloy® 55	E	E	F	E	E	Similar properties to VERSAIloy® 60, with better impact resistance and less crack sensitivity. Recommended for plastic extrusion screws, rendering, extraction, and conveyer screws in the food, chemical/petroleum processing industries, where corrosion and moderate impact are present.
VERSAIloy® 50	E	E	G	E	E	Medium hardness with non-cracking weld deposits for conditions requiring impact and abrasion resistance. Recommended for pulp knives, ensilage cutter bars, and other agricultural implements.
VERSAIloy® 40	G	G	E	E	E	Provides high-impact resistance for dies, molds, plungers, valve slides, and other areas of high impact with low-to-medium abrasion.
VERSAIloy® 30	F	P	E	G	E	For cast iron parts, buildup and base layering for application of more wear-resistant alloys VERSAIloy® 40, 50, or 60.
VERSAIloy® 25	P	P	E	G	E	Repair and buildup of cast iron. Glass bottle molds and plungers.
VERSAIloy® 15	P	P	E	G	E	Softest alloy can be hand-filed to shape. Repair and buildup on any hard-to-weld base metal. Cast iron, steel, stainless.

E – Excellent G – Good F – Fair P – Poor

WELDING TECHNIQUES AND PROCEDURES

In all cases, minimum dilution processes are recommended to obtain maximum wear resistance.

OAW (Oxyacetylene) – Use a slightly carburizing flame (2-3 x feather), preheat base metal to a “sweat.” VERSAIloy® rods will then flow freely when introduced into the torch flame.

GTAW (Tig) – Use DC electrode negative (straight polarity) with largest size tungsten electrode possible to minimize tungsten contamination of the weld puddle.

SMA (Coated Electrodes) – For faster deposition and fieldwork, electrodes are preferred. They can run either AC or DC. DC reverse polarity is recommended.

SIZE	Recommended Amperage (DCRP)		SIZE	VOLTS	AMPS	Shielding Gas	
1/8"	3.175mm	80-100	3/64"	1.191mm	19-21	150-200	75% Ar-25% CO2 Argon 100%
5/32"	3.969mm	110-140					
3/16"	4.762mm	140-170	1/16"	1.587mm	19-21	175-225	75% Ar-25% CO2
1/4"	6.350mm	170-220					

GMAW (Mig) – Preheat and postheat 600°F/316°C to minimize cracking. Maintain a high preheat on harder alloys if large buildup is desired.

• **Flamespray • PTA • HVOF • Plasma Spray • VERSATorch. Various mesh cuts of prealloyed atomized powders for all powder spray applications.**