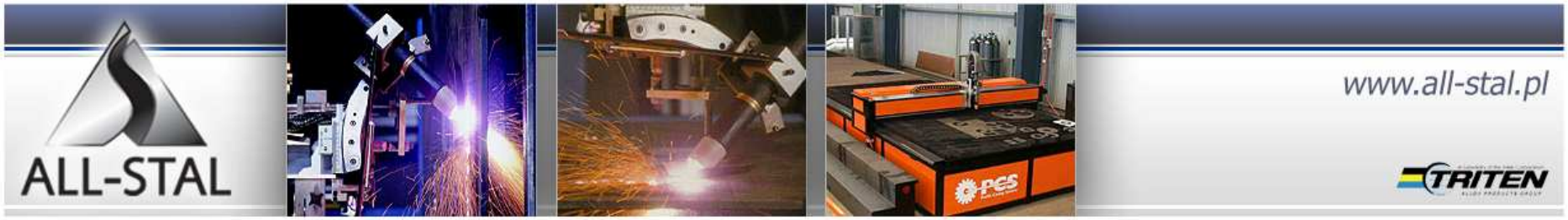

CUTTING

Both Triten's chromium and tungsten carbide alloy hardfacing overlay act like stainless steel during cutting. This precludes the use of conventional shearing or oxy-fuel flame cutting processes.

Four cutting methods can be used: Plasma arc, Water jet cutting, Carbon arc, Abrasive saw

Plasma arc cutting - Overlay plates, including those with special substrates, can be easily cut with a hand held or machine mounted torch using either air or inert gas plasma-arc processes. Typical systems feature a minimum 150 amp power supply and the higher the amperage employed, the faster the cutting speed which can be achieved. Overlay plates may be cut from either side, but to accommodate the natural bevel created by this process it is recommended that cutting takes place from the alloy side. Cutting speed should be adjusted to minimise the build-up of slag on the underside of plate.

Plasma-arc cutting is the recommended method of cutting overlayed plate

High definition plasma arc cutting is recommended where more accurate sizes are essential.

Water jet cutting – In this process a very high pressured water jet is used, usually mixed with a fine abrasive which enables materials to be cut cleanly and to close tolerances. Plate thickness up to 40mm can be cut.

Carbon arc cutting (Gouging) – A compressed air supply and a conventional constant current DC welding power supply, with a minimum OCV of 60V (80V recommended) is required for carbon arc cutting and gouging. An arc voltage in the range 35 - 56 volts is desirable.

Typical parameters for copper coated gouging rods are:

Diameter		Amperage (DC Reverse Polarity)	Minimum Air Flow		Recommended Air Flow	
Up to 6.3mm	1/4"	250 - 400A	3 cfm @ 40psi	100 l/min @ 3Bar	9 cfm @ 8Opsi	300 l/min @ 6 Bar
9.5mm & above	3/8"	350 - 600A	6 cfm @ 90psi	200 l/min @ 6 Bar	15 cfm @ 80 psi	500 l/min @ 6 Bar

Cutting should be carried out from the carbon steel side of the plate by first marking out the cutting lines and then dot punching to ensure continued visibility during the process. After cutting plates from the substrate side, all slag should be removed with an abrasive grinding disc.

Abrasive Saw – Limited straight line cutting can also be achieved using an abrasive saw (as used to cut concrete) fitted with a silicon carbide wheel.