



## TECHNICAL DATA SHEET *Oxyacetylene Welding Procedure*

### Technique on Cleaning

The most important step in welding with this composite rod is cleaning. The area to be overlaid must be cleaned thoroughly of any scale, grease, oxides and any foreign matter. Mechanical grinding is the best method for ensuring the surface is ready for application.

### Flame Characteristics

Although a neutral flame is preferred for rapid application of nickel hardfacing rods, it is best for an inexperienced operator to use a 1x to 3x carburizing flame. This reduces the chance of oxidation of the base metal and of the carbide.

Torch tip recommendations:

- a. For large diameter rods (7/16 & 5/16") it is preferred to use a rosebud torch tip.
- b. For medium diameter rods (1/4, 3/16, 5/32") it is preferred to use a #4 or #5 torch tip.
- c. For small diameter rods (1/8, 3/32, 1/16") it is preferred to use a #3 torch tip.

### Procedure

Heat base metal until it begins to "sweat". At this point introduce rod into cone of flame and begin applying to base metal. The nickel alloy should flow onto the base metal. If it balls up, temperature is too low, adversely. If the nickel runs along the base metal uncontrolled, the base metal is too hot. The proper base metal temperature must be maintained throughout the application.

Fluidity of the composite rod can vary considerably depending on the size and percentage of carbide in the rod. It is best to work the overlay slowly and gently with as little temperature as possible. Allow the composite rod to precede the torch rather than follow it, if necessary use the rod as a pushing and smoothing tool while applying just enough heat to melt the matrix. It would be beneficial for a beginner to practice on a scrap piece of steel before tackling the actual part to be hard-faced.

### Flux

These composite rods are self-fluxing alloys and will wet in well to most base metals. For base metals which oxidize very easy, a high temperature flux paste should be applied to the surface of the base metal being overlaid.

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