

COMPOSITE RODS



Specially selected Tungchip Tungsten Carbide Grit either "blocky" with sharp edges for cutting application or "rounded" Tungchip Tungsten Carbide Grit for wear applications are produced under stringent quality controls. Material is thoroughly cleaned to ensure the best possible wetting properties, both during manufacture and application. Stringent quality control procedures ensure repeatability of excellent quality, low fuming rod. The Tungchip Tungsten Carbide Grit is blended with a Copper, Nickel and Zinc alloy, to produce a premium quality Composite Rod. (Matrix designation AWS-RBCuZn-D).

DRILLING TOOLS INCLUDING

- Reamers
- Openers
- Fishing Tools
- Casing Cutters
- Milling Tools
- Coring Tools
- Stabilizers
- Screw Feeders
- Slurry Paddles
- Construction Drilling
- Foundry sand mixing
- General abrasive wear prevention

Two grades are available, either BBW for wear applications or BBC for cutting applications

SIZES STOCKED

1/16" x 1/8" (1.6 x 3.2 mm) BBW
3/16" x 1/8" (3.2 x 4.8 mm) BBW
(1 x 2 mm) BBW
(2 x 4 mm) BBW
1/4" x 3/16" (4.8 x 6.4 mm) BBC
5/16" x 1/4" (6.4 x 7.9mm) BBC
3/8" x 5/16" (7.9 x 9.5 mm) BBC
1/2" x 3/8" (9.5 x 12.7 mm) BBC
Other sizes on request

SPECIFICATIONS

Standard Tungchip Tungsten Carbide Grit content = 65%
Also available 50%, 60% & 70%
Balance: Matrix (RbCuZn-D)

ROD WEIGHTS AVAILABLE

225g, 450g (standard) and 650g Rod length 450mm



OXYACETYLENE APPLICATION FOR TUNGSTEN CARBIDE COMPOSITE ROD

FLAME CHARACTERISTICS

Although a neutral flame is preferred for rapid application of Composite Rod, it is best for the inexperienced operator to use a slightly carburizing flame. The lower temperature and lack of oxidant will prevent the Composite Rod matrix material from losing some of its alloying material. Composite Rod materials which have been overheated exhibit a "pocked" bubbly surface. While not extremely detrimental to the wear ability of Composite Rod, the condition does somewhat embrittle the matrix and slightly lowers its tensile strength.

SURFACE PREPARATION

The first important consideration in working with the Composite Rod is cleaning. The areas to be overlaid must be thoroughly cleaned of grease, oxide, scale or other foreign matter. Any method may be used for cleaning which will result in essentially a base metal surface. Fluxes will clean metal to a certain extent, but superior results will be evident from thorough precleaning.

FLUX

Flux serves two main purposes. The first is to remove all foreign elements from the surface to be coated. The second is to prevent oxidation of the surface being coated. If an area is left unfluxed, the torch heat will rapidly oxidize the base material and prevent adhesion of the Composite Rod material to the base material.

APPLICATION

- 1) Thoroughly clean the base metal.
- 2) Lightly heat base material then apply flux. A little heat before applying powdered flux helps it stick to the base material, as the torch has a tendency to blow the flux away.
- 3) Gently heat the base material to melt flux, observe its coverage and correct any bare spots.
- 4) Applying a coating of Tungchip Tinning Rod can assist in the adhesion of the Composite Rod to the base material. The tinning rod can also be used to fill voids and give a smooth appearance if required.
- 5) Heat base material until it just begins to turn red. At this point begin applying rod to base material. The Tungchip Tinning Rod should flow onto the base material. If the Tungchip Tinning Rod balls up, it is not hot enough. Adversely, if the Tungchip Tinning Rod runs across the base material it is too hot. Care must be taken to maintain the proper temperature of the base material during application.
- 6) Composite Rod is sluggish and does not flow easily. How it flows can vary considerably, depending on the size and percentage of the Tungchip Tungsten Carbide Grit in the rod. Explanation of the exact technique for application is difficult but certain general advice can be given. Work slowly and gently with as little heat as possible. Allow the Composite Rod to precede the torch rather than follow it. If necessary use the rod as a pushing, packing and smoothing tool while applying just enough heat to melt the matrix. It would probably be beneficial for the beginner to practice on a scrap piece of steel before tackling the actual parts to be hardfaced. With practice good coatings can easily be made.

Our products and any recommended practices, should be tested by the user under actual service conditions to determine their suitability for any particular purpose. The results obtained using this product / information are affected by variables such as welding procedure, base material composition, operating temperature, weldmet design, method of fabrication and service requirements which are beyond our control. It is the sole responsibility of the user to determine the serviceability of a structure using this product and the information contained in this data sheet. The technical information given in this data sheet reflects the present state of knowledge and does not form part of any sales contract as guaranteed properties of the delivered materials.



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