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Technical Data Sheet
Overlay Hard Facing Composite Rod

The *ADVANCED ALLOYS INC.* composite rod is a single stick electrode type material made for hard facing using a oxy-acetylene torch application procedure. The rod is composed of 40, 50, 60, 65 or 70 percent of sintered tungsten carbide/cobalt particles. The particles are carefully sized to specifications and then embedded in a matrix that fits your application. The matrix is composed of copper, nickel, and zinc and has a hardness of 18/20 Rc.

The percentage of particles in the matrix should be determined by your application. Typically, larger sizes of WCCO are for cutting action and smaller sizes are used for wear protection on tools/parts in production.

The sintered tungsten carbide/cobalt to be embedded into the matrix is agglomerated together with the matrix materials and processed through a furnace to make a rod shape. The rod can be bare or flux coated, depending on your production needs. Flux and tinning rod are available based on your application need.

The tungsten carbide particles to be embedded into the matrix are available in the following sizes:

1/2" x 3/8"	1/8" x 1/16" (6/10 mesh)
3/8" x 5/16"	10/18 mesh
5/16" x 1/4"	20/30 mesh
1/4" x 3/16"	30/40 mesh
3/16" x 1/8"	others as required



The composite rods are approximately 18" in length and 12 oz in weight. Horseshoe rod is also available and is approximately 15" in length and 8 oz in weight. This same chemistry can be made as wear pads approximately 3" x 6".

Chemistry of the tungsten carbide/cobalt particles:

Tungsten Carbide	92-94% (includes 5-6% carbon)
Cobalt	6-8%