



## **AMTEC P 666 SPRAY AND FUSE POWDER**

### **FINE TUNGSTEN HARDSURFACING OVERLAY**

#### **General Characteristics**

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Amtec P 666 is a special, gas atomized, spherically shaped, nickel based, spray and fuse “puddle torch” powder containing Chromium, Silicon and Boron elements, blended with fine tungsten particles for hardsurfacing on steel and other ferrous metals. It has a particle size that enhances the bonding capabilities, and reduces over-spray. The metallurgical structure of this powder makes it excellent for abrasion and frictional wear resistance, even in the most severe conditions. P 666 is resistant to corrosion, even at high temperatures. It contains certain synergistic elements that make it self-wetting on steel, cast iron, stainless steel, nickel and nickel based alloys. Use P 666 when a very hard deposit is required. Finishing must be accomplished by grinding with water cooled silicon carbide or diamond wheels only.

#### **Procedure**

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The area to be overlaid must be cleaned just prior to applying the powder. It is recommended to use a grinder to clean and roughen the surface to be sprayed. Preheat the entire area to 600°F (a blue tint to the metal will be seen) and spray a thin layer of powder over the entire area to be built up, keeping the torch at least 2-3” above the workpiece. Without spraying any more powder, lower the torch flame to  $\frac{3}{4}$ ” to 1” from the surface and wet the alloy out. The part will be a dull red and the powder will start to look glassy as it fuses. To increase the thickness of the deposit, spray over the fused alloy and continue to spray and fuse until the necessary build-up has been reached.

#### **Application**

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Amtec P 666 is used primarily as a final coat on any type of ferrous metal. Use it when severe abrasion resistance is needed when coming in contact with gravel, cement, and other abrasive media. It is also good for cutting or chopping edges such as chipper and de-barker knives. The reason for the excellent resistance to abrasion is that the fine tungsten particles are surrounded by P 199 Chrome-Nickel-Boron powder, and as it wears, the carbide particles are exposed and create a tremendous wear area, which are replaced by more tungsten particles if it is worn away.

#### **Typical Properties**

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**Nominal Chemistry:** Carbon 0.90, Iron 4.5, Silicon 4.25, Boron 3.25, Chromium 16.5, Tungsten 62.0, Nickel - Balance.

**Hardness:** (Rockwell C) (matrix) 59-62 RC  
(tungsten carbide) 72 RC

**Particle Size:** -140+325 mesh

**Melting Temperature** 1875°F

**Packaging:** Available in 1 lb. and 5 lb. containers

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**CONFIDENTIAL INFORMATION**

**Subject to change without notice**