

## **AMTEC P 222 SPRAY AND FUSE POWDER**

### **COARSE TUNGSTEN HARDSURFACING OVERLAY**

#### **General Characteristics**

---

Amtec P 222 is a special, gas atomized, spherically shaped, nickel based, spray and fuse "puddle torch" powder containing Chromium, Silicon and Boron elements, blended with coarse 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 resistance, even in the most severe conditions. P 222 contains a large percentage of coarse tungsten particles that create a gritty or gripping type surface. Thicker deposits tend to be smoother, while thin coatings will leave a gritty finish. It contains certain synergistic elements that make it self-wetting on steel, cast iron, stainless steel, nickel and nickel based alloys. Use P 222 when a very hard deposit is required. Finishing must be accomplished by grinding with water cooled silicon carbide or diamond wheels only.

#### **Procedure**

---

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 ¾" 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**

---

Amtec P 222 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 metals that require a non-slip surface, such as steel stairs and walkways. It is excellent on take-up and feed rolls that require a gritty surface. Other uses include conveyer screws, extrusion screws, guide rolls, mill guides, chains, de-barker knives, and grapple arms. The reason for the excellent resistance to abrasion is the coarse tungsten particles are surrounded by P 199 Chrome-Nickel-Boron powder, and as it wears, the carbide particles are exposed and create a tremendous gritty area, that resists wear and are replaced by other tungsten particles as it is worn away.

#### **Typical Properties**

---

**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:** -100+325 mesh

**Melting Temperature** 1875°F

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

---

**CONFIDENTIAL INFORMATION**

Subject to change without notice