



AMTEC P 199 SPRAY AND FUSE POWDER

NICKEL BASED HARDSURFACING OVERLAY

General Characteristics

Amtec P 199 is a special, gas atomized, spherically shaped, nickel based, spray and fuse “puddle torch” powder containing Chromium, Silicon and Boron elements for hardsurfacing on cast iron and steel and all 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 severe abrasion and frictional wear resistance, even in very thin overlays. P 199 resists galling at higher temperatures. It has excellent resistance to abrasive grains, hard surfaces and particle erosion. P 199 contains certain synergistic elements that make it self-wetting on steel, cast iron, stainless steel, nickel and nickel based alloys. Use P 199 when a hard deposit is required. Finishing must be accomplished by grinding 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 $\frac{3}{4}$ ” 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

Amtec P 199 is used primarily as a final coat on any type of cast iron or steel. Because of the coefficient of friction, P 199 is excellent for applications involving metal to metal wear, and is used extensively for hard overlays on parts subject to wear, such as cams, activator fingers, shredding blades, exhaust valves, valve seats, forging tools and small hammer mill paddles. It is also excellent as a spray and fuse powder on shafts that require a very hard overlay to prevent wear.

Typical Properties

Nominal Chemistry:	Carbon 0.90, Iron 4.5, Silicon 4.25, Boron 3.25, Chromium 16.5, Nickel -
Balance.	
Hardness: (Rockwell C)	59-62 RC
Particle Size:	-140+325 mesh
Melting Temperature	1875°F
Packaging:	Available in 1 lb. and 5 lb. containers

CONFIDENTIAL INFORMATION

Subject to change without notice