WEARTECH® SHS™8000HV

Hardfacing - Severe Abrasion, Thermal Spray Powder

Application Process

High Velocity Oxy-Fuel Thermal Spraying (THSP-HVOF)

Material Chemistry (wt%)

Chromium	< 22%
Boron	< 6%
Molybdenum	< 5%
Niobium	< 5%
Carbon	< 2%
Manganese	< 1%
Silicon	< 1%
Iron	Balance

Microhardness (HV0 .3)

1,000 kg/mm² typical

Wear Resistance

ASTM G65-04 Procedure B

Typical mass loss 0.07 g

Bond Strength

ASTM C633-01

10 ksi (69 MPa)

Coating Description

SHS8000HV is a glass forming iron based alloy that forms a nanocomposite comprised of a mixed amorphous and nanoscale microstructure when sprayed as a coating. SHS8000HV features exceptionally high wear resistance exceeding chrome plating, and approaching CerMets and carbides.

Key Performance Characteristics

- Excels in high abrasion, erosion environments, both wet and dry
- Very good metal to metal (two body) wear resistance
- Superior bond strength without necessity of bond coat
- Can be finished to very high surface specifications

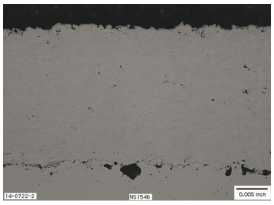
SHS8000HV coatings exhibit excellent wear resistance and superior bond strength. Superior bond strength values signify that this material has exceptional adhesion and cohesion. This also highlights the material's extremely low residual stress (even at high thicknesses) inherent in this coating type. The probability of "pull-out" of individual particles during wear, erosion and other service conditions is extremely low. Low coating permeability results in a corrosion resistant barrier. Low oxide content contributes to high bond strength due to the very limited presence of internal voids and other defects. These characteristics provide predictable coating performance across a broad variety of service environments.

Industrial Uses

Power Generation

Pulp & Paper

Coating Microstructure



Optical micrograph at 100X of a typical SHS8000HV coating on a mild steel substrate.

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