

# Hardface Coating Systems



Hardface Coating Systems provides a family of coatings or surface materials on substrate metal alloy systems for wear and corrosion applications. A titanium boron coating is applied as a liquid to the surface of another metallic object. As the liquid cools, it bonds to the surface and undergoes a chemical reaction that provides superior wear and thermal stress properties. The metallic coating combines the performance of heat treatment and alloys, bonded to the surface of the substrate.

ADVANCED MATERIALS

## Features

- Creates a hard, high wear, and corrosion-resistant surface
- Can be used on a variety of metal substrates
- Does not drastically affect mechanical heat treatments

- Castings
- Bearing Surfaces
- Tooling

## Benefits

- No heat treatment needed
- Directly bonds to the surface of the substrate
- Can be applied on finished components or fabricated on sheet materials

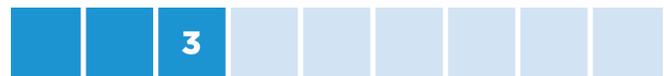
## Patents & Awards

- U.S. Patent No. 9,108,276

## Inventors

Roland D. Seals

## Technology Readiness Level (1–9)



Concept has been demonstrated in a laboratory environment.

## Applications

- Rotor Blades
- Turbine Blades
- Arc-Heaters
- Cutting Tools
- Power Generating Surfaces
- Military Hardware
- Sports Equipment

## Partnering Opportunities

Y-12 is seeking an industry partner to fully commercialize this technology.

If you would like more information, please contact the Office of Technology Commercialization and Partnerships: [OTCP@y12.doe.gov](mailto:OTCP@y12.doe.gov) (865) 241-5981 <http://www.y12.doe.gov/technologies>