

ECOBBLACK

AVION  **MANUFACTURING**

- Less than 2% VOC content
- Non-flammable, no Hazmat shipping regulations
- Excellent one-coat coverage
- Stop-off protection up to .080" case depths
- Economic alternative to foreign-made brands



ECOBBLACK

1-800-Avion93 www.avionmfg.com



YOUR BENEFIT

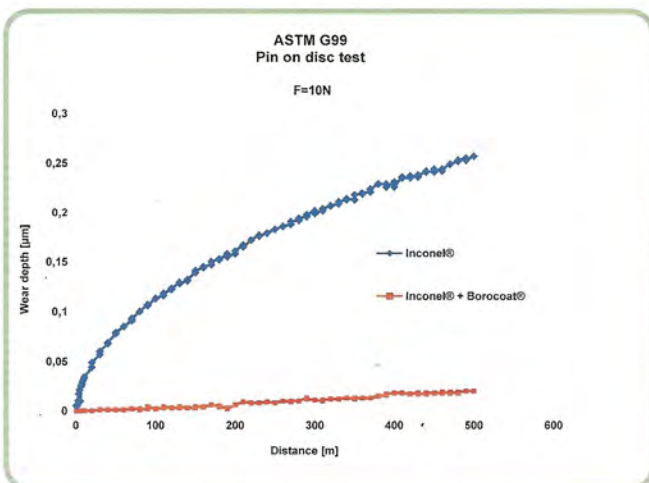
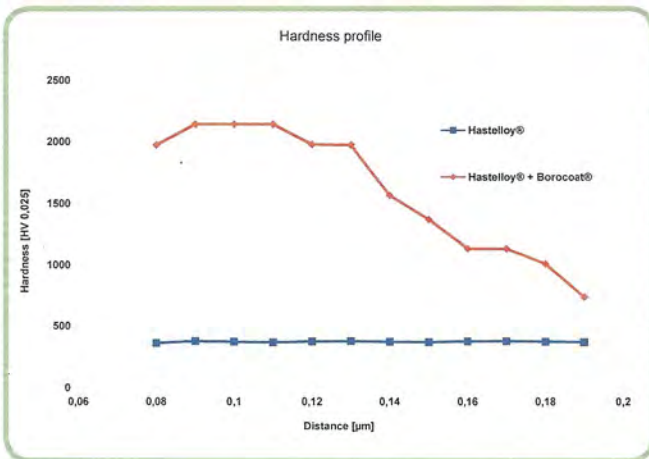
Reliable operation of security-relevant components, improvement in efficiency, higher cost effectiveness and extended value-added processes are achieved when using nickel-based alloys in connection with Borocoat®-Diffusion surface treatments. No other case-hardening diffusion process enables suchlike improvement of the mechanical properties as to the hardness and wear protection in connection with an excellent high temperature resistance. Corrosion-resistant Borocoat®-Diffusion surface treatments for nickel-based alloys. We can show you how to decisively extend the durability of your components.

MATERIALS

Nickel-based alloys such as Inconel®, Hastelloy®, Haynes®, Nimonic® etc.*

DID YOU KNOW...?

Borocoat®-Diffusion treatment is also applicable to unalloyed, low-alloyed and high-alloyed steels; also to tool-steels for cold and warm work, powder-metallurgical steels, stainless steels and Stellite®.*



FOR MORE INFORMATION AND CONSULTING

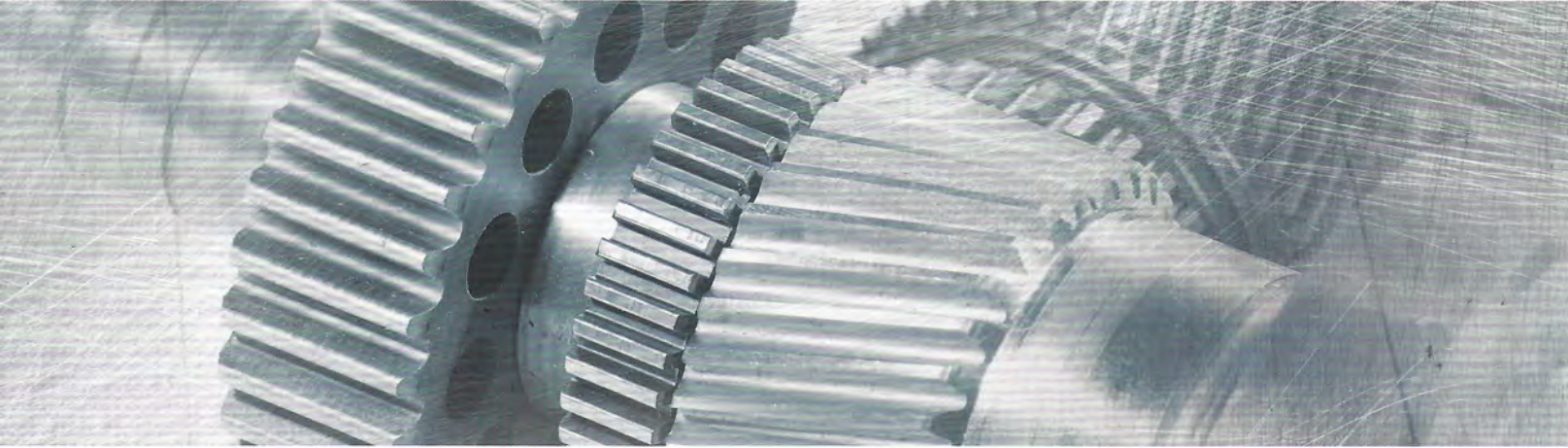
AVIONMFG.COM

2950 Westway Dr., Suite 106 • Brunswick, OH 44212
1-800-Avion93 • Tel: 330.220.2779 • Fax: 330.220.3709

*Borocoat® is a trademark registered by BorTec GmbH & Co. KG & Co. KG. Hastelloy®, Inconel®, Stellite®, Haynes® are trademarks registered by different companies.

Borocoat®

Diffusion surface treatment
for nickel-based alloys



PROPERTIES

- High surface hardness > 2000HV0.025
- Coating thickness 10-60µm
- Extreme wear resistance in highly abrasive applications
- Extreme consistency when experiencing adhesive wear
- High thermal resistance up to 1000° C
- Distinct self-lubricating effect with high temperatures
- Consistent to hot corrosion

APPLICATIONS

- Turbocharger production
- Jet engine technology
- Turbine production
- Power plant technology
- Valve technology
- Oil & gas industry
Onshore/Offshore/Subsea
- Chemical industry
- Polymer processing
- Aviation and space technology

FOR MORE INFORMATION AND CONSULTING

AVIONMFG.COM

2950 Westway Dr., Suite 106 • Brunswick, OH 44212
1-800-Avion93 • Tel: 330.220.2779 • Fax: 330.220.3709



PROPERTIES

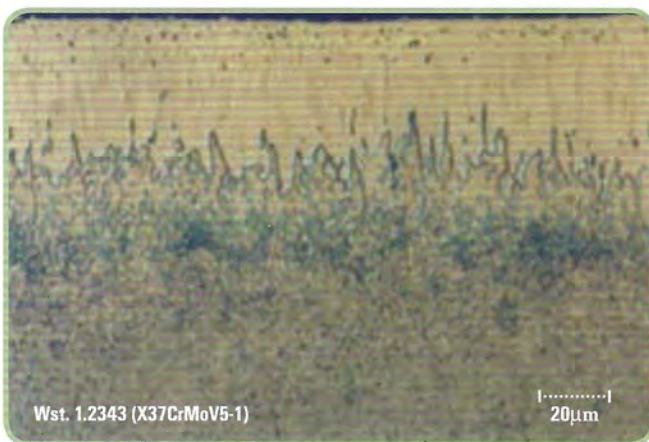
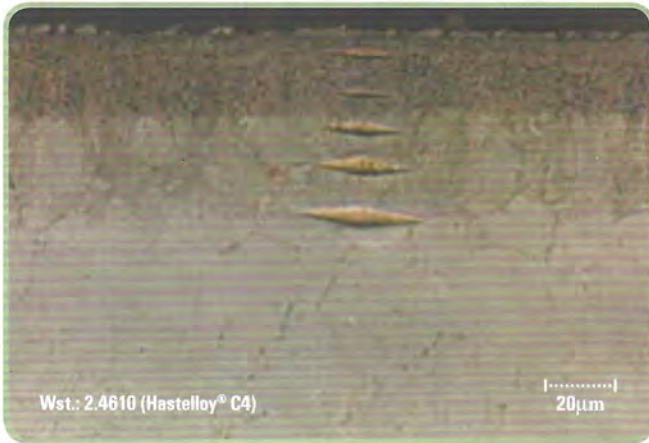
- High layer hardness of 1600 - 2800 HK (depending on the base-material)
- High hardness even on unalloyed steels
- Layer thickness 10-250 µm
- High wear resistance, high resistance to adhesion (cold welding) and abrasion
- Excellent thermal stability
- Excellent self-lubricating properties even on high temperature
- Superior bonding strength (adhesion) compared to conventional coatings due to the diffusion structure
- High resistance to molten metals (Al, Zn) and acids (HCl, H₂SO₄, H₃PO₄)

APPLICATIONS

Borocoat® diffusion coatings are extremely multifunctional and are applied within several industry sectors in order to improve friction properties and lower adhesive and abrasive wear.

Proven and tested applications:

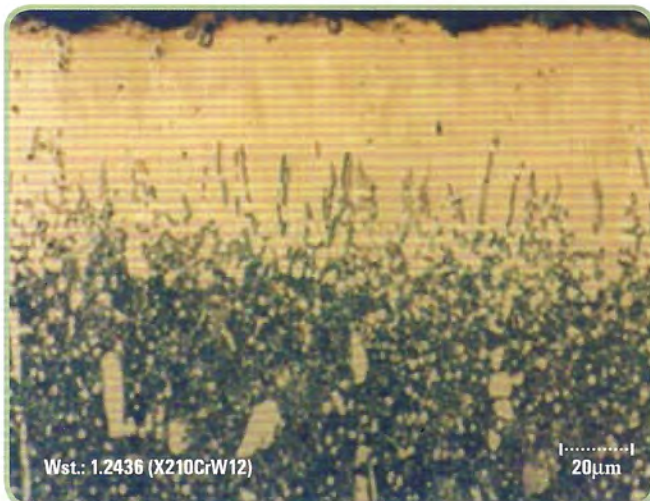
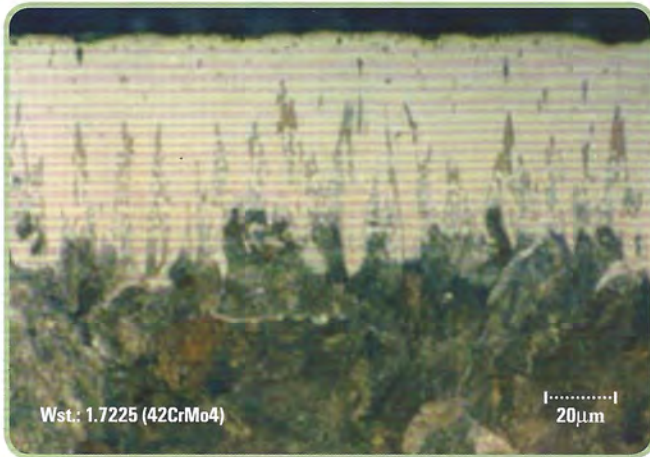
- Automotive components (turbo charger engineering)
- Oil and gas industry (valves and accessories)
- Power plant engineering
- Toolmaking and metal forming technology
- Plastics processing
- Glass production
- Gear manufacturing
- Components for textile machinery
- Aluminium processing
- Mechanical engineering



FOR MORE INFORMATION AND CONSULTING

AVIONMFG.COM

2950 Westway Dr., Suite 106 • Brunswick, OH 44212
1-800-Avion93 • Tel: 330.220.2779 • Fax: 330.220.3709



PROCESS

The Borocoat® surface treatments are carried out in a thermochemical process based on BorTec's unique Borodur®- technique. Boron atoms are diffused into the surface, forming an extremely hard diffusion layer. The partial treatment of functional surfaces, inner holes and complicated shapes is possible without difficulty.

MATERIALS

- Unalloyed and low alloyed steels
- Stainless steels (austenitic, ferritic, martensitic, duplex)
- Tool steels (hot-work, cold-work, HSS)
- Powder-metallurgical steels (CPM®, ASP®-steels)
- Nimonic®, Inconel®, Hastelloy®, Heynes®, Stellite®*

*CPM®, ASP®, Nimonic®, Inconel®, Hastelloy®, Heynes®, Stellite® are registered trade marks from various other companies not registered by BorTec.

FOR MORE INFORMATION AND CONSULTING
AVIONMFG.COM

2950 Westway Dr., Suite 106 • Brunswick, OH 44212
1-800-Avion93 • Tel: 330.220.2779 • Fax: 330.220.3709