

# NitroSteel<sup>®</sup>

a leading FNC solution

[aalberts-ht.us](http://aalberts-ht.us)





# your solution is here

NitroSteel® is a product of Aalberts surface technologies – the world’s leading provider of surface treatment technologies, services and solutions. Aalberts has been in business for more than 80 years, currently operating in over 200 facilities in 30 countries.

Aalberts delivers this core mission: unmatched solutions and services through skilled experience, innovations, shared learnings and best practices.

At Aalberts, we are committed to sustainable entrepreneurship, playing our role in achieving the Sustainable Development Goals. Our mission-critical technologies and teams afford our customers an opportunity to contribute to the betterment of our planet in the design phase of product development (globally responsible engineering). We are proud to partner with our customers in challenging the status quo, developing innovative, functionally superior products that contribute to a sustainable future.



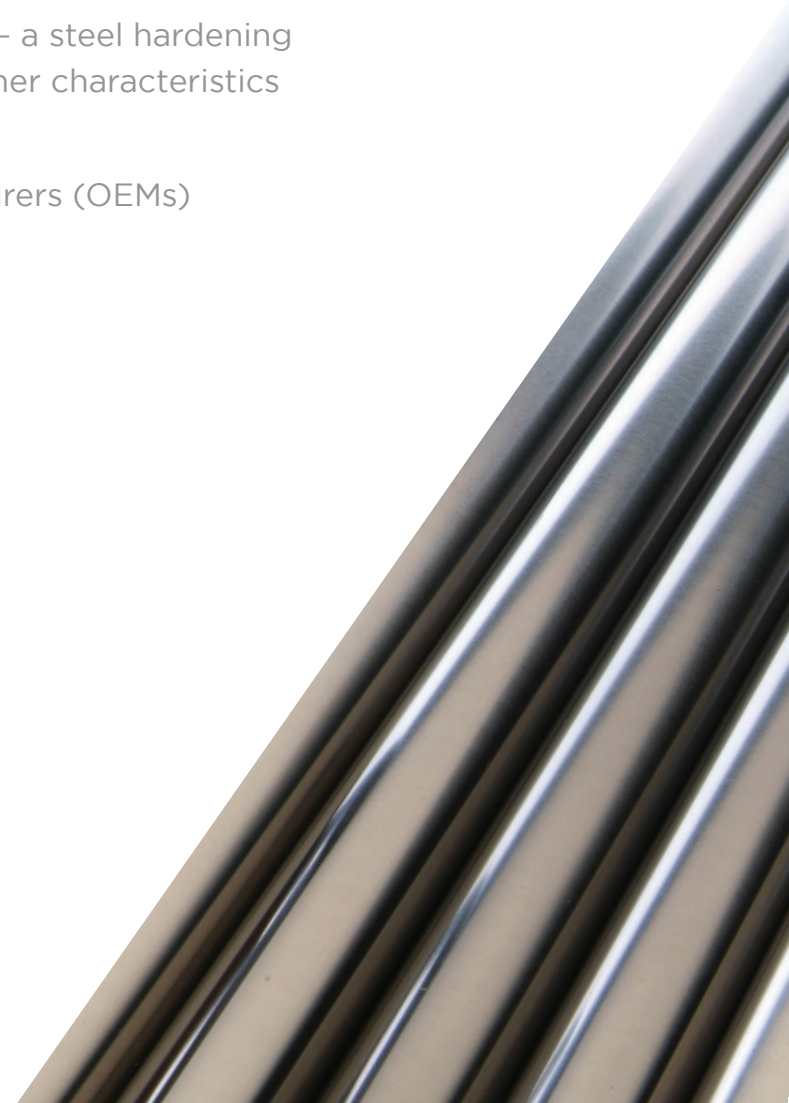


# count on NitroSteel®

NitroSteel® is a proprietary ferritic nitrocarburized product – a steel hardening process that delivers durability, corrosion resistance and other characteristics that are vastly superior to traditional chrome plating.

Field tested and specified by original equipment manufacturers (OEMs) in varying industries for more than 30 years, NitroSteel®:

- Is the only FNC application process in North America to process bars/tubes in lengths of up to 24-ft. and 36" in width
- Serves as a partner for metallurgical expertise to ensure class-leading fit/enduring finish for any application
- Supplies FNC-treated and finished materials to every region of the world
- Is an efficient and cost-effective solution for superior appearance, durability, and reduced warranty costs
- Enables our customers to extend their warranties on varying applications thanks to blister/flake-free performance on applications such as piston rods, hydraulic cylinders and custom-designed/engineered components





for any  
industry...  
and for  
any need

## NitroSteel® is the FNC solution for virtually any application

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### Agriculture

Equipment and tractors

### Forestry

Barkers, edgers  
and saw cutters

### Automotive

Aftermarket, off-road and  
racing suspension systems

### Oil

Pump barrels and lift cylinders

### Industrial Equipment

Conveyors, injection molding  
and gate control

### Construction Equipment

Cranes, trucks, excavators  
and backhoes

## NitroSteel® far exceeds traditional applications

NitroSteel®

When compared to traditional plating (e.g., chrome) applications, NitroSteel® delivers:

- Superior corrosion resistance
  - Improved wear resistance
  - Enhanced lubrication retention
  - Dent resistance
  - Elimination of pitting or flaking
  - Increased surface life
- 

## NitroSteel® is environmentally friendly while ensuring longer service life

The FNC hardening process enables a diffused layer (iron nitride) that eliminates flaking, blistering and associated rapid system failures. The results are:

- A uniformed process controlled via an atmospheric furnace, which guarantees consistent metallurgical layer formation
- No hazardous by-products for environmentally friendly applications

chrome  
plated



# sustainable process

- Absent of hexavalent chrome and trivalent chrome
- Low temperature process – electric heating
- Grinding steel swarf – fully recycled



## NitroSteel®

### standard tolerances

Bar Diameter	Size Tolerance	
	Plus	Minus
1/2" to 1½" inclusive (12.7mm to 38.1mm)	0.000	0.001" (0.0254mm)
Over 1½" to less than 2½" (38.1mm to 63.5mm)	0.000	0.0015" (0.0381mm)
2½" to 3" (63.5mm to 76.2mm)	0.000	0.002" (0.0508mm)
Over 3" to 4" inclusive (76.2mm to 101.6mm)	0.000	0.003" (0.0762mm)

### products

- Standard sizes ranging from .5" (12.7mm) to 4.0" (101.6mm)
- Standard lengths ranging from 12' (3.6576m) to 24' (7.3152m)
- Standard finish <16 Ra microinches max.
- 16 Ra microinches is equivalent to 0.4 micrometers
- Alternative alloys, diameters and lengths available upon request
- Ra levels of <9 microinches (0.225 micrometers) are available

### specifications

- 10V45 micro-alloy delivering 75,000 PSI (517 Mpa) minimum yield
- Up to 1.125" (28.575mm) diameter in 12' lengths (3.6576m)
- Up to 4" (101.6mm) in 24' (7.3152m) lengths
- Alternative alloys and non-standard sizes available
- <16 Ra finish or as specified
- Standard products = matte black surface finish

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