NITREX

ONC® PROCESS TECHNOLOGY

WHAT IS ONC®?

ONC® is applied to enhance corrosion and wear resistance of various grades of steel. It is a modern combination of the proven NITREG® potential-controlled nitriding process or the NITREG®-C potential-controlled nitrocarburizing process with an integrated post-nitriding oxidation.

HOW DOES ONC® WORK?

The process comprises 3 distinct phases:

1. NITREG® or NITREG®-C, in which automatic potential control ensures a white layer designed for optimum wear and corrosion resistance.
2. Oxidation (black), is carried out during nitriding cycle by introducing an oxidizing medium. A thin, 1–3 µm (0.00004-0.00012") hard, high temperature, complex oxide is created which further improves corrosion resistance. The result is an attractive "black", desirable appearance.
3. In most instances, a special dip process of proprietary rust inhibitors is used to add both corrosion and appearance factors. NITREX crafts its hardness layers and post oxide top layer for maximum hardness, inhibitor intake and maximum corrosion resistance.

ONC®

IS A "BLACK" OXIDE PROCESS APPLIED DURING NITROCARBURIZING THAT CAN TREAT VARIOUS GRADES OF STEEL USED IN AUTOMOTIVE, HYDRAULIC, AND TOOLING APPLICATIONS. IT IS IDEAL FOR STEELS THAT ARE EXPOSED TO A CORROSIVE ENVIRONMENT.

AMS 2759/10 2759/12* COMPLIANT

Appearance of ONC®-treated automobile wiper axles manufactured from 1144 free-machining steel

Eco-friendly technology

ONC® ADVANTAGE

→ Almost all steels can be treated by ONC® with a black, pleasing surface. The most popular applications are those exposed to corrosive environments, while retaining very good wear resistance.

To further enhance corrosion properties, NITREX offers various additional dip inhibitors for color enhancement, glossiness, or further corrosion resistance enhancement. Salt-spray test resistance features range from 240 hrs to over 800 hrs, depending on the NITREX post-process dip method chosen.

CANADA/USA
+1 514 335 7191
nitrex@nitrex.com

POLAND
+48 32 296 66 30
nitrex.europe@nitrex.com

CHINA
+86 (0) 10 6257 3050
nitrex.china@nitrex.com

NITREX
nitrex.com

NITREX

ONC® PROCESS TECHNOLOGY

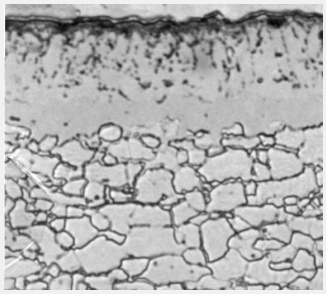
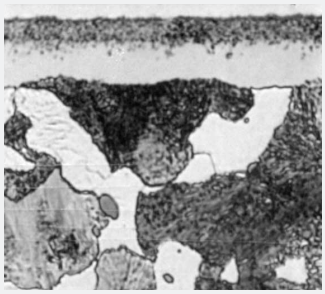
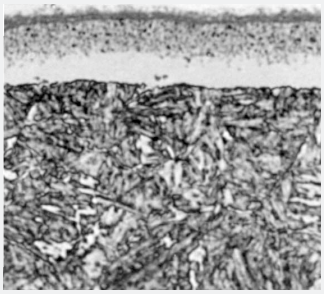
PUTTING ONC® TO THE TEST

The industry standard for steel corrosion testing is ASTM B117. NITREX has repeatedly passed testing in all steel variants with resistance exceeding 200 hours before the first small spots of corrosion appear. NITREX has also introduced special technology offering even more resistance that is even higher than the standard process. Please inquire with your NITREX Heat Treating Services sales team for these special applications.

ONC®

IS A "BLACK" OXIDE PROCESS APPLIED DURING NITROCARBURIZING THAT CAN TREAT VARIOUS GRADES OF STEEL USED IN AUTOMOTIVE, HYDRAULIC, AND TOOLING APPLICATIONS. IT IS IDEAL FOR STEELS THAT ARE EXPOSED TO A CORROSIVE ENVIRONMENT.

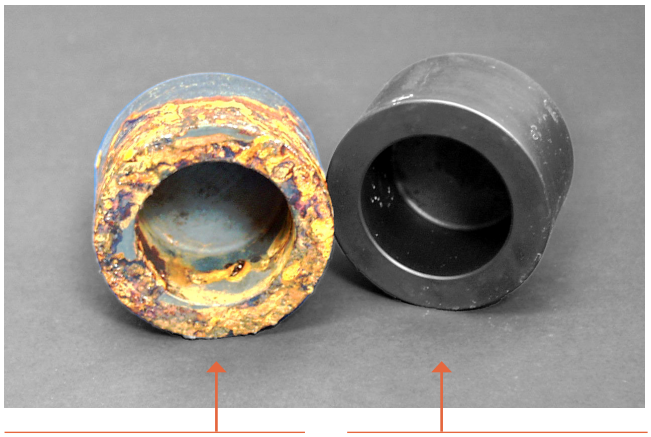
Eco-friendly technology

APPLICATION	AUTOMOTIVE SEAT RAILS	THROTTLE VALVES	AUTOMOTIVE SHAFTS
STEEL GRADE	1006	1144	4140
MICROSTRUCTURE			
Time in salt-spray to first corrosion spot:	339 hours	483 hours	239 hours

APPEARANCE AFTER 400 HOURS IN SALT SPRAY

Treated by competitive process

Treated by ONC® and coated



Treated by competitive process

Treated by ONC® and coated

CANADA/USA
+1 514 335 7191
nitrex@nitrex.com

POLAND
+48 32 296 66 30
nitrex.europe@nitrex.com

CHINA
+86 (0) 10 6257 3050
nitrex.china@nitrex.com

NITREX
nitrex.com