



OIL & GAS COATINGS



*Innovative and highly functional
surface designs*

A man wearing a yellow hard hat, safety glasses, and a red high-visibility jacket stands with his arms crossed. A walkie-talkie is clipped to his jacket. In the background, an oil rig is visible against a blue sky with light clouds.

Oil Industry Challenges

With today's oil & gas exploration pushing deeper, drilling tools have to contend with increasingly demanding conditions.

Wear, corrosion and extreme temperatures create one of the most demanding environments known to design engineers. Making matters worse, remote and offshore locations add a logistic challenge that requires your equipment to outperform and keep on drilling.

Engineered surface treatments can do an incredible job protecting equipment for harsh environments, giving you that edge required to operate faster, longer and safer.

AHC offers a wide range of surface treatment and coating solutions for protecting and enhancing critical engineered components.

The range of surface treatments available to improve the properties of products is so extensive, that designers and engineers struggle to keep up to date. The key question, which coating offers the best performance to price ratio, is often hard to answer.

AHC core competence is to support companies to make the best choice, we encourage you to challenge us!

We are specialized on enhancing the performance of components to overcome the most challenging industrial demands.

- Abrasion / Erosion
- Chemical corrosion
- Galvanic corrosion
- Friction
- Wear

Our value proposition:

- Design and application support
- Traceability
- Custom-engineered treatments
- National and international patents
- Extensive R&D and testing capabilities
- Repeatability
- ISO 9001:2008
- ISO 14001
- ISO TS 16949

Our portfolio:

Synergetic Coatings (Polymer Coatings)

- LECTROFLOUR®
- NEDOX®
- HMF®
- TUFRAM®
- Xylan®

Anodizing

- Chromic Acid
- HART-COAT®
- Sulphuric Acid

Electroless Nickel Plating

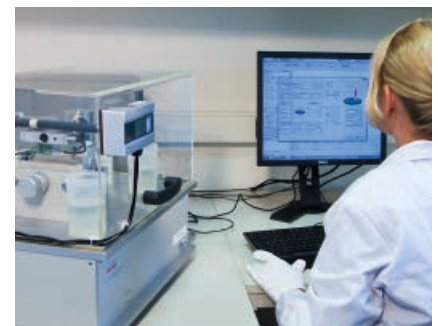
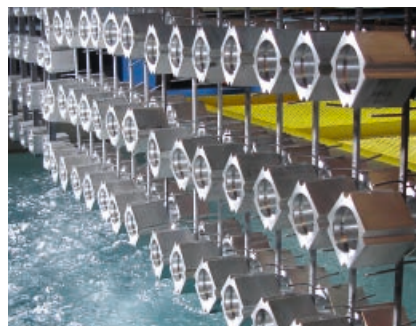
- DURNI-COAT®

High Tech Galvanics

- Copper plating
- Gold plating
- Silver plating
- Sulphamate Nickel
- Tin plating
- Brush plating

Other

- Chromating
- SELGA-COAT® CHROME





Synergetic Coatings

Performance against corrosion and wear

Synergetic coatings are designed to outperform conventional coatings protecting critical components against corrosion, wear and reducing friction.

Our applications engineers can help you select the right coating to match your field requirements and material specifications.

NEDOX®

- High level of corrosion and wear resistance
- Low coefficient of friction / Dry lubrication
- Resistance against cleaning agents and chemicals
- NEDOX® 10K-3 and NEDOX® CR+ were tested to NACE TM0284 specifications. *)



Increased wear & corrosion resistance

TUFRAM®

- Increases hardness of aluminium surfaces
- High level of wear resistance
- High level of corrosion resistance
- Low coefficient of friction / Dry lubrication
- Excellent release properties
- Resistance against aggressive cleaning agents and chemicals



Increased seawater resistance

HMF®

HMF® is a proprietary process that creates an extremely hard (up to 1,000 HV), smooth, and self lubricating finish on the surface of ferrous metal, aluminium or other metal alloys components.

The results of the process are:

- Exceptionally good abrasion resistance
- Improved surface hardness
- Permanent lubricity
- Protection against common solvents and corrosion



Improved tribology and corrosion resistance

LECTROFLOUR®

Superior resistance to metal components subjected to corrosion, chemicals and abrasive wear.

Properties:

- Superior corrosion resistance
- Self-lubricating
- Broad resistance to chemicals and acids
- Prevent abrasive wear and galling
- Complete protection at temperatures from -360°F to +550°F (-182°C to +288°C)
- A superior alternative to TFE, PTFE, PFA, FEP



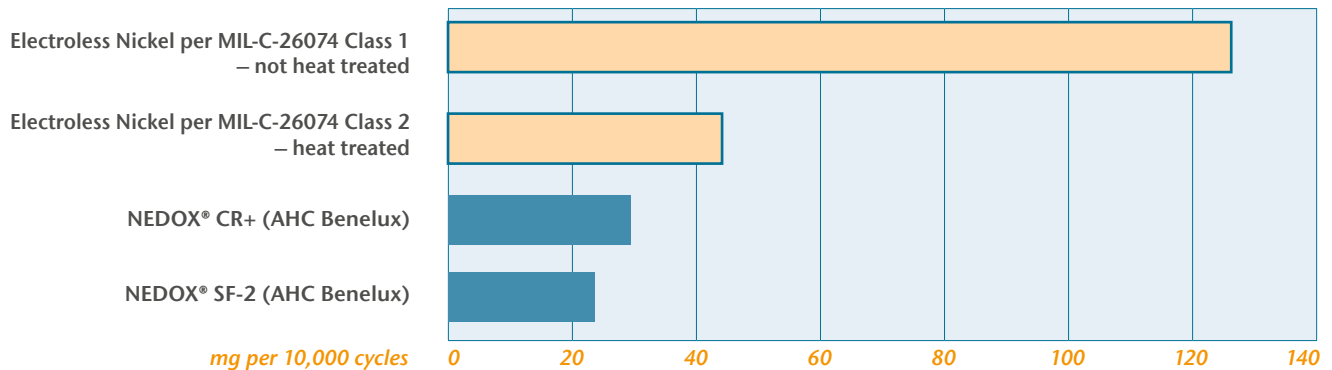
Increased hardness & improved tribology

*) Tested by General Magnaplate Corp.

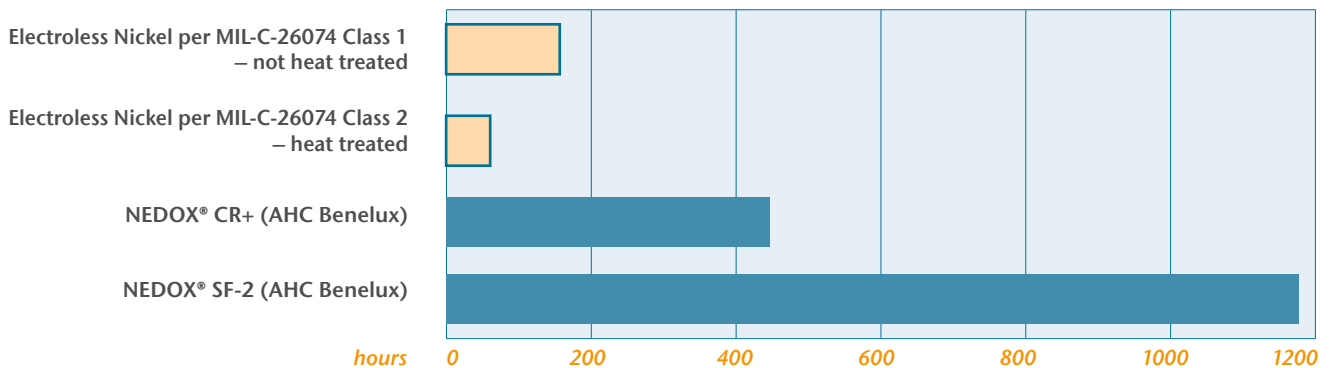
Synergetic Coatings Characteristics and Specifications

NEDOX®

Wear resistance / Using Taber Abraser, weight loss = mg per 10,000 cycles / CS-10 wheel / Layer thickness 25 µm

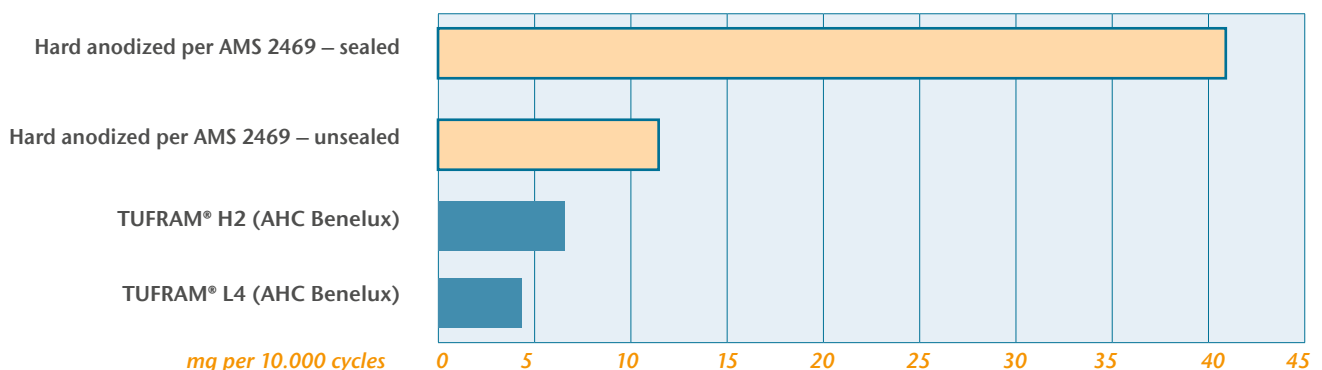


Corrosion resistance / Duration of exposure in 5 % NaCl until appearance of first corrosion spots / Layer thickness 25 µm

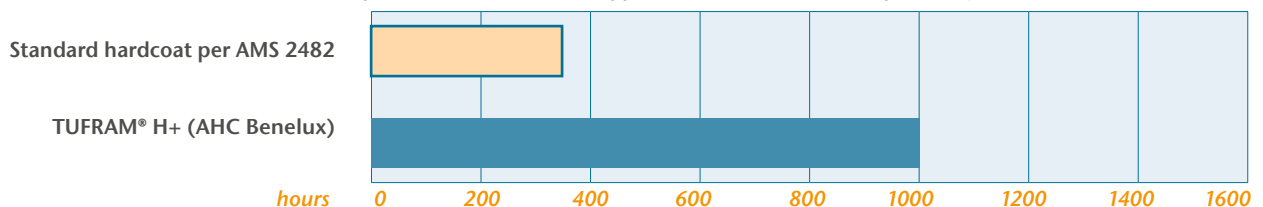


TUFRAM®

Wear resistance / Using Taber Abraser, weight loss = mg per 10,000 cycles / CS-10 wheel

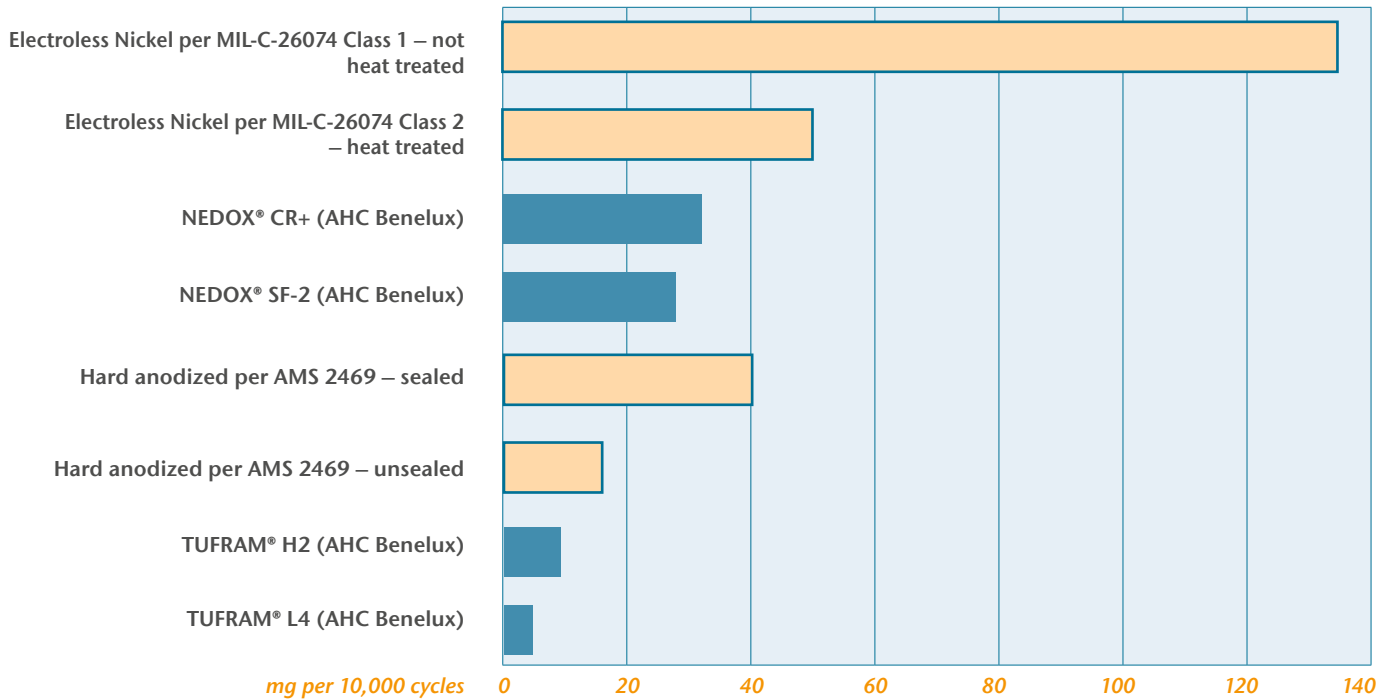


Corrosion resistance / Duration of exposure in 5 % NaCl until appearance of first corrosion spots / Layer thickness 0.002 "



Equilibrium wear rates

* Using Taber Abraser, weight loss = mg per 10,000 cycles / TUFRAM®, Hard anodized: CS-17 wheel, 1,000 mg load / NEDOX®, Electroless Nickel: CS-10 wheel using taber abrasion per ASTM B-578-87



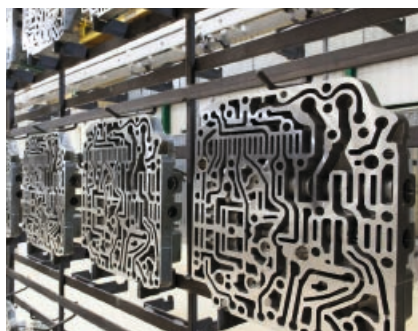
Reducing friction

Designing with the right treatment will ensure your equipment works as expected.

Friction chart		Coefficient of friction	
Material vs.	Material	Static	Kinetic
Aluminium	Aluminium	0.42	0.34
Aluminium	TUFRAM® HO	0.25	0.22
TUFRAM® H2	TUFRAM® H2	0.17	0.14
TUFRAM® L4	TUFRAM® L4	0.18	0.17
Steel	Aluminium	0.47	0.38
Steel	NEDOX® SF-2	0.30	0.26
NEDOX® SF-2	NEDOX® SF-2	0.18	0.12
Fluoropolymer	NEDOX® SF-2	0.10	0.09

AHC Benelux is specialized on enhancing the performance of components to overcome the most challenging industrial demands.

Oil & Gas problem	AHC solution examples	Metals
Abrasion / Erosion	NEDOX® SF-2 TUFRAM® L4	All metals Aluminium
Chemical corrosion	NEDOX® CR+, LECTROFLOUR® TUFRAM® H+	All metals Aluminium
Galvanic corrosion	TUFRAM® C22, TUFRAM® H+ NEDOX® CR+	Aluminium All metals
Friction	LECTROFLOUR®, HMF® TUFRAM® L4	All metals Aluminium
Wear	TUFRAM® L4, HMF® NEDOX® SF-4	Aluminium All metals



Extensive Test Capacities

This group consists of over 60 affiliated companies active in the field of heat and surface treatments. Together, Group Material Technology is now Europe's leading supplier of functional processes. AHC-Group also holds national and international patents, provides customer accredited special processes, comprehensive know-how and a worldwide chemical service.

AHC Benelux is a licensee of General Magnaplate and able to apply Magna- plate engineered and approved processes in the Netherlands for European customers.

Among some of our group test capabilities are:

- Alloy analysis
- Coating thickness
- Corrosion test
- Dimensional inspection
- Eddy current test
- Hardness test
- Metallographic analysis
- Salt spray test
- Spectral analysis
- Surface finish
- Tribometer
- Taber Abraser test



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AHC treats more than 500 billion industrial parts, at 19 European locations, with about 900 employees. We would be glad to advise you.

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