



# *Technical Overview*



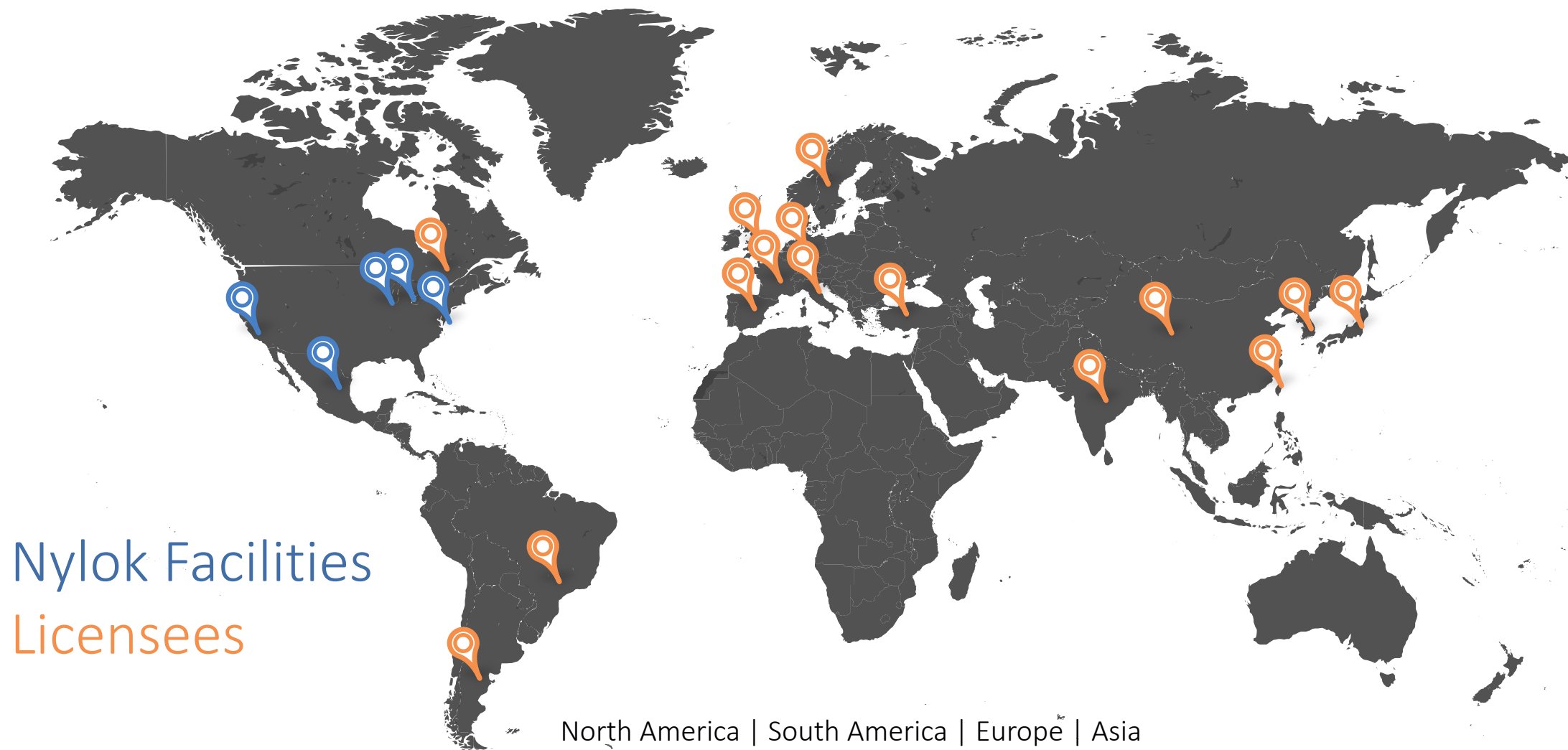
A Marmon/Berkshire Hathaway Company

- # 3 Fortune 500 List
  - Financially Stable
- Aggressive Investment Strategy
  - Seeking Growth Partners
- Decentralized Culture
  - Close to Customer



- Warren Buffett  
*Chairman and CEO Berkshire Hathaway*

# Global Support Network



# Who We Are & The Role We Play

- *First* and *largest* fully dedicated processor of self locking products in the world
  - Proven history of solving customer fastener issues for over *75 years*



Mission &  
Vision:

*Developing* Innovative Fastening Solutions Globally by  
*Engineering* Processes and *Formulating* Products



# Segmentation – Nylok Is Everywhere



Automotive



Aerospace & Defense



Rail



Industrial



Heavy Truck



Electronics

# Product Overview

## LOCKING

Mechanical  
Reusable



**precote®**



**3M**

## SEALING



**NySeal® 2.0**  
*The King of Under Head Sealants*

**NEW**  
Reusable



## ASSEMBLY AIDS



## PROTECTION



**NEW**



A Marmon / Berkshire Hathaway Company

# Locking: Mechanical vs. Chemical



Mechanical – Reusable

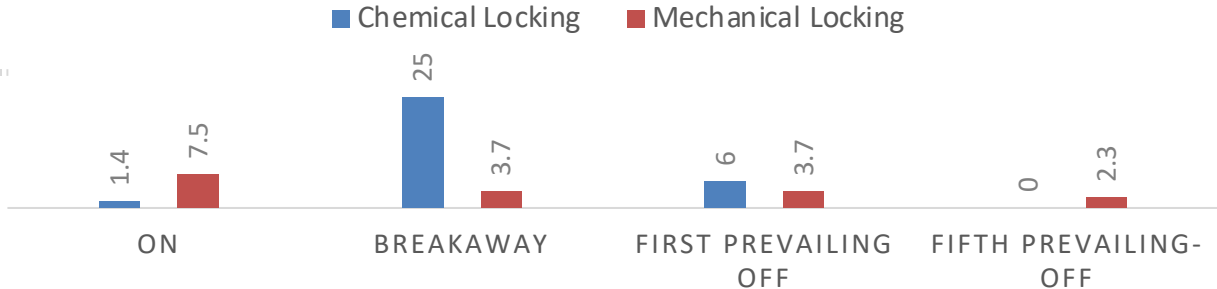


Chemical 1XUse  
**precote**

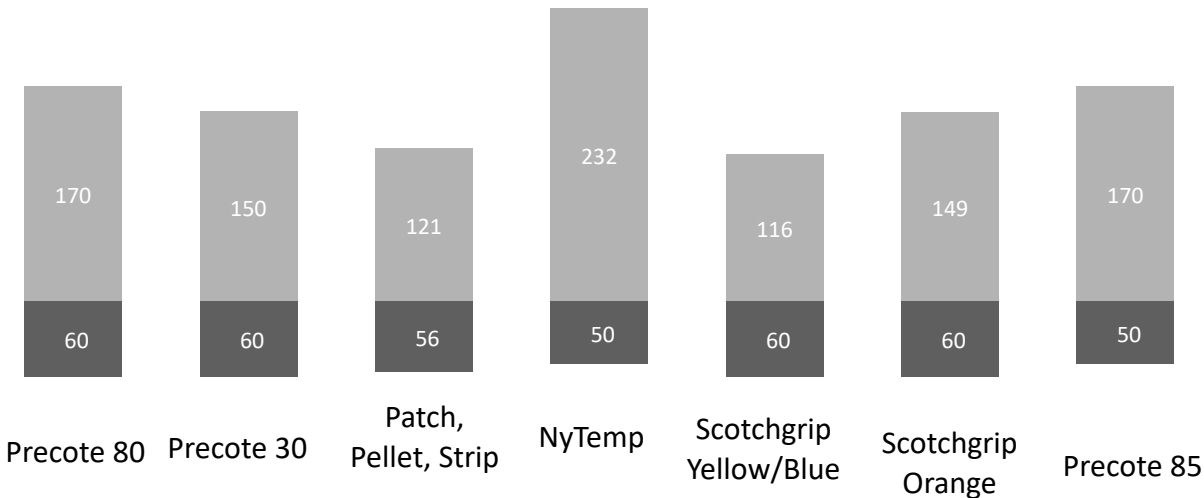


Chemical 1XUse  
**3M**

M10 EXAMPLE AVERAGE TORQUE  
(NM)



TEMPERATURE C°



# Mechanical Locking (Reusable)



Torq-Patch®



Nytemp®



NylokHD™



Pellet / Strip

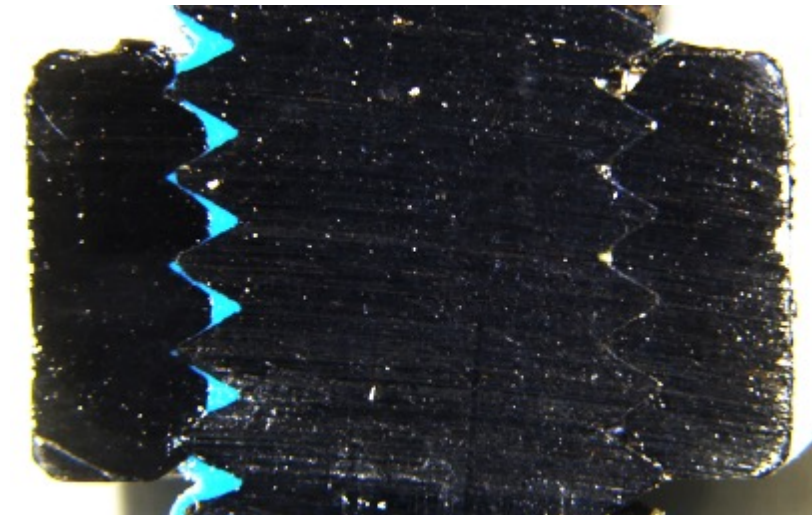
\*Available for internal and external threads

# Mechanical Locking (Reusable / Adjustable)



## *Nylon Torq-Patch® Tuflok®*

- Decrease clearance / Increase friction / Provide Prevailing Torque
  - Prevent vibration and loosening
- Also provides thread sealing
- Coverage: 180° or 360°
- Immediate locking (No waiting for chemical reaction)
- Infinite shelf life
- Temperature Range:
  - -56° C (-70° F) to 121° C (250° F)
- Specifications:
  - IFI: 100/107 (nut), 124 (Inch), 524 (Metric)
  - DIN: 267 Part 28
  - Military: MIL - DTL - 18240F, NASM15981
  - OEM: See website



# Mechanical Locking (Reusable / Adjustable)

## *Nytemp® - High Temperature Patch*

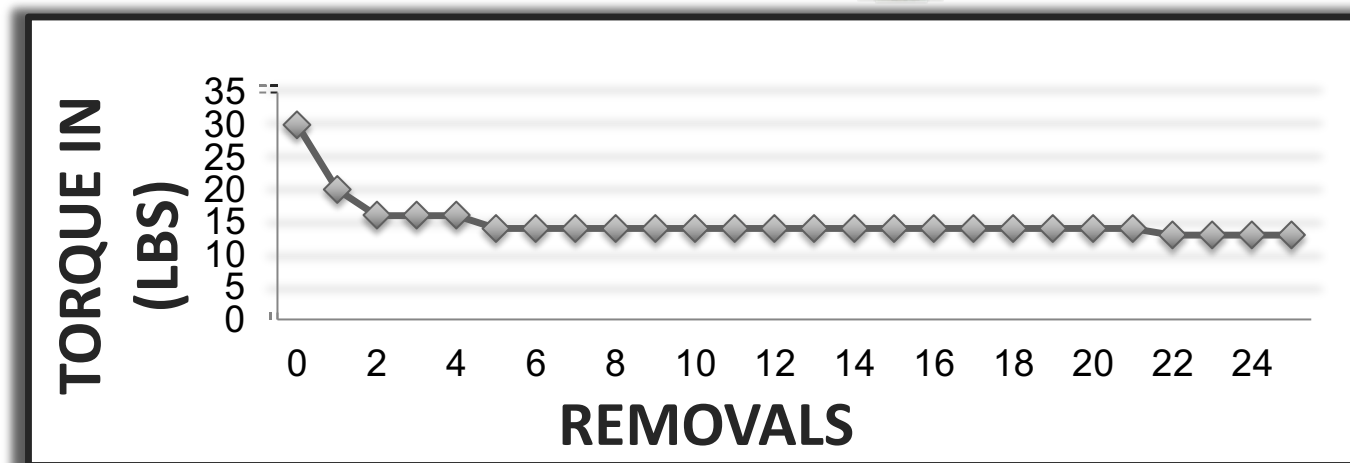
- Decrease clearance / Increase friction
  - Prevent vibration and loosening
- Passes outgassing requirements
- Temperature Range:
  - -50°C (-70°F) to +232°C (+450°F)
- Specifications:
  - IFI:— 124 (Inch)/524 (Metric) 100/107 (nut), 155, 555
  - MIL - DTL - 18240F (Military), NASM25027
  - NASA SP — R — 0022A
  - ANSI B.18.16.1M
  - AMS3670
  - OEM: See website



# Mechanical Locking (Reusable / Adjustable)

## *NylokHD® TuflokHD®*

- Best in class reusability
- Reduces installation torque scatter
- Temperature Range:
  - -56° C (-70° F) to 121° C (250° F)
- Specifications:
  - IFI – 100/107
  - NASM25027 (Military)



# Mechanical Locking (Reusable)



## *Blue Nylon Pellet & Strip*

- Decrease clearance / Increase friction
  - Prevent vibration and loosening
- Temperature Range:
  - Nylon (Standard): -70°F to 250°F (-56°C to 121°C)
  - Kel-F® (High Temp): -320°F to 350°F (-195°C to 177°C)
  - Teflon® (High Temp): -90°F to 550°F (-68°C to 288°C)
  - Vespel® (High Temp): -320°F to 700°F (-195°C to 371°C)
- Specifications:
  - IFI: 124 (Inch), 524 (Metric), 100/107 (nut), 155, 555
  - MIL - DTL - 18240F (Military)
  - OEM: See website



# Chemical Locking (1 Time Use)



**precote®**

30, 80, 85

\*Available for internal and external threads



**3M** Scotchgrip

2353, 2510

# Chemical Locking (1 Time Use)

## *Precote® 30, 80 & 85*

- Microencapsulated Adhesive Chemistry
- 360 degree coverage
- 4 year shelf life
- Seals (400 bar/5760 PSI)
- Removable w/o heat
- Temperature Range:
  - 30: -60°C (-76°F) to +150°C (+302°F)
  - 80: -60°C (-76°F) to +170°C (+338°F)
  - 85: -50°C (-58°F) to +170°C (+338°F)
- Specifications:
  - IFI – 125 (Inch) / 525 (Metric)
  - DIN 267 Part 27
  - OEM: See website



Medium strength



High strength



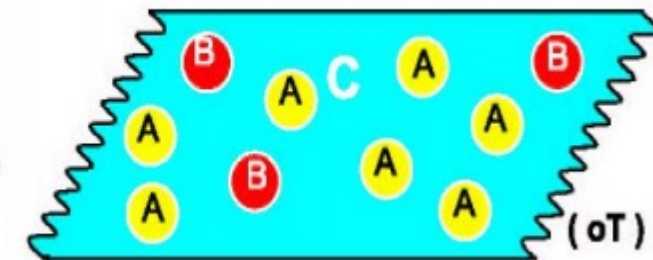
High strength w/  
Torque Tension  
modifier



④

A= acrylate

B= peroxide



CONFIDENTIAL

# Chemical Locking (1 Time Use)

## 3M™ 2353 & 2510

- Microencapsulated Adhesive Chemistry
- Seals
- Removable without heat
- 1 year shelf life
- Temperature Range:
  - 2353: -50° C to 116° C
  - 2510: -50° C to 149° C
- Specifications:
  - IFI – 125 (Inch) / 525 (Metric)
  - DIN 267 Part 27



Standard



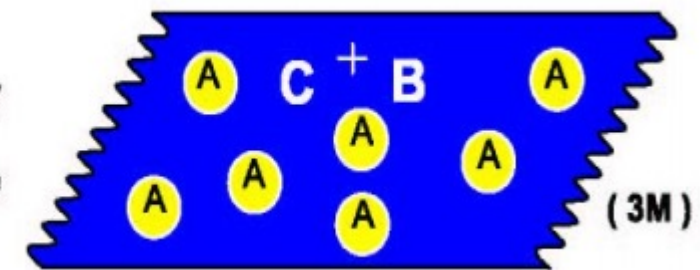
High Temperature



②

A= epoxy

B= amine



# Sealing



**NySeal® 2.0**  
*The King of Under Head Sealants*



Nyseal®



Nyplas®



**precote® 200**



**precote® 5**



**3M** Thread  
Sealant 4291

# Sealing (Reusable)

## Nyseal® 2.0

- Eliminates leak paths and prevents leakage of fluids and gases up to 500 psi (3447kPa)
  - Eliminates O – rings, gaskets and sealant compounds
  - Reusable
- Resistant to most chemicals
- Does not break down mating acrylics surfaces (like plastisol) and therefore prevents fogging of lens
- Often used for LED lighting
- Prevents Galvanic Corrosion
- Temperature Range:
  - -40°C (-40°F) to +66°C (+150°F)
- Specifications
  - Ford WSS-M21P2]7-A5



# Sealing

## *Nyseal®*

- Eliminates leak paths and prevents leakage of fluids and gases up to 500 psi (3447kPa)
  - Eliminates O – rings, gaskets and sealant compounds
  - Reusable
- Resistant to most chemicals
- Does not break down mating acrylics surfaces (like plastisol) and therefore prevents fogging of lens
- Often used for LED lighting
- Prevents Galvanic Corrosion
- Temperature Range:
  - -40°C (-40°F) to +66°C (+150°F)
- Specifications
  - Ford WSS-M21P2]7-A5



## *Nyplas*®

- Provides sealing against water, moisture, dust, air and noise dampening
- Temperature Range:
  - -40°C (-40°F) to +150°C to (+300°F)
- Specifications:
  - OEM: See website



## *Precote® 200*

- Seals against oil, automotive fluids, water, dust, moisture and prevents galvanic corrosion
- Does not break down mating acrylics surfaces preventing fogging of lens
- Often used for LED lighting
- Temperature Range:
  - -40°C (-40°F) to +100°C (+212°F)
- Specifications:
  - Ford WSS-M4G35-A/A2



## *Precote® 5*

- Seals threads and prevents leakage
- Used in many cases to replace Teflon tape
- Pre-applied with consistent coverage in proper location
- Reduces labor and improves quality
- Temperature Range:
  - -60° C (-75° F) to 160° C (320° F)
- Specifications:
  - OEM: See website



## *3M™ Thread Sealant 4291*

- Seals threads paths preventing any leakage
- Used in many cases to replace Teflon tape
- Pre-applied with consistent coverage in proper location
- Reduces labor and improves quality
- Temperature Range:
  - -56° C (-70° F) to 149° C (300° F)



# Safety / Protection



Nystay®



Nycote® Plus &  
Nycote®



Nytorg®

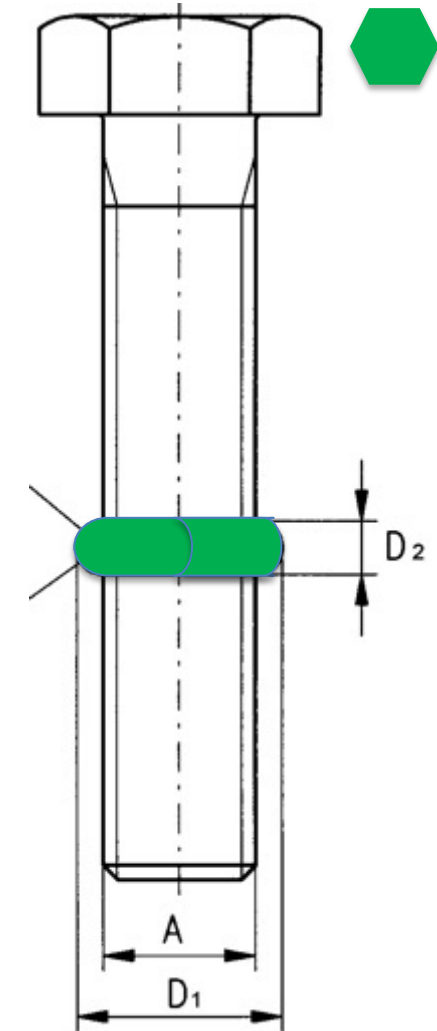


Nyplate®

# Safety (Assembly Ergonomics)

## *Nystay*®

- Fastener retention solution allowing the fastener to be held in place during production and transport without affecting the end assembly
- Temperature Range:
  - -40°C (-40°F) to +66°C (+150°F)
- Specifications:
  - GM – GMW3666



# Safety / Protection

## *Nycote® Plus (Nycote®)*

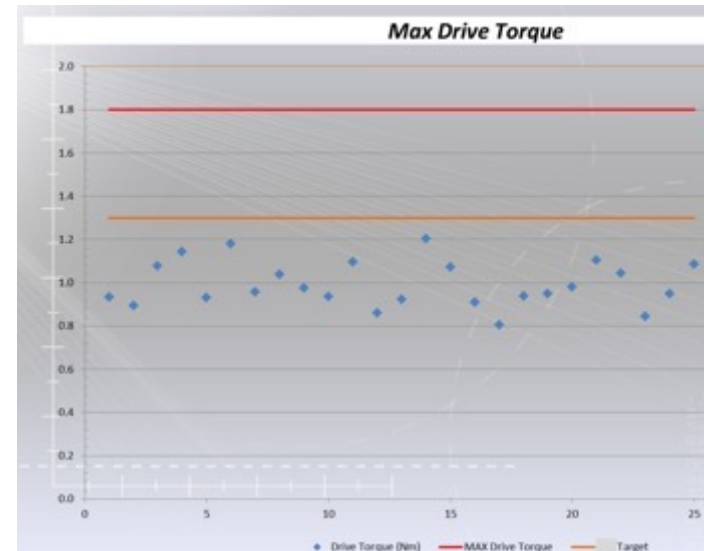
- Thread masking prevents weld spatter, electro-deposited primers or coating from adhering to the threads
- Eliminates manual plug/inserts & re-tapping rework
- Specifications:
  - OEM: See website



# Safety (Ergonomics)

## Nytorq®

- Pre-applied thread lubricant
  - Reduces friction and prevents cold welding
- Temperature Range:
  - -70°C (-94°F) to +120°C (+248°F)
- Specifications:
  - OEM: See website



## *Nyplate®*

- Pre-applied thread anti-seize
  - Accommodates high rundown on assembly without:
    - Galling
    - Torque chattering
    - Cold welding
- Stainless steel applications
- Temperature Range:
  - -60°C (-76°F) to +850°C (+1562°F)



# Galvanic Corrosion Prevention – NyShield®

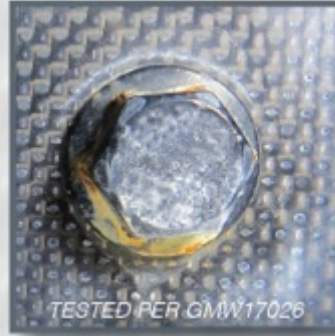
## CORROSION TEST RESULTS

### STEEL FASTENERS ON CARBON FIBER - 15 YEAR SIMULATION

CONTROL – GMW3359



NYSHIELD™ – ZINC FINISH

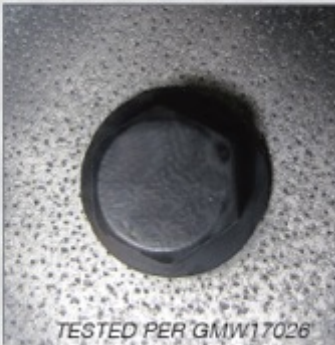


### STEEL FASTENERS ON MAGNESIUM - 15 YEAR SIMULATION

CONTROL – GMW3359



NYSHIELD™ – ZINC FINISH



\*Also prevents short circuits by providing di-electric barrier

# Additional Resources



- Questions [sales@nylok.com](mailto:sales@nylok.com)
- Download 101 presentation @ [nylok.com](http://nylok.com)
- Schedule Nylok Training
  - 201 – Technical Lunch & Learn
  - 301 – “How it’s Made” Facility Tour
  - 401 – Bottleneck Hunting (OEM Line Walks)
  - 501 – Blueprinting “Wouldn’t it be nice if”

