

Blinex™
Since 1975

CORROSION PROTECTION + FILTRATION
COMPLETED 40 YEARS

BLINEX FILTER - COAT PVT. LTD.
An ISO 9001:2008 CERTIFIED ORGANIZATION



MANUFACTURER & EXPORTER

FLUOROCARBON / PTFE / FLUOROPOLYMER
TEFCOT™ - HIGH PERFORMANCE
CORROSION RESISTANT COATED FASTENERS
STUDS, BOLTS, NUTS & SCREWS
FOR OFFSHORE & OIL GAS INDUSTRIES

SPECIALIZED IN

CORROSION RESISTANCE COATINGS
ON STUD BOLTS, NUTS, FASTENERS
FOR THE OIL, GAS, PETROCHEMICAL,
POWER, MARINE INDUSTRIES &
OFFSHORE INDUSTRIES



Contact

KIRTAN R. DHAMI

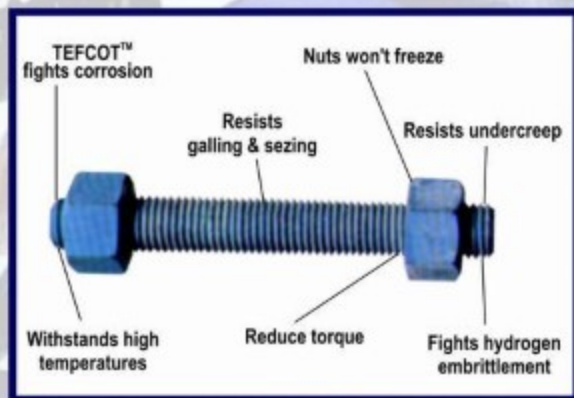
B.E. (Prod.), DIPI (Lon.), M.B.A., P&CI (NACE)

Director (Technical & Exports)

Mobile : +91-9892060191

BLINEX FILTER - COAT PVT. LTD.





FLUOROPOLYMER / PTFE - TEFCOTTM

HIGH PERFORMANCE FLUOROCARBON COATED FASTENERS - STUDS, BOLTS, NUTS & SCREWS

For Offshore and Oil Gas Industries

Since 1972, with the introduction of Fluoropolymer coating in America, **TEFCOTTM** coated studs bolts and nuts are widely used for enhanced corrosion resistance, permanent thread lubrication and consistently low applied torque to induced tension (clamping load). Since then, almost all international petrochemical, oil drilling rigs and chemical process industries have specified these studs for both offshore and land based applications. Apart from these **TEFCOTTM** coated B7 stud, bolts are installed under sea splash zones and chemical environments with great success.

The use of **TEFCOTTM** coated bolts is increasing in industrial applications, offshore, petrochemicals and marine industries due to their property of withstanding extreme corrosive environments and providing permanent lubrication over a very wide temperature range.

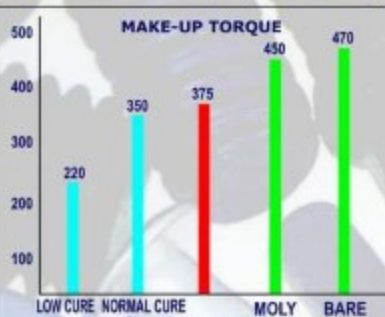
The introduction of P.T.F.E. (Fluoropolymer) as a surface coating material provided **TEFCOTTM** with a product, which would, after development, defeat both problems simultaneously.

Over a phosphate pretreatment, a **TEFCOTTM** system far exceeds in performance when compared with galvanised, cadmium plated, aluminised or moly-coated studs and other premium types of studs. A **TEFCOTTM** coating prevents galling and reduces both 'make-up' and 'break-out' torques.

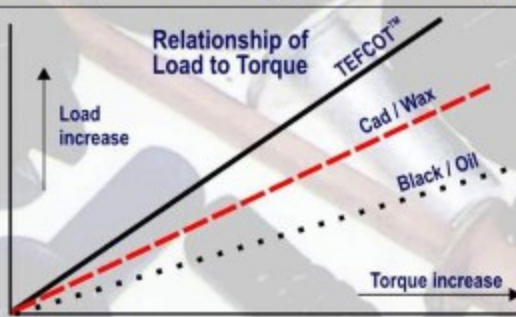
TECHNICAL SPECIFICATIONS OF PTFE

1. Thickness of Coating : 25 microns TO 40 microns
2. Temperature Resistance :- 100° C to + 260° C
3. Operating Pressure : Up to 1,00,00 PSI
4. Salt Spray Life up to 3,000 Hrs as per ASTM B117
5. Pencil Hardness : 4H - 6H (ASTM D3363-92A)
6. Adhesion : 5B (ASTM D3359-95)
7. Kinetic Friction Coefficient : 0.06 0.08
8. Impact : 160 in lb (ASTM D2794-93)
9. Elongation : 35%-50%
10. Co-efficient of Friction : As low as 0.02

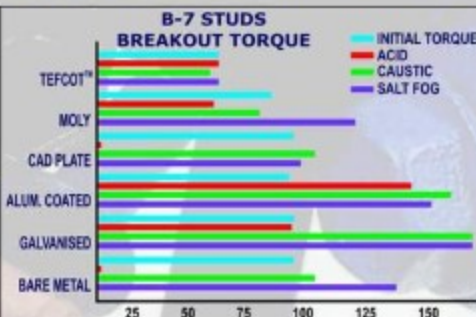
The chart shows that make-up torque is considerably less with a **TEFCOT™** coating and that the **TEFCOT™** stud shows the least scatter of clamp load to applied torque, therefore the greatest uniformity, of all the materials tested.



The make-up torque recorded here was measured by first tightening a nut against a contained rubber bushing until snug. The nut was then rotated for two turns and the make-up force required was measured. Least torque was recorded for the bolts with the **TEFCOT™** coating.



Blinex recommends the use of direct-tension indicators (DTI) to determine proper make-up torque for each size or lot of fasteners used on a given application.



BREAKOUT TORQUE (FOOT POUNDS)

Torque for breakout was measured by tightening the nut to a known force (100 foot pounds). After 720 hrs. in the four environments the force needed to break each connection was then measured. The **TEFCOT™** coated nuts outperformed all others.



Capabilities

BLINEX FILTER COAT PVT LTD has 5,000 square feet of production space dedicated to the coating of fasteners. A variety of fastener types and sizes are coated at our facility.

Supplying PTFE Coated Fasteners in High Tensile & Stainless Steel

1. Studs/Bolts : Grades ASTM A 193 : GR B7, B7M, B 16, L7, B8, B8M, SS 306, SS 316
2. Nuts : Grades ASTM A 194 : GR 2H, 2HM, GR, GR 8, GR 8M, IS 1367, GR 8.8, 10.9, 12.9, SS 306

Fluoropolymer Coating Process for the 21st Century

BLINEX FILTER COAT PVT LTD has perfected the Fluoropolymer fastener coating process. Surface preparation of the fastener prior to coating is a very important step. We use the latest industry accepted methods to thoroughly clean all contaminants from the fasteners. Manufacturing oils, rust and scale are removed to ensure the highest quality coating.

Superior corrosion resistance is created by the application of a series of coatings. A metallic base coat is applied first, followed by an adhesion coat. The adhesion coat creates a chemical bond between the base coat and the top coat. The top coat, a heat cured fluoropolymer coating containing PTFE, is used to seal the two under coatings and give easy on/easy off characteristics.

BLINEX FILTER COAT PVT LTD Coating process fully protects fasteners by guaranteeing 100% coverage of the surfaces, even inside the nuts.

Coating Comparisons

Black, cadmium plated, and hot dipped galvanized bolts will freeze when subjected to the corrosive environments found in manufacturing plants, offshore oil rigs etc. Most often removing the nuts requires a cutting torch. With **TEFCOT™** these same nuts and bolts exhibit easy on and easy off characteristics increasing worker safety.

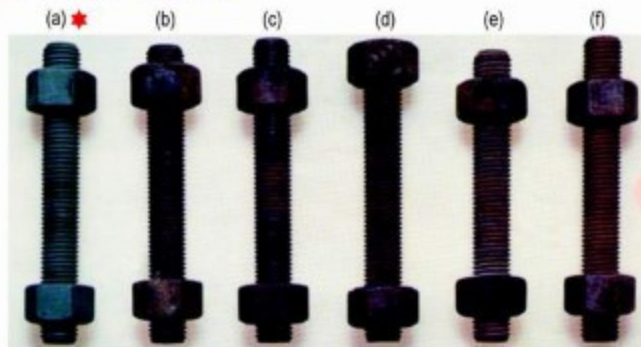
Cadmium plated and hot dipped galvanized bolts provide similar corrosion resistance. These coatings have undergone the standard salt fog test (ASTM B117) and have been rated at 96 hours of corrosion resistance. With a Blinex coated bolt that rating jumps to as much as 1000 hours.

Galvanizing produces a coating that is uneven, rough and thick. The rough surfaces make assembly difficult and a tight even tension on each bolt impossible.

ADVANTAGES OF PTFE / FLUOROPOLYMER COATED FASTENERS

- Non - Stick , Excellent Corrosion Resistance in Nature.
- High Durability and Good Abrasion Resistance .
- PTFE Coated mild Steel Fasteners are low on cost as compared to Stainless Steel Fasteners.
- Suitable for High and Low Temperature Ranges .
- Torch Cutting can be avoided for offshore or marine applications as it enhances lubrication and non-stick properties and maintains a low co-efficient of friction in both makeup and breakout operations .
- PTFE Coated Fasteners can be re-used .

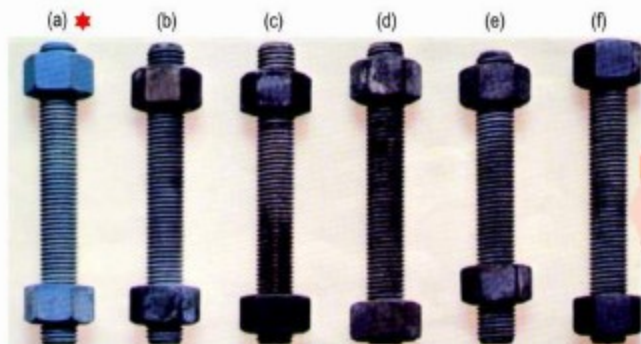
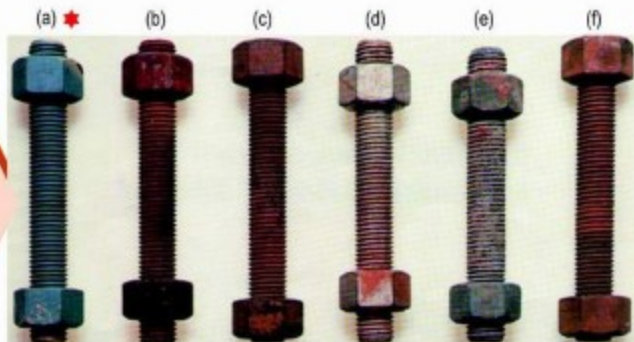



ACID TEST - stud bolts subjected to 720 hours in 15% HCL at ambient temperature

- | | | |
|--|--|--|
| (a) PTFE Coated Bolt :
Minimal coating damage.
Nuts turn easily. Bolt still usable | (b) Cadmium Plated Bolt :
Total coating failure.
Extensive corrosion and metal attack. Nuts not frozen. | (c) Black B-7 Bolt :
Extensive corrosion
Nuts not frozen. |
| (d) Aluminized Bolt :
Total coating failure.
Extensive corrosion and metal attack. Nuts frozen. | (e) Galvanized Bolt :
Total coating failure.
Extensive corrosion and metal attack. Nuts not frozen. | (f) Moly Coated Bolt :
Extensive coating failure.
Extreme corrosion and metal attack. One nut frozen. |

BROMINE TEST - stud bolts exposed to bromine 1/10 ppm solution for 720 hours at ambient temperature

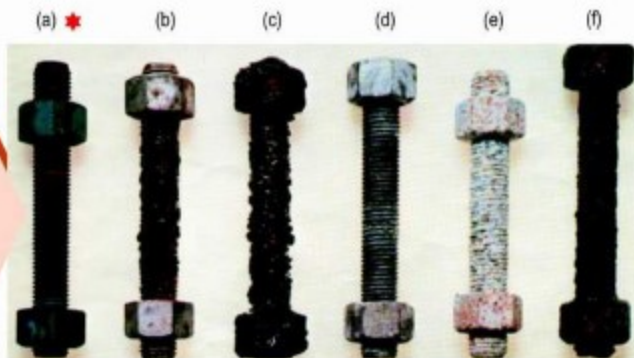
- | | | |
|---|---|---|
| (a) PTFE Coated Bolt :
Moderate coating damage.
Moderate oxidation damage. Nuts not frozen | (b) Cadmium Plated Bolt :
Total coating failure.
Severely corroded. Nuts not frozen. | (c) Black B-7 Bolt :
Considerable oxidation.
Severe blistering |
| (d) Aluminized Bolt :
Serious coating failure.
Heavy oxidation.
One nut frozen. | (e) Galvanized Bolt :
Moderate coating damage.
Heavy oxidation.
Nuts not frozen. | (f) Moly Coated Bolt :
Total coating failure.
Extreme oxidation damage.
One nut frozen. |


CAUSTIC TEST - stud bolts subjected to 12.5 pH caustic at ambient temperature for 720 hours

- | | | |
|---|--|---|
| (a) PTFE Coated Bolt :
Minimal coating damage.
Nuts turn easily. Bolt still usable | (b) Cadmium Plated Bolt :
Minimal coating damage.
Nuts not frozen. | (c) Black B-7 Bolt :
Moderate oxidation.
Nuts turn easily. |
| (d) Aluminized Bolt :
Major coating damage.
Nuts frozen. | (e) Galvanized Bolt :
Minor coating damage.
Slight oxidation. Nuts turn easily. | (f) Moly Coated Bolt :
Minor coating damage.
Slight oxidation. Nuts turn freely. |

SALT FOG TEST - stud bolts subjected to 720 hours in a 5% brine spray at 110°F. (As per ASTM B117)

- | | | |
|---|--|--|
| (a) PTFE Coated Bolt :
Moderate coating damage.
Moderate oxidation damage. Nuts not frozen | (b) Cadmium Plated Bolt :
Total coating failure.
Severely corroded. | (c) Black B-7 Bolt :
Bolt utterly destroyed.
Would fail in service. |
| (d) Aluminized Bolt :
White powder all over.
Moderate corrosive effects. Nuts frozen. | (e) Galvanized Bolt :
Heavy oxidation.
Nuts frozen. | (f) Moly Coated Bolt :
Total coating failure.
Extreme oxidation damage. |



★ **BLINEX FILTER-COAT PVT LTD Fluoropolymer Coated Stud Assembly (a)**