

Extend the life of metallic parts subject to extreme conditions.

Oil & Gas platforms as well as offshore structures are facing an aggressive environment. It is therefore crucial that all their components like large bolts, fasteners, springs, and other metal parts show excellent resistance to chemicals, sea spray, weather conditions and corrosion.

The remoteness of offshore equipment's (platforms, wind farms...) together with the high cost of their maintenance lead OEM to design materials with a long-time service. For such a purpose, long-term corrosion protection is very important. Moreover, the possibility of being able to assemble and disassemble the fasteners without damaging the coating is one of the advantages of GEOMET® solutions for such maintenance.

To avoid any risk of malfunctions or production issues, OEMs from Oil & gas and Offshore Markets require high-quality anti-corrosion systems to keep their platforms running smoothly and efficiently. Developed by NOF Metal Coatings Group, the worldwide market leader in anti-corrosion zinc flake coatings, GEOMET® is a water based multifunctional zinc and aluminium flakes technology that is widely used in the Oil & Gas and Offshore structures by major players.

GEOMET® offers high resistance to corrosion (with a resistance to the salt spray test over 5000 hours, without red rust, when applied under 20 µm thickness), making compatible with C5X classification of ISO 12944 specification. It also provides further functionalities such as a thin coating thickness ensuring no thread interference on fasteners, a surface cleaning and coating process excluding any risk of hydrogen embrittlement. Furthermore, it is compatible with paint after assembly, can be lubricated with our PLUS® series topcoats range which also bring additional features like protection from assembly tools, thermal shocks, chemicals.

High corrosion protection at low thicknesses with zinc flake coatings.

The success of GEOMET® high resistance to corrosion is the combination of 4 different mechanisms: sacrificial protection, barrier effect, self-healing and adhesion to substrate. Zinc flakes corrode (by sacrificing themselves) to protect the steel base material while the role of aluminium flakes is to slow down the corrosion action, so that the coated parts resist longer to corrosion.



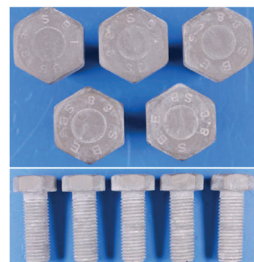
GEOMET® 321 (15 µm)
(Dip Drain Spin process)



GEOMET® 321 (10 µm) + PLUS® VLh (Spray process)



GEOMET® 321 (15 µm)
(Spray process)



GEOMET® 500 (15 µm)
(Spray process)

The overlapping of zinc and aluminium flakes acts as the tiles of a roof to provide a barrier between the metal and the corrosive atmosphere.

This structure makes it more difficult for aggressive substances to penetrate the coating and reach the metal surface.

Finally, the zinc's natural consumption produces salts that fill in small damages caused to the coating and act as corrosion inhibitors for the substrate.



Typical appearance of the GEOMET® coating after 5000 hours of Salt Spray Test.

Water-based environmentally friendly coatings.

GEOMET® zinc flakes coatings are eco-friendly waterborne coatings, with a lower carbon footprint and water consumption compared to other coatings. GEOMET® makes it possible to obtain a micro-layer (from 8 to 20 microns), which grants the metal a high resistance to corrosion. Our GEOMET® coatings also meets the latest Oil & Gas and Offshore markets requirements.

The extremely low GEOMET® coatings thicknesses are suitable even for screw threads, making our technology the reference for screws, fasteners and large parts in the Oil & Gas and Offshore industries where high-strength steel of classes up to 12.9 can be used.

The high anti-corrosion performance is not the only requirement for the Oil & Gas sector. Dimensional tolerances, screw assembly at a specific torque, friction coefficient stability after multi-tightening heat loosening, heat resistance, chemical resistance, and appearance are all important factors.



GEOMET® range of coatings are used to protect metallic parts of offshore materials, especially fasteners.

A wide range of topcoats providing many functionalities.

Designed to perform at low thicknesses, our topcoats technologies can be used on our basecoat to offer many functionalities: controlled friction, chemical resistance, increased corrosion resistance in severe environments like sea sprays. For that we developed the range of PLUS® series of topcoats.

Coatings must also act to protect against corrosion the metallic parts that are in contact with hydrochloric, phosphoric, sulfuric acids and other chemical agents. NOF Metal Coatings Group offers finishes such as GEOKOTE® which, applied on top of GEOMET® basecoat, bring, protection against mentioned aggressive substances to metal parts.



Large screws subjected to strong chemical aggressions, oils and stressed due to aggressive environment.

The knowledge gained from decades of collaboration with various OEMs enables our zinc flake coatings to ensure the durability, aesthetic appearance, and functionalities of the components for Oil & Gas and Offshore Markets.



Large fasteners coated with GEOMET® 321 + PLUS® VLh topcoat to offer high corrosion protection and stable controlled friction coefficient.

Autor:

Michel Almosnino
Key Account Manager

NOF Metal Coatings Europe

Mail: michel.almosnino@nofmetalcoatings.eu
www.nofmetalcoatings.com