

D•F® Dyna-Coat® & ENGINEERING DATA

D•F® Dyna-Coat® 1,000 Hour Long Life Premium Coating

What is the definition of long life? The answer would vary greatly depending upon your subject. For instance, the life expectancy of an African elephant on the Serengeti would be substantially different than that of a mosquito on your forearm.

Unfortunately for the contractor, the same nebulous and misleading signals are sent when some of our competitors claim that their fasteners have a long life coating. Once again, "long life" is just a relative phrase.

To eliminate unnecessary concerns on behalf of our valued customers, we quantify the meaning of long life. Since Dyna-Coat passes the 1,000 hour salt spray test, we proudly proclaim "1,000 Hour" right next to the word Dyna-Coat. Rarely if ever do we see our competitors touting the tests that their screws pass. That is a suspicious omission.

To paraphrase the famous commercial: "What's on your fastener?" Removing the uncertainty on this very important topic is easy. Specify Dyna-Coat 1,000 hour salt spray premium coating on all of your screw requirements.

Dyna-Coat is a premium organic polymer coating. It is designed to provide optimum corrosion resistance for metal fasteners. Fasteners that are coated with Dyna-Coat exhibit excellent resistance to marring, chipping and abrasion. The color of the coated fastener is metallic silver.

Dyna-Coat employs several forms of corrosion resistance, such as: replacement, inhibition, envelopment and electrochemistry. These coated fasteners also have strong resistance against acid and alkaline chemicals.

Test Parameters

ASTM B117
Salt-sodium chloride 5%
Water-Distilled water
Temperature-95 degree F±2 degree
PH of collected salt
Water 6.50-7.20

Chamber Type/Model

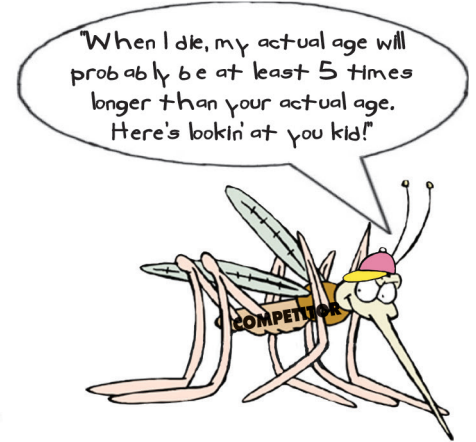
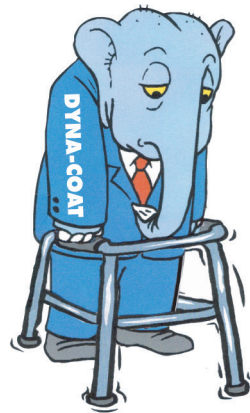
Chip/Mar resistance

Dyna-Coat

Passed for 1,000+ hours

Salt spray
Test cabinet
YS-ST-60

Excellent



Just because they SAY it doesn't make it true. Make our competitors quantify their coating's life expectancy in WRITING - as we do without even being asked.

GALVANIC ACTION CHART

Fastener Metal \ Base Metal	ZINC & GALVANIZED STEEL	ALUMINUM & ALUMINUM ALLOYS	BRASS, COPPER, BRONZE, MONEL	MARTENSITIC STAINLESS 410	AUSTENITIC STAINLESS 302/304, 303, 305
ZINC & GALVANIZED STEEL	A	B	C	C	C
ALUMINUM & ALUMINUM ALLOYS	A	A	C	NR	B
STEEL & CAST IRON	AD	A	C	C	B
BRASS, COPPER, BRONZE, MONEL	ADE	AE	A	A	B
AUSTENITIC STAINLESS STEEL (302/304)	ADE	AE	AE	A	A

- A. The corrosion of the base metal is not increased by the fastener
- B. The corrosion of the base metal is somewhat increased by the fastener
- C. The corrosion of the base metal may be distinctly increased by the fastener
- D. The plating on the fastener is rapidly consumed, leaving the bare fastener metal
- E. The corrosion of the fastener is increased by the base metal
- NR. Not recommended, see below.

Note: Surface treatment and environment can change activity

There are only two types of selfdrilling screws that Dynamic Fastener recommends for drilling through or into aluminum. Both screw types are on page 87: 1) the all-300 stainless selfdrillers, which are designed to be used when fastening alum to alum - they cannot drill through steel & cost 30% less than bi-metal screws & 2) bi-metal selfdrillers, which are designed to be used when fastening aluminum to steel.

Ultimately, it is the responsibility of the panel manufacturer or engineer to determine the proper screw to use, especially when fastening through or into aluminum.

Aluminum has very unique properties that result in a highly critical fastener selection process. Two of the more apparent properties of aluminum are: it gets very hot when drilling into it and the fact that it can expand & contract a significant distance. When coupling the many unique properties of aluminum with the high core hardness of a carbon steel screw or a 410 stainless steel screw, a potential for screw failure due to stress corrosion cracking or hydrogen embrittlement can too easily be created due to the lack of ductility/high core hardness on the Rockwell scale.

When mechanically fastening dissimilar metals, such as steel & aluminum, once water is added, either directly or through the atmosphere, then a galvanic reaction will occur. That reaction causes the formation of hydrogen. This hydrogen is a necessary element for the creation of hydrogen assisted stress cracking or hydrogen embrittlement. This condition which results in screw failure, can occur in 410 S/S & carbon steel screws due to their high core hardness. But the 300 S/S screws on page 87 have a low core hardness which prevents hydrogen assisted cracking. These screws are your lowest cost, highest value fastener when attaching aluminum to aluminum. Due to this screw's low core hardness (typically 29-31 HRC - Hardness Rockwell C) using these screws will prevent Hydrogen Assisted Cracking.

Impacting drivers and impact wrenches produce too much torque to be used to install selfdrilling screws. A D•F #12 dia T-3 selfdriller requires a minimum 92 in-lbs. of torque to install. Yet, an impacting driver produces about 1,825 in-lbs. of torque. Do not use either of those tools to install painted screws &/or selfdrilling screws. Using a screwgun with a clutch is recommended in lieu of a screwgun that is depth sensitive. We recommend the Dewalt DCF622, DW267, DW268 or DW269 for screw installation.