CORROSION PROTECTION INFORMATION

The following information was compiled from known data that compares various finishes in a controlled environment. The material set forth herein is for general information only and cannot be construed as a substitute for competent professional advice or service. Any part considering application use of this information does so at their own risk and assumes any and all liability from application or use. Consult a corrosion specialist to determine the best fastener for your condition.

SALT SPRAY RESULTS

The chart to the right provides general information with regard to corrosion resistance of various plating and coatings in a controlled test. Generally, thicker plating produces more corrosion resistance.

SALT SPRAY Per ASTM F1941 & B117 (0% red rust) Rev. 042111
Carbon steel and 410 stainless steel materials.

Coating	Salt Spray
.00015" min. (3 um) zinc plating with clear chromate	15hrs
.0002" min. (6um) zinc plating with clear chromate	24hrs
Passivated 410 Stainless Steel	48hrs
.0003" min. (8 um) zinc plating with clear chromate	48hrs
.0003" min. (8 um) zinc plating with yellow di-chromate	120hrs
.0005" min. (12 um) zinc plating with clear chromate	72hrs
.0007" min. (14 um) mechanical zinc with clear chromate	96hrs
Epoxy (E-Coat) (ACQ Compatible)	100hrs
TRI-SEAL™ Long-life coating	1,000hrs

NOTE: Per ASTM B965. Salt spray results should not be regarded as a direct guide to corrosion resistance in all environments where the material is used. Performance of the different platings/ coating cannot always be taken as a direct guide to the relative corrosion resistance in service.

FASTENER MATERIAL SELECTION BASED ON THE GALVANIC SERIES OF METALS

Revised by TFC: 0315JS

Table developed using information supplied by AISI Committee of Stainless Steel Producers.

		FASTENER MATERIAL			
		STEEL Zinc Plated	STAINLESS STEEL Type 410	STAINLESS STEEL Type 302, 304, 316	ALUMINUM
BASE METAL	Zinc | Galvanized | ZN/Al Coated Steel	A	C	C	B
	Aluminum	A	[1]Not Recommended	B	A
	Steel / Cast Iron	A,D	C	B	A
	Brass, Copper, Bronze	A,D,E	A	B	A,E
	Stainless Steel 300 Series	A,D,E	A	A	A,E

Key

A. The corrosion of the base metal is not increased by the fastener.
B. The corrosion of the base metal is slightly increased by the fastener.
C. The corrosion of the base metal may be considerably increased by the fastener material.
D. The plating on the fastener is rapidly consumed.
E. The corrosion of the fastener is increased by the base metal.

Footnotes

1. Because aluminum can expand a large distance, the high hardness of 410 SS case harden screws may lead to screw to failure due to lack of ductility or stress corrosion cracking.

NOTE: Organic coating applied to the screw will improve the corrosion resistance. Environments can affect the rate of corrosion and change the activity of the metals.

Special Note: Preservative-Treated Lumber Applications

ACQ, Penta, CA or CBA preservative-treated lumber can be incompatible with certain types of fasteners. In those cases where any type of metal roof or wall cladding materials are being attached to preservative treated lumber, the following fasteners are not compatible: zinc plated screws, zinc-alloy headed screws, stainless capped screws, aluminum, copper and copper alloy. When attaching metal panels to those types of preservative-treated lumber, a moisture barrier should be used between the lumber and the panel material. Metal panel fasteners that are compatible with preservative-treated lumber are stainless steel fasteners, or hot dip galvanized nails manufactured to ASTM A153 class D or heavier. Other types of fasteners coated with proprietary anti-corrosive technologies are also available for use with preservative-treated lumber. In addition, zinc-plated screws can be used in CCA and MCQ pressure-treated lumber.