

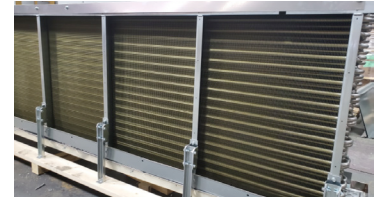
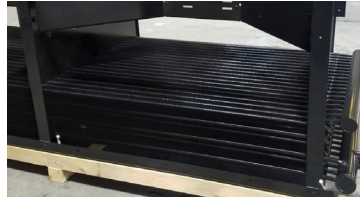
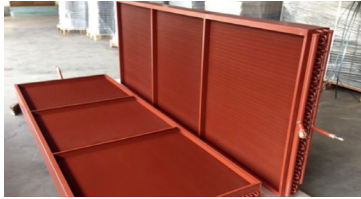
Materials

The material used on your evaporator coil can have a profound effect on how your equipment performs. When it comes to SGS Refrigeration equipment, these coils are available in four different options: copper, stainless steel, aluminum and hot-dipped galvanized steel. Advantages and disadvantages of each are detailed below.

	COPPER	STAINLESS STEEL	ALUMINUM	HOT-DIPPED (HD) GALVANIZED STEEL
REFRIGERANTS	HFCs, HCFCs, HC's, Blends, Process Fluids Not compatible with CO2 or R717	R717 & CO2 (low to zero GWP natural refrigerants)	HFCs, HCFCs, HC's, Blends, Process Fluids Not compatible with CO2	HFCs, HCFCs, Process Fluids
HEAT TRANSFER	Most efficient option at 401 watts per meter-kelvin (W/(m·K))	Lower compared to Cu & Al at 10 to 30 watts per meter-kelvin W/(m·K)	High thermal conductivity at 205 to 250 watts per meter-kelvin W/(m·K)	Lower compared to Cu & Al - 46 to 60 watts per meter-kelvin W/(m·K)
CORROSION RESISTANCE	Good to Excellent - ability to form a protective oxide layer on its surface when exposed to oxygen or moisture (Copper Oxide)	Good to Excellent - chromium content in stainless steel forms a thin, passive oxide layer on the surface when exposed to oxygen, providing protection	Moderate to Good - The oxide layer that forms on aluminum's surface can act as a protective barrier, but is sensitive to certain environments and chloride based cleaners	Excellent - The hot-dip galvanization process involves coating the steel with a layer of zinc, which provides a protective barrier against corrosion
REPAIRABILITY	Highly repairable - Copper can be effectively repaired using various joining methods, such as soldering, brazing, or welding	Good to Excellent - Chromium content in stainless steel forms a thin, passive oxide layer on the surface when exposed to oxygen, providing protection	Moderately repairable – Skilled welders are required to make repairs, aluminum is heat sensitive, need to make sure to match the alloy of the original metal	Low repairability – Difficult to repair the Zinc coating, small areas may be repaired through cold-galvanizing, but larger areas may require a complete replacement of the damaged area
ADVANTAGES	<ul style="list-style-type: none"> • Excellent thermal conductivity • Corrosion resistant • Refrigerant compatibility • Material longevity 	<ul style="list-style-type: none"> • Corrosion resistance • Hygienic & sanitary properties • Strength & durability • Aesthetic appeal 	<ul style="list-style-type: none"> • High thermal conductivity • Light weight • Cost-effective 	<ul style="list-style-type: none"> • Excellent corrosion resistance • High durability • Cost-effective
CONSIDERATIONS	<ul style="list-style-type: none"> • Great for process fluid or other refrigerant applications 	<ul style="list-style-type: none"> • Industry Standard for industrial refrigeration • Good for a majority of applications in industry refrigeration 	<ul style="list-style-type: none"> • Can be an alternate solution for stainless steel • Not a good fit for corrosive environments 	<ul style="list-style-type: none"> • Hygienic environments are not a good fit • Good solution for highly potent brines or industrious non-hygienic applications

Coatings

A wide range of coating options for coils



	HERESITE Full (dipped) Coil Coating	ELECTRO-FIN Full (dipped) Coil Coating	GOLD EPOXY Pre-Coated Fins – Fins Only
PRICE	\$\$\$	\$\$	\$
COLOR	Brown (New P-413 Formula)	Black	Gold
PENCIL HARDNESS	5-6H	2H+	N/A
B117 SALT SPRAY	6000+ hrs	5000 hrs	N/A
G85 SALT SPRAY	1000+ hrs	N/A	500 hrs
MEK SOLVENT	100+ rubs double pass	N/A	50 rubs double pass
PH RANGE	2.6 to 12.6	3 to 12	N/A
ASTM D522 FLEXIBILITY	1/4"	N/A	N/A
LEAD TIME	Add 2-3 weeks	Add 1-2 weeks	No change

APPLICATIONS

	HERESITE	ELECTRO-FIN	GOLD EPOXY
YES	<ul style="list-style-type: none"> High salt air environments Meat curing Pickled products Citrus Produce/washrooms Seafood Wineries 	<ul style="list-style-type: none"> Moderate salt atmospheres Meat curing Pickled products Fruit & citrus Storage Produce/washrooms Seafood 	<ul style="list-style-type: none"> Moderate Salt atmospheres Meat curing Pickled products Fruit & Citrus Storage Produce/washrooms Seafood
NO	<ul style="list-style-type: none"> Liquid smoke rooms Highly caustic cleaning agents 	<ul style="list-style-type: none"> Onion storage and processing Wineries Liquid smoke rooms Cheese ripening Caustic cleaning agents 	<ul style="list-style-type: none"> Onion Storage and processing Wineries Liquid smoke rooms Cheese ripening Caustic cleaning agents

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