

METAL FINISHING INFORMATION

BPPCG – BLACK POLYESTER POWDER COATED OVER HOT DIPPED GALVANIZED PRODUCTS

Our BPPCG products start out as formed Carbon Steel parts. They are then Hot Dipped Galvanized to prevent rusting, extensively washed, treated with Zinc Phosphate, E-Coated and last our high quality Polyester Powder Coat is applied as the final finish layer. This process is extensive but it yields a final product that is both beautiful and extremely rust resistant. Please read the details below for more information about this process.

CARBON STEEL

Snug Cottage specifies a high quality carbon steel for all our steel based products. The advantages to using Carbon Steel are that it is very strong and reasonably priced. Its chief disadvantage is that, in its untreated state, carbon steel rusts very quickly when exposed to water and/or salt.

HOT DIPPED GALVANIZING

The term “galvanizing” is used today to describe two completely different processes. Originally, “galvanizing” referred to the process which is better described as Hot Dipped Galvanizing. During the process of hot dipped galvanizing the product is acid washed and then dipped into a vat of molten zinc which results in the product being fully coated in a layer of corrosion resistant zinc. This process is not exact in that while all parts of the product are coated, the coating varies in thickness and may have uneven areas as the excess zinc runs off the surface when it is removed from the vat. Hot Dipped Galvanizing creates a metallurgical bond between the steel and zinc, in the event of damage to the zinc coating rust does not migrate under the zinc. In later years the term “galvanized” was also applied to products that are coated with a very thin layer of zinc that is applied electrostatically. This “galvanize” coating sits on top of the steel and while this produces an even smooth coat it offers very poor protection against rusting. In the event of damage to the electroplate rust migrates readily under the coating.

Snug Cottage Hardware only sells product that is galvanized using the hot dipped process.

ZINC PHOSPHATE

Zinc phosphate is an inorganic chemical compound used as a corrosion resistant coating on metal surfaces either as part of an electroplating process or applied as a primer pigment.

E-COATING

E-coating has been used as one of the main anti-corrosive processes in the automotive industry since the 1950's. An unfinished product is immersed in a bath containing an electrophoretic paint emulsion, and then an electric current is passed through both the product and the emulsion. The paint particles that are in contact with the product adhere to the surface and build up an electrically insulating layer. This layer prevents any further electrical current passing through, resulting in a perfectly level coating even in the recessed parts of complex-shaped goods. The product is then removed from the paint bath and baked in an oven. E-coating is not UV Stable and therefore requires a polyester powder coat over it when product is intended for exterior use.

POWDER COATING

During the Powder Coating process products are hung on a rack or moving line while an electrical charge is applied to the rack or line. The parts are then moved through a sprayed mist of fine powder that has the opposite charge resulting in powder clinging to the parts. The thickness of the powdered paint can be controlled and is applied evenly with no runs or sags. After the powder is applied the product continues through an oven that bakes on the finish. Snug Cottage uses only high quality Polyester Powder Coating. Unlike the cheaper epoxy powder coats, polyester coatings are much more UV resistant and durable.



METAL TYPE INFORMATION

BLACK OVER 304 STAINLESS AND SATIN 316 MARINE GRADE STAINLESS PRODUCTS

Snug Cottage Hardware also offer a wide range of products produced using Stainless Steel. Stainless steel is initially more expensive to work with than regular carbon steel but it offers superior rust resistance and it produces a beautiful smooth finished product. Snug Cottage Hardware uses two grades of stainless steel for our products depending on their intended use. For our **Black Polyester Powder Coat** over stainless products we use Grade 304 stainless while for our Satin Stainless (bare) products we use Grade 316 stainless. Please read the details below to better understand the differences in our stainless steel product processing.

GRADE 304 STAINLESS

Also known as “18/8” stainless (containing approximately 18% chromium and 8% nickel) this is the most versatile and widely used stainless steel, available in a wider range of products, forms and finishes than any other. It has excellent forming and welding characteristics. Its chief advantage over carbon steel is that it is very rust resistant and ideally suited for most interior and exterior environments. However, it is not quite as strong as an equivalent piece of carbon steel and more expensive.

GRADE 316 STAINLESS

316 stainless steel is commonly referred to as “Marine Grade” stainless steel. It has a higher nickel content than 304 stainless steel but what distinguishes type 316 from type 304 is the addition of molybdenum, up to a maximum of 3%. Molybdenum increases the corrosion resistance of this chromium-nickel alloy to withstand attack by many industrial chemicals and solvents and, in particular inhibits pitting caused by chlorides. As such, molybdenum is one of the single most useful alloying additives in the fight against corrosion.

Note: Type 316 is the main stainless steel used in the marine environment, with the exception of fasteners and other items where strength and wear resistance are needed, then Type 304 (18-8) is typically used. Basically, while 316 stainless is much more resistant to salt and water corrosion it is not as strong and is more brittle than 304 stainless.

SNUG COTTAGE STAINLESS HARDWARE

BLACK OVER 304 STAINLESS STEEL

When we intend to powder coat over the stainless steel we use Grade 304 stainless steel for its extra durability and cost effectiveness. The parts are extensively washed, treated with a phosphate layer and then our Polyester Powder Coat is applied as the final finish.

SATIN 316 STAINLESS STEEL

We use Grade 316 Stainless for all of our stainless products that are Satin in finish for its extra corrosion resistance. Since there are no extra coatings on these products to help defend against corrosion, choosing the highest corrosion resistant base material is important. We use an abrasion process on these formed parts to produce a uniform finish and then they are washed and passivated to deter rusting.

WHY SNUG COTTAGE HARDWARE PASSIVATES STAINLESS STEEL PARTS

Stainless steel is stainless because of the protective chromium oxides on the surface. Those oxides can be removed in the manufacturing process uncovering the iron within the stainless and that iron can rust. Stainless steel is also vulnerable to contamination by plain carbon steel while it is being worked by various tools in the manufacturing process. Stainless steel is passivated by dipping the parts into a bath of acid. The acid bath dissolves any free iron or other contaminants from the surface cleaning the metal. Once it is removed from the acid the chromium re-oxidizes on the surface forming a protective stainless barrier.