

Today, our customers demand higher quality and durability from the products they buy. Not only do they expect these products to perform well, but they want the finish to look good and resist corrosion for a much longer period of time. To satisfy those demands, the finishing process offered on our Visi-Flo® Sight Flow Indicators are designed to do just that.

In April 2017, OPW implemented a new process to help ensure that the carbon-steel and ductile-iron versions of its Visi-Flo sight flow indicators are better protected against corrosion. This new process is called electrocoating, or e-coating, and it has been proven to provide dramatically better appearance and durability.

E-coating is a method of painting that uses electrical current to deposit the paint. The process works on the principle of “opposites attract,” with the coating’s opposite charges attracting each other, while the like charges repel each other.

The e-coat process can be divided into four distinct zones:

- [Pretreatment](#)
- [Electrocoat Bath and Ancillary Equipment](#)
- [Post Rinses](#)
- [Bake Oven](#)

The pretreatment zone cleans and phosphates the metal to prepare the surface for e-coating. Cleaning and phosphating are essential to achieving the performance requirements desired by today's end user of the product. During pretreatment, the metals that are to be processed are analyzed and the most appropriate chemicals are chosen. A high-quality zinc phosphate system using the immersion method is primarily used when steel and ductile-iron parts are to be coated.

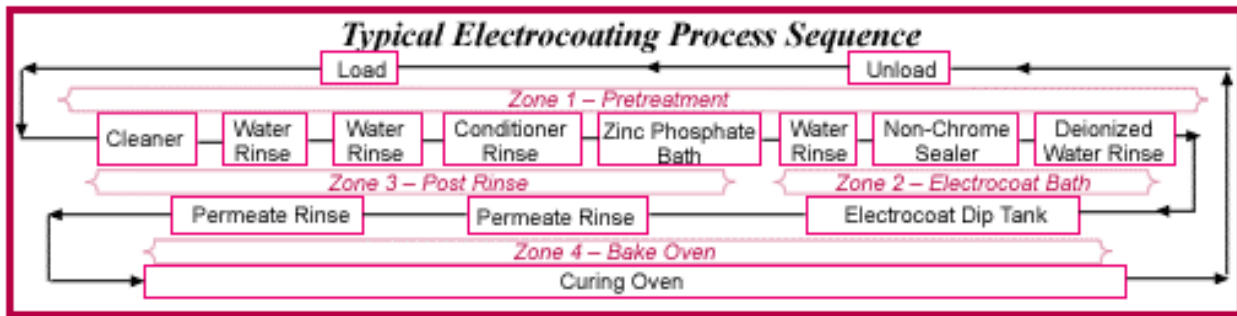
The electrocoat bath and ancillary equipment zone is where the coating is applied. The e-coat bath consists of 80% to 90% deionized water and 10% to 20% paint solids. The deionized water acts as the carrier for the paint solids, which are under constant agitation. The solids consist of resin and pigment. Resin is the backbone of the final paint film and provides corrosion protection, durability and toughness. Pigments are used to provide color and gloss.

The post rinses provide both quality and conservation. During the e-coating process, paint is applied to a part at a certain film thickness, which is regulated by the amount of voltage applied. Once the coating reaches the desired film thickness, the part insulates and the coating process slows down. As the part exits the bath, paint solids cling to the surface and have to be rinsed off to maintain efficiency and



aesthetics. The excess paint solids are called "drag out" or "cream coat." These excess paint solids are returned to the tank so that a coating-application efficiency greater than 95% can be achieved.

The bake oven receives the parts after they exit the post rinses. The bake oven cross links and cures the paint film to ensure maximum performance properties. The minimum bake schedule is 20 minutes when the part temperature is at 375°F.



E-coating will be provided on all 1/4"-4" carbon-steel and ductile-iron Visi-Flo sight flow indicators. The coating provides 100% coverage to all surfaces of the unit, with the exception of the sealing areas.

