Cablofil® Wire Mesh Cable Tray

WHY ZINC PLATING IS BETTER THAN MILL GALVANIZING

When it comes to wire mesh cable tray, there can be some legitimate confusion surrounding the finishes that are available. Most wire mesh cable tray is coated with zinc for corrosion protection, but the difference between finishes lies in the application process. While there are a range of galvanized finishes available in the industry, zinc plating is the optimal choice for a variety of reasons.

Both zinc plating and mill galvanizing are common types of zinc coating or finish on cable tray for indoor applications. Although both processes are used to attach sacrificial zinc to the steel surface to control red rust formation, they have some significant differences.

ZINC PLATING VS. MILL GALVANIZING

ZINC PLATING (ELECTRO ZINC)

- Occurs after the fabrication process
- Smooth, shiny & aesthetically-pleasing finish
- Eliminates the effect of welding on the zinc coating
- Designed for use in dry, normal or controlled atmospheres
- Ideal for interior installations

MILL GALVANIZING

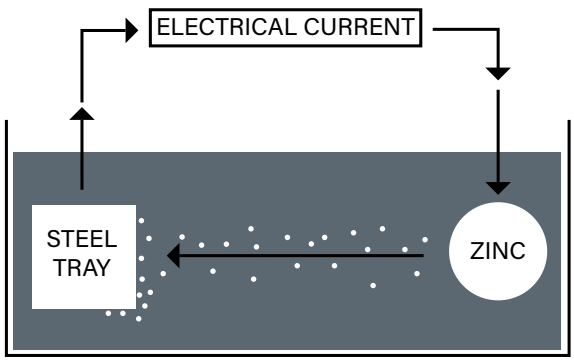
- Occurs when steel wire or sheet is formed at the mill
- Oily film is hard to handle and collects dust
- Allows premature rusting
- Dull, matte finish with oxidation

First, the finishes are applied at different times during the process. Mill galvanizing, sometimes referred to as "pregalvanizing," takes place at the mill when the steel wire or sheet is formed. This is before any fabrication has taken place. On the other hand, zinc plating occurs after all the fabrication processes are complete.

Mill galvanizing can cause several problems. First, each tray contains over 100 welds. The welding process modifies the steel itself and adds impurities that cause the weld area to start to oxidize (rust) almost immediately. Each weld point provides a location where rust can start forming right after the welding process. If the zinc coating is applied before the welding, as it is with mill galvanizing, these weld points can start to rust quickly. If the zinc coating is applied after welding, such as with zinc plating, these weld points can be deterred from forming rust.

When cable tray is mill galvanized, the raw material is covered with oil at the steel processor. This is done to help with processing and to minimize rust stains during transportation. However, the oily film can be transferred easily during or after installation, covering hands and gloves. Additionally, overhead installations can collect dust and transfer the dust to ceiling tiles. Painting is also much more difficult with this oily residue. The oily film is very difficult to remove once the tray is installed and can greatly hinder the ceiling painting process common in commercial buildings. Zinc plating is an excellent "primer" for painting based on its cleanliness and adhesion-ready surface finish.

Once installed, the mill galvanized cable tray can have a dull, matte finish with oxidation and burn marks at every single weld location. This makes for an unattractive look. In addition to aesthetics, cleanliness is vital to data centers, even during construction. Again, mill galvanized cable tray is a poor choice. Zinc plating, however, is smoother, cleaner and more long lasting. It also has a more consistent color, while mill galvanized products can vary.



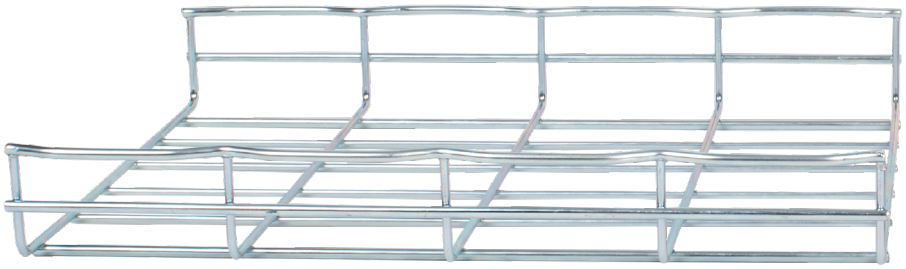
HOW DOES ZINC PLATING WORK?

1. Cable trays or accessories are made from raw steel
2. Cable trays or accessories are pickled and plunged into an electrolyte containing zinc
3. The passage of an electric current creates the zinc deposit
4. A top coat is usually added in a separate aqueous process that converts the top layer of zinc to make the zinc less reactive and to increase corrosion resistance
5. The zinc plating is ready to react with the environment and sacrifice itself via oxidation before allowing the steel to oxidize

There are some concerns that zinc plating may change over time, where tiny whiskers form microscopically, detaching when touched and becoming airborne. Once airborne, some worry these whiskers could land on a circuit board and short a component.

However, there is very little research or testing to confirm these concerns. The little research some end users have cited is typically flawed as it names zinc-plated products as the primary concern when, in fact, the product exhibiting whiskers was a pregalvanized panel. For more information, refer to these resources.

In addition to zinc whisker concerns not being proven, most server and router manufacturers consider the risk to be small since the current zinc plating process includes a passivation step that mitigates the risk. The majority of server and router equipment manufacturers continue to use zinc plating in their processes and provide a full warranty on the equipment with zinc-plated chassis. In addition, Cablofil® Wire Mesh Cable Tray has been zinc-plated since the 1970s with miles of tray installed without any recorded incidents of zinc whiskers.



Cablofil Wire Mesh Cable Tray is offered in a variety of finishes with zinc plating being the most common. Painted tray is also a common finish and is offered in both black and white powder coat with additional custom colors available. As applications become more heavy-duty with exposure to salts, acids and sulphurous environments, there are even more options, such as geomet and stainless steel. No matter what finish you choose, Cablofil options are all UL classified.

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