

Stainless Steel in a Can: Good as Gold?

Stainless steel has long been thought of as the ideal material for the construction of food processing equipment. But stainless steel coatings may give other materials a chance.

• Karen Langhauser, Editor

To most manufacturers, 316L stainless steel is the solid gold of the food processing equipment industry. It is ideal for applications requiring high corrosion and heat resistance, frequent washdown and long life. It gives equipment both a professional and attractive look.

However, like gold, stainless steel can also be expensive. For some companies, building an entire machine out of stainless steel is considered both unnecessary and impractical. Manufacturers often opt to make parts that do not come in contact with food (such as support frames, motor mounts, electrical enclosures, etc.) out of alternate materials, such as aluminum or carbon steel.

These alternate materials still need to be treated with some sort of protective coating, which often comes in the form of a conventional paint. Conventional paints, however, have their limitations. When subjected to the rigors of the food plant, conventional

paints often don't hold up. Conventional paints can chip and deteriorate, compromising the integrity of the coating, which allows the metal underneath to oxidize.

The answer may be found in a 30-year old coating product that is, essentially, stainless steel in a can. This product, called STEEL IT, made by Stainless Steel Coatings Inc., is a family of spray-on formulations that incorporate a proprietary 316L stainless steel leafing pigment blended with fast-curing polyurethane and epoxy resins.

STEEL IT coatings are USDA approved for incidental contact, non-toxic and chip-resistant. They can effectively coat a product for anywhere from months to several years, depending on the environment.

Stainless Steel Parts vs. Stainless Steel Coatings?

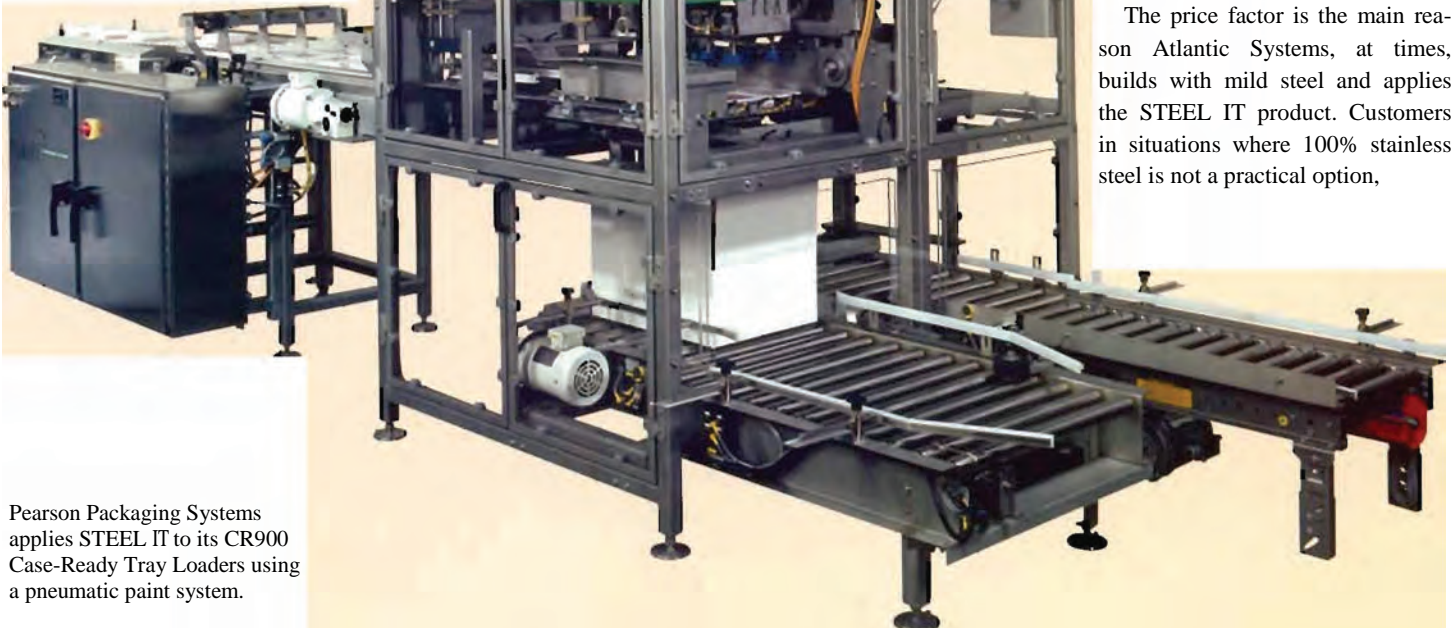
It's not always a simple case of choosing between stainless steel coatings or stainless steel parts. The two options don't necessarily have to be in competition. Jim Coady, P. Engineer and President of Atlantic Systems Manufacturing Ltd., is a big proponent of making equipment entirely out of stainless steel.

"If we have the option, the refinishing maintenance of stainless steel is essentially zero," says Coady.

However, Coady's plant is also familiar with STEEL IT, and uses it on food processing equipment it manufactures.

"Stainless Steel is not always a practical option. We've had clients specify that we use the STEEL IT product," states Coady.

The price factor is the main reason Atlantic Systems, at times, builds with mild steel and applies the STEEL IT product. Customers in situations where 100% stainless steel is not a practical option,



Pearson Packaging Systems applies STEEL IT to its CR900 Case-Ready Tray Loaders using a pneumatic paint system.

sometimes choose to have parts of the machine - the framing, for example - made of mild steel and then coated in the factory with the STEEL IT product.

Of course, as with all products, user error can play a big factor in the results. Coady points out that the application of STEEL IT is where many plants fall short, lessening the effectiveness of the product. Applying STEEL IT over contaminants-such as oil, moisture, or dirt-can hinder the effectiveness and durability of the product.

But when applied to a properly cleaned and prepared machine, STEEL IT holds its own.

Greg Flemming, inventory control supervisor at Pearson Packaging Systems (Spokane, WA) uses the STEEL IT product on 95% of the machines his company manufactures. When machines return to the factory years later for refurbishments, the STEEL IT product is still there.

"We've had machines return to be refurbished after 12 years of factory use, and the STEEL IT is still on them. It's chipped, scratched, and worn, but it's still coating the machines," says Flemming.

Stainless Steel Coatings vs. Conventional Paints?

You have to wonder what the success of STEEL IT means for conventional paints, which would most likely not survive 12 years in a rigorous factory environment. Truth is, STEEL IT and conventional paints have been co-existing for years, because each has its place. Pearson Packaging Systems has customers that will specifically request the use of conventional paints. These requests, as Flemming points out, are mainly made for aesthetic purposes.

"We work with companies that require



STEEL IT coatings have achieved market success in the Processing and Packaging industries, especially Food and Pharmaceutical, and other industries where strong requirements exist for preventing premature destruction of surfaces caused by exposure to corrosive elements.

that all equipment is made a certain color, which necessitates the use of specific conventional paints."

Aesthetic appeal is not lost, however, with the use of STEEL IT. On the contrary, many customers and manufacturers use the product for its appearance. STEEL IT creates, as Flemming describes it, "an appealing manufacturing look". After curing, STEEL IT coatings take on a satin metallic finish, which isn't dull or excessively shiny.

Pearson Packaging Systems finds STEEL IT especially useful for touching up machin-

ery before it ships. Surfaces can easily get scuffed during the manufacturing process, and STEEL IT is a quick way to repair blemishes and enable finished products to be shipped in perfect condition.

So while stainless steel construction still reigns supreme, options exist for plants that can't afford, don't need or simply don't want an entire machine built from stainless steel. While it definitely won't replace stainless steel construction, or eliminate the use of conventional paints, STEEL IT has proved it has an important place in the industry.