



Processed coils come in one side of the Tulsa assembly plant and exit the other end as a finished school bus. “We roll form, weld—everything,” according to Bus Platform Director Scott Smay.

# Straight A's

After a battery of tests, school bus manufacturer adopts custom chemical formulation that dramatically inhibits corrosion

BY CORINNA PETRY

**B**ecause school districts' ability to collect sufficient tax revenues has been compromised since the dawn of the Great Recession, annual budget shortfalls means that student transportation has aged.

“That has been a challenge in terms of financing vehicle purchases. Many of our customers are forced to keep their buses longer. Now, some states, like Tennessee, extended the life cycle of their buses to 18 years,” says Trish Reed, vice president and

general manager for IC Bus LLC, a division of Navistar Inc., Lisle, Illinois.

Peter Wong, engineering manager-Global Body Engineering for Navistar, concurs.

“There is a lot of salt on the road in northern states, and other chemicals that are even more corrosive. The combination of that and customers trying to keep buses longer prompted IC Bus to explore corrosion resistant materials and coatings.”

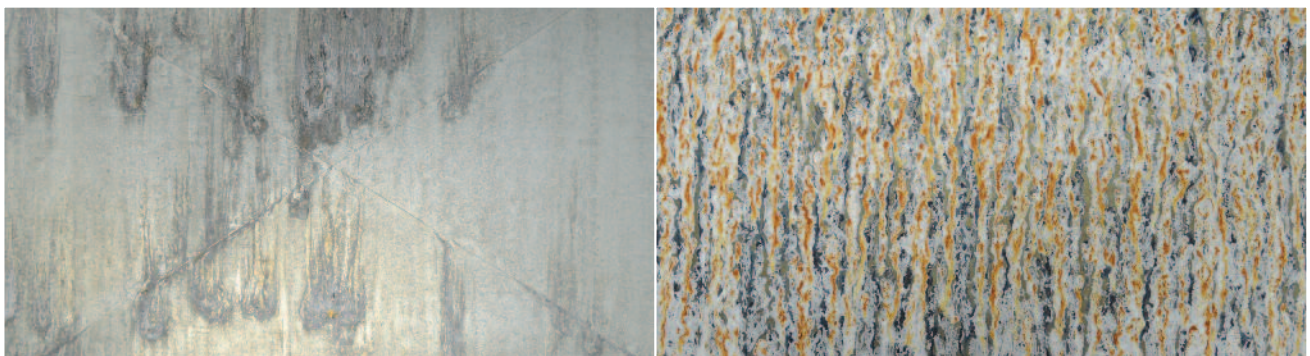
For its Class 5-8 trucks, Navistar dips all parts in e-coat, says Scott Smay, bus platform director for IC Bus, “but the bus

bodies are so big that you can't e-coat them. We use double galvanized sheets [total coating is rated G60] that we weld together. The propensity of getting corrosion on a bus is higher than on a truck,” he adds.

“Navistar routinely looks for ways to help customers and that involves looking at new technologies, anything that is commercially available or near commercially available,” Wong says. “We had a customer that wanted a longer warranty for our body corrosion. We researched what was available to meet their needs, and that's how we found Chemcoaters.”

Mike Tieri, director of sales and marketing for the Gary, Indiana-based coil coating company started in 2001, says the relationship with Navistar and IC Bus goes back “probably five years. There was tremendous testing done, manipulations

**Salt spray tests on both Intercoat ChemGuard (left) and G60 galvanized sheet (right) show a marked improvement in corrosion resistance with the former.**



of the recipe itself to get it to be exactly what Navistar was looking for.”

## What is ChemGuard?

Intercoat ChemGuard, developed by Chemcoaters offshoot Eco-Green Coatings, is “an engineered product and we can manipulate it to do whatever an individual customer may need,” Tieri explains. “Some customers need formability. Others need great adhesion. Someone else does a large amount of welding. We adjust the formula accordingly. You may hear one name—Intercoat ChemGuard—but there may be eight or 10 different recipes, depending on what customer does with it.”

At its most basic, Intercoat ChemGuard is an interactive product. When applied to a galvanized substrate, the coating bonds to the zinc on the surface. When scratched, the coating self-heals and re-bonds, preventing rust.

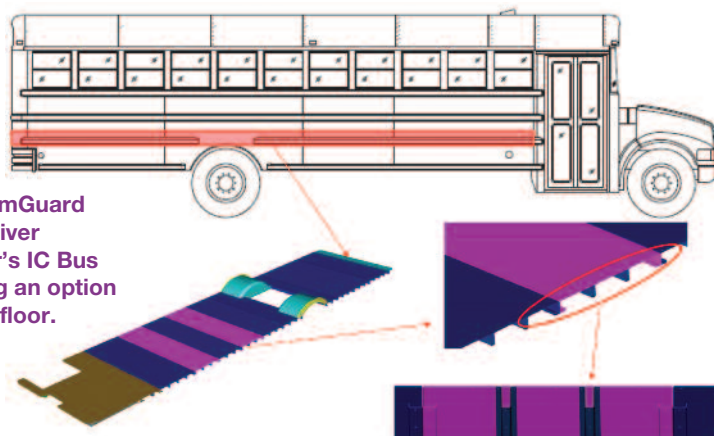
Navistar’s Wong acknowledges that it took the company “a long time to validate the claims, run trials, before approving the coating for production.”

Initially, the product was approved for the driver platform, which includes flooring and the stairwell at the front of the school bus. “This floor previously had an incredibly high number of warranty claims when it came to corrosion. So 100 percent of our new buses feature ChemGuard on this floor area, and we have seen a dramatic decrease in claims,” says Wong.

## Qualification process

“We relied on salt spray tests as a comparison” between traditional coating and ChemGuard, says Smay. “You can tell the difference. We look at photos and study the bus history and get a rough number of years in which salt spray will equate with service in, say, Minnesota. Bus operators care what their buses look like,” he adds. “They are almost as picky as truck owners.”

According to Wong, IC Bus conducted additional testing on the entire substrate on the floor. “On the underside of our bus floors is a black undercoat. We knew that would provide a certain level of protection before [corrosive elements] even got to the substrate. When we originally tested, we included a gravelometer [which blasts fine debris matter at surfaces] to strip away the



After making ChemGuard standard in the driver platform, Navistar’s IC Bus makes the coating an option for the entire bus floor.

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**PETER WONG, NAVISTAR INC.**

black coating even before we started doing the salt spray tests.”

A school bus operator in Kentucky “heard about our claims and the results, and they wanted to construct the entire bus floor with the ChemGuard,” says Wong.

“That required a good investigation on our part,” Smay notes. “We had to figure out a way to process the material without it affecting our regular operations in Oklahoma where we do final assembly.”

Fabrication occurs at an assembly plant in Tulsa. “We roll form, weld—everything. We create the flooring, and the driver platform comes from an outside supplier, Magna Cosma in Montezuma, Iowa. That’s standard on all our buses,” Smay says.

IC Bus produces 11,000 to 12,000 buses per year, primarily for customers in North America, says Reed. She notes that IC Bus has promoted ChemGuard at the past two National Association of Pupil Transportation exhibitions, and the most interest comes from school transportation officials in the northern half of the United States and Canada. The ChemGuard coated floor is an optional package.

## Showing promise

Tieri at Chemcoaters says master mill coils of galvanized sheet arrive at the Gary plant directly from the producer. “We coat it and then it goes to a processor to be cut up. Depending on what the part is, and any ad-

ditional work that has to be done, then gets shipped to Navistar.”

Arrowhead Steel Co., a Burr Ridge, Illinois-based distributor, has the coated coil transported next door to toll processor Chicago Steel, which splits the coil and “further processes it to size,” before heading for Tulsa for just in time deliveries, says Arrowhead President Arnold Koldenhoven.

Chemcoaters granted Arrowhead the exclusive right to market Intercoat ChemGuard to the bus market, says Tieri. As a result, the distributor has ongoing conversations with Blue Bird Corp. and Thomas Built Buses.

Koldenhoven says he promotes ChemGuard to other OEM customers—“wherever we feel there is an application. Corrosion resistance is something people look at, because product has to last longer and perform better. We are proud of our role and we’re eager to see the product grow.”

Tieri is likewise optimistic about the rate of adoption. “We hope [truck builders] Peterbilt or Kenworth will want to try it.”

At Navistar and IC Bus, “We are relying on customer pull-through to boost demand for the ChemGuard-protected steel,” Smay says. ■

**Arrowhead Steel Co.**, Burr Ridge, Illinois, 630/323-7400, [www.arrowheadsteel.com](http://www.arrowheadsteel.com).

**Chemcoaters**, Gary, Indiana, 877/411-2905, [www.chemcoaters.com](http://www.chemcoaters.com).