

Not in a Pickle: Steel Producer Secures Reliable Corrosion Protection Amidst Global Supply Crisis

**LOCATION**

Centro Orizaba,
Veracruz, Mexico

**COMPLETION**

June 2022

**OPERATION**

Carbon Steel Sheet
Metal Pickling

**PRODUCTS**

THINSET™ Adhesive,
FURALAC™ Green Panel Mortar,
Novocoat SC1100 Primer/Sealer,
Novocoat SC3300 Novolac Epoxy Lining

Challenge: Protect concrete floors, walls, and columns against corrosive hydrochloric acid and other chemicals given global supply constraints

Solution:

1. Chemical Containment Pit Flooring – Acid-resistant tile bonded with THINSET™ Adhesive and grouted with FURALAC™ Green Panel Mortar

2. Chemical Containment Pit Walls, Pickling Line Platform Support Columns, Floor under Pickling Line Platform – Novocoat™ SC3300 Novolac Epoxy Lining over Novocoat™ SC1100 Primer/Sealer with fiberglass reinforcement



1. Tile Installation - ErgonArmor provided on-site technical support to the contractor during critical surface preparation, tile setting, grouting and detailing stages.

TYASA, a leading steel producer, needed corrosion protection for concrete floors, walls and columns around a new carbon steel sheet metal pickling operation at its Centro Orizaba facility in Veracruz, Mexico. This production line would expand TYASA's painted and zinc-coated sheet metal offerings within the Mexican market and beyond. But in the aftermath of the COVID-19 pandemic, material shortages and transportation delays disrupted supply lines and threatened the timely completion of TYASA's expansion. To mitigate this risk, TYASA chose suppliers that did not depend upon ocean transportation to deliver materials when possible.



TYASA's engineering, procurement, and construction (EPC) consultant requested a bid from the contractor to install corrosion protection linings around the new pickling line. The design

specifications required the linings withstand three things—weight, heat, and chemicals.

Lining Design Requirements:

1. 10 N/mm² static load
2. 105°C temperature
3. Pickling solution (18% HCl, 25% FeCl₂, 8% FeCl₃, 20% FeO)

Familiar with ErgonArmor's products and capabilities, TYASA's contractor contacted ErgonArmor to help develop a proposal. While ErgonArmor's broad product range and ability to deliver materials by truck met the EPC's qualification criteria, it was the company's extensive experience providing tailored corrosion protection solutions for similarly demanding service conditions that persuaded the EPC.

ErgonArmor's Key Capabilities as a Supplier

1. Reliable ground shipment
2. Full range of tile setting and coating products
3. Experience in pickling acid



2. Floor, Wall, and Column Coating Installation – A lighter-duty, fiberglass reinforced coating on the columns and floor underneath the elevated pickling line platform.

Initially, TYASA considered using a vinyl ester laminate lining under the chemical storage tanks but ultimately chose acid-resistant tile for two reasons: scheduling and reliability. TYASA wanted to set the tanks 18 days after placing concrete, but in humid Veracruz, the concrete would have had to cure at least 28 days for the vinyl ester laminate to adhere. In contrast, tile setting could start after 7 days' cure, saving 3 weeks or more. The thick, rugged tile bonded with THINSET™ Adhesive and grouted with FURALAC™ Green Panel Mortar also offered superior longevity, a better choice for the inaccessible floors underneath the pickling solution tanks and piping.

Because the walls of the chemical storage pit and the floor and columns under the pickling line platform would be more easily accessible, a more cost-effective novolac epoxy laminate system provided better value. To enhance the lining's resilience on expanding and contracting concrete, the primer was reinforced with chopped strand fiberglass mat that also increased durability.

On top, Novocoat™ SC3300 Novolac Epoxy Lining was applied to block the corrosive pickling solution.

To TYASA's delight, the contractor completed installation of ErgonArmor's corrosion protection linings ahead of schedule in June, 2022. ErgonArmor's tile setting and coating materials that were shipped by truck delivered on time given a tight project schedule, and proved more capable of meeting time constraints than those of foreign competitors. Additionally, the installer's prior experience using ErgonArmor's products in conjunction with ErgonArmor's on-site technical support yielded a high-quality result.

With confidence that its structures would be protected from corrosive degradation, TYASA could confidently focus on serving new customers from its new pickling line in Veracruz, Mexico for years to come.