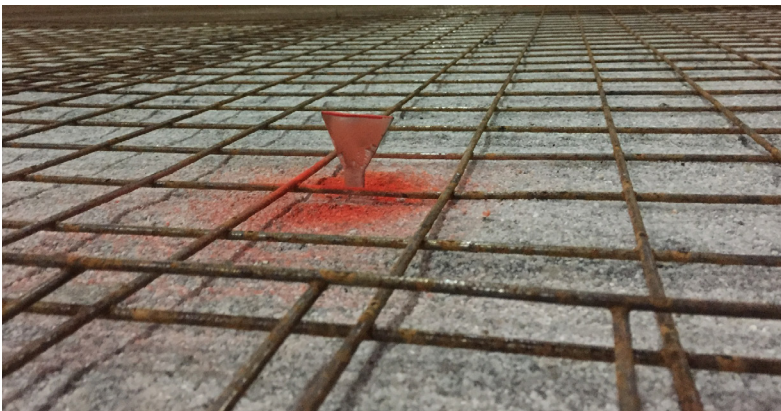




Globally Proven
Construction Solutions

HILLSBOROUGH COUNTY WASTE TRANSFER STATION

Project Snapshot - L&M™ EMERYTOP 400™



Situation

Tipping floors found in waste transfer stations and material recovery facilities (MRFs) undergo attacks that are extreme and unique to the solid waste industry. In fact, there isn't a more abused floor than one found within this space. The attacks come in three forms: abrasion, impact and chemical. The front-loaders from the tractors cause the abrasion and impact, and the waste leachate creates the chemical attack on the concrete surface.

Cornerstone Construction Services (CCS), an Orlando-based concrete contractor, had previously been working with Hillsborough County (Greater Tampa area) management and engineers to come up with a solution to their transfer station flooring problem. As is usually the case in these harsh environments, the existing concrete surface had worn down as far as the rebar in certain areas—up to 4 inches (100 mm) in elevation—and was nonexistent in some spaces. After several discussions with management and submitting a hard bid, CCS was awarded the project.

Challenge

While the facility was open during the surface preparation and topping installation, CCS had half the floor to work with at any given time. The other half remained operational. This created logistical difficulties working around heavy equipment. When the CCS crew performed the concrete surface preparation, they worked days, usually 7 AM to 3 PM.

Another challenge the CCS crew encountered was environmental. Florida temperatures in the summer are not conducive to good concrete or emery topping placement projects. Therefore, they mixed and placed the new topping at night, when temperatures were at their lowest. They worked nights, midnight to 7 AM, so as to not impact facility uptime.

Floor hardeners and toppings require thorough concrete surface preparation. This usually involves either a scarifier or shotblast machine to roughen up the existing surface in order to prepare it to accept the topping. Proper surface preparation is key to a successful topping installation.

To prepare the existing surface, the CCS crew milled and abraded the concrete down to the rebar. (Keep in mind there was exposed rebar already showing in the existing surface.) Where higher floor areas were present, the CCS crew shotblast the floor to continue the preparation.

SURFACE SIZE:
Approximately
24,000 sq ft
(2,230 m²)

**POUNDS OF EMERYTOP
400 PLACED:**
500,000 lbs. (226,796 kg)
at 2 to 4 inch (50-100 mm)
thickness

CONCRETE CONTRACTOR:
Cornerstone Construction Services -
Orlando, FL

ENGINEER:
SCS Engineers -
Tampa, FL

OWNER:
Hillsborough County
Florida



A LATICRETE Solution

On top of the prepared concrete surface, the CCS crew applied DRYTEK™ Epoxy Primer with sand broadcast to bind the soon-to-be-placed floor topping to the existing substrate.

Cured epoxy primer with sand resembles coarse sandpaper — installers want plenty of sand on the surface to ensure proper adhesion. This bonding agent with cured sand provides the proper “bite” needed for the new floor topping about to be placed.

Next, the CCS team brought concrete ready-mix trucks to the site. They began loading one mixer with a number of Supersacks [3,000 lbs (1,361 kg) of material] of L&M™ EMERYTOP 400™. As soon as the mix sequence transpired and pouring began, they started putting in water for the next load into the next truck. They then placed the topping mix and loaded up the second truck with the next batch of material. Over the course of the two installations, the CCS crew put down over 500,000 lbs. (226,796 kg) of L&M EMERYTOP 400 material.

While placing the topping, CCS sprayed L&M E-CON™, a concrete finishing aide, onto the new surface in order to prevent crusting and to help in its placement and its early hydration. Finally, the crew applied L&M DRESS & SEAL WB™, a curing and sealing compound, to the freshly placed L&M EMERYTOP 400 for it to properly hydrate and cure.

Outcome

Hillsborough County management is very pleased with their new L&M EMERYTOP 400 floor topping. CCS gave a 3 year warranty on the new flooring solution. The County's transfer station is 100% back in operation handling 400 tons of waste per day.

