STONHARD *Solutions*

Epoxy system restores deteriorated floor

PAUL FRIED
Assistant Plant Engineer,
General Dynamics, Eynon, PA
MARION SOURS
Managing Editor

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Problem

General Dynamics, operating out of Eynon, PA, produces suspension tank parts for the U.S. Army. The tank parts are manufactured in Eynon and then shipped to other General Dynamics plants for tank assembly. The punishing day-to-day traffic of forklifts and other heavy equipment was hard on the concrete floors. In an effort to protect the concrete, the plant purchased an epoxy floor system.

The system did not prove heavy-duty enough to combat the traffic and within one year the floor had deteriorated substantially. In some aisle areas, the weight of the forklifts had caused the substrate to crack and break up, leaving the floor uneven and unsafe.

Solution

General Dynamics learned of an epoxy system that appeared to have high-performance characteristics. It contracted with the manufacturer of the system to install this flooring in the plant.

First, however, sections of the damaged floor had to be repaired. Preparation began by using a jackhammer to remove some of the existing epoxy and reach the original substrate. On the large areas, a scabbler was used to mechanically hammer away the poorly bonded epoxy overlayment.

To protect the edges of the traffic aisles from deterioration, chases were made in the floor. These were created by making a saw cut into the exiting floor with a V-shaped groove so that the floor would maintain the prescribed thickness, even along the edges.

Finally, a blasting machine was used to thoroughly prepare the substrate, leaving it clean, sound and dry.

A two-component, penetrating, moisture-tolerant epoxy primer was then applied to ensure proper bonding and to strengthen the substrate. Next, a three-component epoxy resin formula was applied at 1/4 in. thickness. This material reduces installation time over conventional epoxies because it can be applied to large, open areas with the use of a power trowel.

To complete the system, a coating was applied to the newly installed floor to provide additional abrasion-resistant qualities and ease of cleaning. The solvent-based coating, formulated from a solid bisphenol, an epoxy resin and a polyamide curing agent, cures to a hard, impact-resistant film.

Results

The epoxy floor has shown excellent results at the General Dynamics facility. The constant forklift traffic at the plant is no longer a concern because the new system has demonstrated the capability of handling the heavy loads.

The Stonhard Difference

Stonhard is a world-leading manufacturer and installer of high performance polymer floor and lining systems designed for tough commercial and industrial environments requiring protection against corrosion, impact, abrasion and continuous daily wear. We deliver long-lasting, high-performance systems for tough environments. We offer customized solutions to satisfy the most demanding design specifications and work with you directly from start to finish. You are protected with a single source warranty on both product and workmanship. Known around the world for excellence, the Stonhard name means quality products and unmatched service.

The products used for this project include:
Stonclad GS
Stoncrest GS3

Blastrac blasting machine is a product of Blastrac Div., The Wheelabrator Corp., 400 S. Byrkit Ave., Mishawaka, IN 46544

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