

High-Performance Epoxy System Restores Deteriorated Floor at General Dynamics

The products used for General Dynamics include:
• Stonclad® GS • Stoncrest® GS3

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 a high-performance epoxy system, Stonclad GS by Stonhard, manufacturer and installer of seamless floors, walls and linings. They contracted to have the floor installed in their 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,

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- Paul Fried, Assistant Plant Engineer, General Dynamics, Eynon, PA

a scabblers 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 existing 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 Stonclad GS epoxy system 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 heavy loads.

The Stonhard Difference

Stonhard is the unprecedented world leader in manufacturing and installing high-performance polymer floor, wall and lining systems. Stonhard maintains 300 Territory Managers and 175 application crews worldwide who will work with you on design specification, project management, final walk through and service after the sale. Stonhard's single-source warranty covers both products and installation.