

STONHARD *Solutions*

New floor eliminates production problems

Sikorsky Aircraft plant replaces unsatisfactory high-build coating.

A new floor installed at Sikorsky Aircraft eliminated problems caused when the existing floor coating began to disbond from the concrete substrate. The plant, located in Stratford, Connecticut is the world's largest manufacturer of helicopters for both civil use and armed services. In areas where these aircraft are both manufactured and tested, the floor is exposed to frequent washdowns with water, spills of jet fuel and oil, heavy loading and continuous foot and vehicular traffic.

During a renovation of the production hanger at this facility, 42,000 square feet of a high-build coating was applied to the floor to provide an aesthetically pleasing work environment. However, shortly after the installation was completed, the coating began to disbond from the concrete substrate. This caused unsatisfactory working conditions and increased the potential for mechanical failure of the helicopters. Pieces of the unbonded coating were being tracked into aircraft mechanism by workers, creating what Sikorsky classifies as FODs, or Foreign Object Damage. The coating also caused a major slip hazard when exposed to water and oil.

High Performance Durability

Sikorsky needed to resolve these problems and have a new floor installed in one week's time to accommodate the manufacturing process.

A high-performance polymer flooring system was selected to provide superior bond strength and durability, while requiring minimal downtime for installation. A textured finish coating was also added to provide increased slip-resistance.

The remaining high-build coating was removed from the floor. Mechanical and chemical techniques were employed to ensure proper bonding. The existing concrete was mechanically prepared for the installation by use of a shot blast machine. This device removes loose material and provides a rough surface profile on the concrete, which is necessary to achieve the proper mechanical bond. To further enhance the adhesion between the concrete and the overlayment, a 2-component, epoxy-based priming system was applied.

Immediately after applying the primer, an epoxy-based mortar layer was installed. This system is made up of 3 components: epoxy resin, curing agent and graded aggregates blended with inorganic pigments. A "screed" applicator was used to apply the mortar, which was then compacted to 1/4 inch using power trowel in wide open areas and a steel hand trowel in hard-to-reach areas. These troweling techniques provide a very flat surface. This profile is not only aesthetically pleasing, but also makes it easier to operate carts and other wheeled vehicles. The polymer floor was then sealed with 100% solids, two-component, pigmented epoxy coating. Aggregate was mixed in the coating to provide a specific amount of slip-resistance, while maintaining cleanability. Finally, the joints were filled with a 2-component, flexible, epoxy-based sealant.



A power trowel is used in wide open areas to produce a smooth, flat surface. The floor is attractive, easy to maintain, and makes it easier to operate wheeled vehicles.

Sikorsky Aircraft Division considers the epoxy system to be 100% effective in solving their flooring problems and providing an aesthetically pleasing work environment. The facility is now free of any delamination, and maintains an effective level of slip-resistance. The installation was also successfully completed within the allowable amount of downtime. Mr. Paul Fellone, Sikorsky's Senior Construction Coordinator, had this to say about the system, "The product is excellent, the workmanship has been excellent, and the crews worked in a very professional manner."

The success of this flooring system has prompted Sikorsky to expand their facility renovations with the installment of more than 550,000 square feet of epoxy flooring.

The Stonhard Difference

Stonhard is the unprecedented world leader in manufacturing and installing high performance polymer floor, wall and lining systems. Stonhard's seamless, long-wearing and easy to clean floor systems are engineered to perform in both industrial and commercial environments without sacrificing design and innovative vision. You'll experience unparalleled products, easy maintenance, progressive and customized designs and Stonhard's single source warranty covering both installation and products. Stonhard maintains 300 project engineers and 175 installation teams worldwide who will work with you on design specifications, project management, final walk through and service after the sale.



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