

CASE STUDY

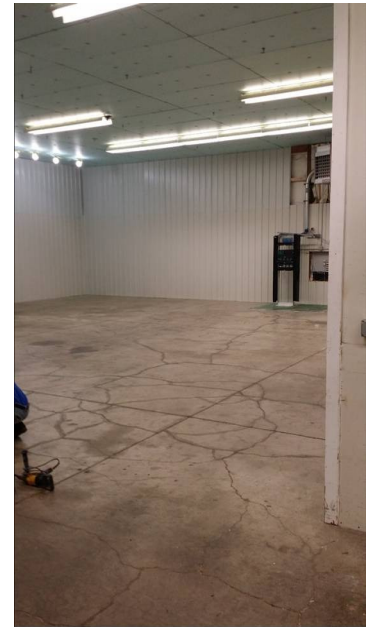
**FLOOR TREATMENT TACKLES
JET FLUID TROUBLES**



TITLE: Pro Squared Facility Solutions
Coordinates Floor Treatment to
Tackle Jet Fluid Troubles

SUB-TITLE: A hi-tech aerospace industrial firm needed a unique protective flooring solution when upgrading a building to handle powerful phosphate hydraulic fluids used in commercial aircraft.

CASE SYNOPSIS: The Moog Industrial Group of East Aurora, NY commissioned architects to plan the conversion of a 3,600 square foot building to handle high-performance, flame resistant phosphate hydraulic fluid. However, the existing concrete floor posed some particular challenges. A smooth, non-porous finish that would resist the solvent qualities of high-performance jet fluids was required. In addition, a web of cracks had spread throughout the floor due to overweight storage from the facility's prior use.



The Moog officials had a rigorous list of aesthetic and environmentally-friendly properties for the floor treatment. Also required was a clean, dust-free installation and application process. Pro Squared delivered on all counts. Application of its exclusive "Green Umbrella™ Max Defense System," Pro Squared's solution resulted in a surface with protective properties that traditional epoxy flooring simply couldn't provide. Plus, the entire project was done at a fraction of the cost of a typical epoxy coating.

CHALLENGES:

A. **Protection** – The highest priority of the flooring solution was to protect the floor and stop penetration of various chemicals and oils into the concrete surface and through to the ground below.



B. **Slip Resistance** – To maximize the safety of workers at the facility, the flooring surface needed to meet or exceed ADA slip-resistant standards.

C. **Aesthetics** – The application needed to allow for an attractive color, including incorporation of a logo design into the floor.

D. **Maintenance** - The finished surface would need to be easy to clean.

- E. **Durability** - Pro Squared's "Green Umbrella™ Max Defense System" needed to be far stronger than a typical epoxy floor treatment. The color also needed to resist fading and retain a shine.
- F. **Dust-Free Installation** – The extreme sensitivity of the products and work environment demanded that concrete dust should not enter the air and HAVC system at the facility during installation.
- G. **Non-Toxic and Odor-Free** – Environmentally-safe products and installation techniques were required to protect the health of workers. Control of odor during installation was also a priority.
- H. **Budget** – The materials and labor involved in the project needed to stay in line with an affordable budget set by facility management.

SOLUTIONS:

A. Grind, Hone, Polish:

- a) **Grinding** - Pro Squared technicians used diamond grinding machines to remove a thin layer of concrete at the surface. This also leveled and smoothed over any uneven spots. Water used in the grinding process virtually eliminated the possibility of concrete dust becoming airborne. Polyurethane caulk was used to fill in control joints, allowing for slight expansion and contraction of the concrete slabs.
- b) **Crack-Chasing** - A special 5-inch grinder worked as crack-chasing tool to make uniform $\frac{3}{4}$ " cuts into the extensive web of floor cracks caused by the previous use of heavy storage in the building. After routing and removing old caulk, the cracks were filled with a proprietary magnesium-based product called MGCrete, which is specially formulated to protect against solvents and oils like the phosphate hydraulic aviation fluids produced at the facility.
- c) **Honing** – Machines utilizing a series of finer, diamond resin grinding pads were used to hone the concrete to a smoother surface, ready for final treatment. All machines used in the grinding, honing and polishing process were propane powered, which is less expensive than electrical power and eliminates the need to tap into the facility's electrical power sources.





- d) **Polishing** – All dry polishing and treatments were done with a high-speed burnisher and special burnishing pads. The materials used in the final treatment actually did more than spread a coating over the surface, however. The patented products integrated *into* the tiny surface capillaries, actually making them part of the surface itself. This bond produces a highly protective surface that out-performs traditional epoxy treatments at a fraction of the cost.

B) Three Steps in the Pro Squared Polishing Process:

- a) **Dry Shield™** – The first line of defense, Dry Shield™ increases hardness while reducing the volume of the pores in the concrete surface. It stands up to heavy foot traffic while providing excellent slip resistance. It even decreases black tire marking from lift trucks and other equipment.
- b) **Shield and Enhance™** – This is an environmentally friendly product that deeply penetrates and chemically reacts with concrete to make the floor exceptionally resistant to the damaging effects of water and salt. This patented product also enhances the natural beauty of polished concrete, giving it a deeper and richer appearance.
- c) **Microfilm** – Pro Squared's use of its proprietary Green Umbrella Microfilm™ product adds a durable, micro-thin layer that shields polished concrete. It is highly resistant to aviation oils, stands up to chemical exposure and resists peeling or flaking, while providing a beautiful high-gloss finish.

RESULTS:

- A. **Protection** - The flooring application by Pro Squared accomplished the goal of superior protection from the strong solvent properties of hydraulic jet fluid being handled in the building.
- B. **Safety** - The installation process was odor-free, and successfully prevented concrete dust from entering the air, HVAC system and machinery at the facility.
- C. **Appeal** – The surface has eye-appeal to appropriately reflect the corporate brand, including the ability to integrate a corporate logo.
- D. **Savings** – The project was completed on time and at budget, actually providing superior performance while saving significant money compared to the cost of traditional epoxy flooring treatments.