

Functional Flooring

Flooring issues necessitating repair:

Slab Movement

Concrete slabs are designed with joints to allow for some natural expansion and contraction of the concrete. In the industrial environment, unremediated slab movement can increase cracking and spalling, and contribute to the failure of existing repair and fill materials.

Despite the flexibility of some of these materials, slab movement can disrupt the adhesion of the repair material, causing failure.

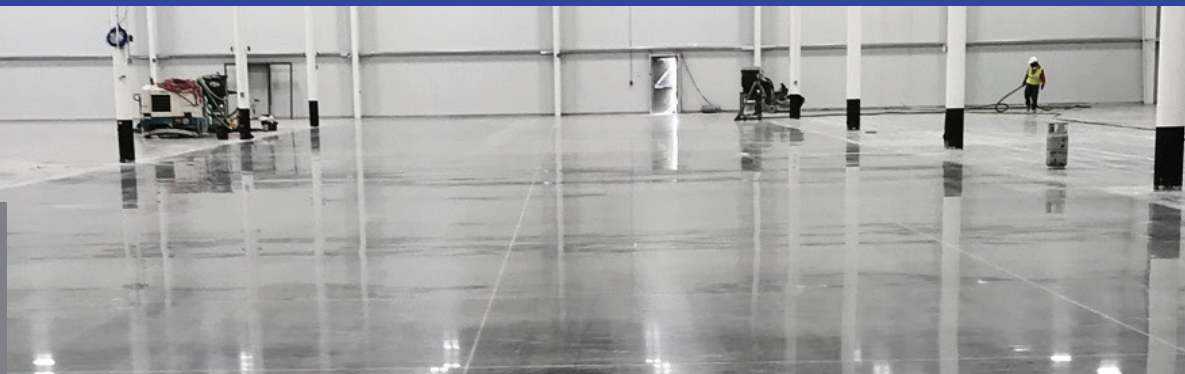
Impact

Impacts to the floor surface contribute to slab damage and necessitate repair for a few key reasons. Impacts from multiple sources on a repeated basis can cause cracks, pop-outs, and larger problem areas, requiring extensive patching to preserve the integrity of the surface and to support safe operations in the plant.

Vibration

While concrete is an incredibly durable material, machine operation and industrial use can induce high levels of vibration within the slab.

Vibration exerts force on the floor such that it can exploit existing defects in the concrete slab, especially at seams and joints, contributing to damage ranging from pop-outs and cracks to larger failures in the substrate.



More concrete floor surfaces are requiring remediation to retrofit existing properties for new purposes and to correct defects, and elevation and flatness deviations on new construction projects prior to turnover.

Perfect Polish creates plans to complete remediations and floor corrections utilizing expertise gained over more than two decades of experience with concrete flooring, with safety, quality, and schedule first in mind.



Project Spotlight: FC-04 Distribution Center • Atlanta, GA

• General Contractor:
Ryan Companies

• Duration:
7 days

This project required remediation of several large areas of high and low spots in the substrate for maximum safety and functionality in the distribution warehouse environment. A laser generated report was used to determine the areas of remediation, with multiple areas failing for maximum floor surface elevation deviation, and others failing floor flatness requirements.

Contact Us

Shawn Dean

Solutions Advisor

865.279.3370

shawn.dean@perfectpolishonline.com

Kyle Trepanier

Director, Business Operations

865.599.8573

kyle@perfectpolishonline.com

Flooring Preparation and Repair for STX3 Robotic Sortation Facility

In late October of 2020, Perfect Polish was contracted by CSI Construction Group to complete flooring remediation and repair of an existing large-scale distribution facility, which was being retrofitted for functionality as STX3, a robotic sortation facility.

Project Requirements

Sortation facility retrofits present a stringent set of requirements for concrete flooring, and STX3 was no exception. Since the facility utilizes delicate robotic technology, care needed to be taken to ensure the 194,400 square foot concrete floor met not only the strict specifications, but also met the client's quick turnaround.

In order to ensure maximum efficiency and function of the robotic equipment, flooring in these facilities must be flat, with flush joints and no impediments to the equipment's movement. These requirements included a specular gloss not exceeding 20° when measured at an 85-degree angle, and roughness averages not exceeding 50 μin . In addition, the utilization of the site required remediation of joint spalling, embeds in the floor, trenches, and remediation of differing elevation profiles in multiple areas.



Project Challenges

The substrate on this project required a great deal of remediation and repair to meet the client's needs. In addition to 8 areas of elevation remediation, the specular gloss ranged between 4 and 70 degrees across the work site. The roughness averages ranged between 31 and 145 μin . Over 26,000 linear feet of sawn contraction joints and 1,200 linear feet of construction joints were experiencing spalling, with some areas spalling up to 3-inches in width. Column isolations with gaps in flushness, and hundreds of repairs of embeds, including bolts also affected the substrate, requiring extensive repair.



Project Outcomes

Perfect Polish crews worked to remediate the spalled joints, areas of differing elevations, and the embeds and other extensive repairs, before filling the joints. Repair of the bolt holes required drilling down and filling voids. Over 26,000 linear feet of contraction joints required full depth placement for reinforcement of the joints.

The joints also required grinding flush, which was achieved by picture-framing all of the joints in the substrate to ensure a flat surface. Eight areas of differing elevations were remediated using concrete grinding equipment, before the entire floor was ground and sealed to a matte finish to meet robotics equipment requirements. Column isolations were repaired and made flush as well to complete the retrofit. The finished floor met project requirements after subsequent inspection by the client's concrete consultant.

The entire project duration was 40 days, with 5 days dedicated to the joint filling process.

Functional Flooring: FC04



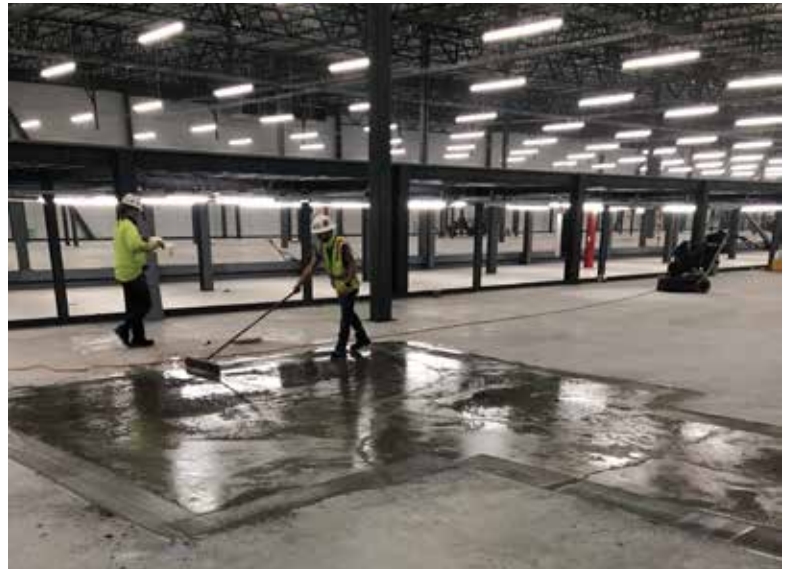
Perfect Polish was contacted to complete remediation work by Ryan Companies, for an existing distribution site, FC04. This project included remediation and repair of multiple problem areas on an extremely tight timeline to meet the needs of Ryan Companies and to ensure maximum usability for a large retail client.

Project Requirements

This project required remediation of several large areas of high and low spots in the substrate for maximum safety and functionality in the distribution warehouse environment. A laser generated report was used to determine the areas of remediation, with multiple areas failing for maximum floor surface elevation deviation, and others failing floor flatness requirements. The floor also required polishing to match the existing warehouse, which had previously been polished by another subcontractor.

Project Challenges

The substrate on the project required a novel approach to solving the deviations in flatness and maximum elevations throughout the space. Perfect Polish created a plan that involved several steps to bring the floor surface to within the required elevation tolerance. Several high areas of remediation required removal of more than $\frac{1}{4}$ of an inch of material, while other areas required the addition of more than $\frac{3}{4}$ inch of material to meet client needs. A quick turnover to the client also necessitated a tight timeline of seven days.



Project Outcomes

Crews worked to remediate the high areas utilizing grinding equipment and process that included removal of large quantities of material. For the low areas needing remediation, crews first used the client's report to identify and mark the problem areas, following up with sawing around the problem areas, creating an edge to contain the material needed to bring the floor up to the correct flatness and elevation, and relied heavily on the crew's expertise and accuracy to meet thresholds. The area of concrete remediation comprised over 16,000 square feet of the building's substrate.

Perfect Polish crews completed this work in a 7-day duration, which included over 12,000 square feet of polishing and 6,000 square feet of sealed concrete, with both Ryan Companies and the retail client highly satisfied with the outcome.



Functional Flooring: Fort Meade AAFES



Perfect Polish was hired by an AAFES project manager to remove a delaminating paste cap on a 110,000 square foot retail shopping center at Fort Meade in Anne Arundel, MD and complete a 1500-grit re-polish.

Project Requirements

The AAFES on Fort Meade needed a safe, functional, and aesthetically pleasing floor in its facility. A previous polisher had completed the polish scope, but when the facility was cleaned of construction debris, it became clear that the cap was separating, as large spiderwebs of cracks, or "crazing" became evident. After a consultant's review, separation was occurring 1/8th inch under the paste cap, causing large pockets of unstable and cracking substrate. The project required completion of the repairs, as well



Project Challenges

Specific to this remediation, the delaminated cap required removal without damage to the aggregate below. Multiple passes of the floor were required to remove high spots and expose the underlaying aggregate. Nearly 50 tons of material were removed to level and correct the concrete slab in order to provide the best substrate for the final polished finish. Crews worked inside the finished building, hanging plastic to keep dust from settling on the walls and fixtures. Perfect Polish utilized its expertise to determine methods that would ensure maximum quality and meet safety standards. A thirty-man crew was mobilized, including required background checks and security clearance checks within two weeks of receiving the contract.

Project Outcomes

Perfect Polish completed not only the remediation of the delaminating paste cap, but then completed polish work on the 110,000 square foot facility. The final flooring finish met the aesthetic and structural needs of the concrete and the issues with the paste cap delaminating were remediated successfully. All repairs and the repolishing of the floor were completed six-weeks, meeting the client's tight timeline.





FLOORING EXPERTS
SAFETY - QUALITY - SCHEDULE

Selected Projects

AWS / AR Sortation

AWS OSU 060 - New Albany, OH

Scope:
Grind & Polish - 15,500 square feet
Sealed Concrete - 4,200 square feet
Edges
Joint Fill

GC:
Walbridge

Contract:
\$47,900

AWS OSU 061 - Dublin, OH

Scope:
Sealed Concrete - 19,700 square feet
Joint Fill

GC:
Gray Construction

Contract:
\$29,600

AWS OSU 062 - Hilliard, OH

Scope:
Grind & Polish - 10,502 square feet
Sealed Concrete - 4,200 square feet
Edges
Joint Fill

GC:
Hitt Contracting

Contract:
\$47,900

AWS CMH53 - New Albany, OH

Scope:
Grind & Polish - 17,748 square feet
Sealed Concrete - 7,200 square feet
Edges
Joint Fill

GC:
Walbridge

Contract:
\$44,800

AWS CMH 054 - Dublin, OH

Scope:
Sealed Concrete - 19,700 square feet
Joint Fill

GC:
Gray Construction

Contract:
\$29,600

AWS CMH 055- Hilliard, OH

Scope:
Grind & Polish - 16,000 square feet
Sealed Concrete -
Edges
Joint Fill

GC:
Hitt Contracting

Contract:
\$56,800

AWS VA Data - New Albany, OH

Scope:
Grind & Polish - 24,487 square feet
Sealed Concrete - 4,776 square feet
Edges
Joint Fill

GC:
Walbridge

\$60,109

STX3 - Dallas, TX

Scope:
Repair and remediation of existing slab issues, including elevation remediation, full-depth joint reinforcement, 26,000 linear feet of contraction joints 1,200 linear feet of spalled construction joint repair

GC:
CSI

\$544,902

Project Force - Fargo, ND

Scope:
Grind & Polish - 19,091 square feet
Joint Fill
Skudo Floor Protection
EPX-1

GC:
Ryan Companies

\$130,430



FLOORING EXPERTS
SAFETY - QUALITY - SCHEDULE

PO Box 151 - Norris, TN
877.917.4463
perfectpolishonline.com

Major Industrial Projects

Company Name	Address	Square Feet Completed	Scope of Work Performed	Year
Lear Corporation	6675 Daniel Burnham Dr. Portage, IN	225,000 SF	Concrete Polishing	2015
Keurig	7705 Staples Dr. Douglasville, GA	132,200 SF	Concrete Polishing	2015
Aligned Energy	2800 Summit Ave. Plano, TX	102,612 SF	Concrete Polishing	2016
ECS Corporation	3247 W. March Lane Ste. 100 Stockton, CA	633,216 SF	Concrete Polishing & Overlay	2016
Fiat-Chrysler Body Shop	3000 W. Chrysler Dr. Belvidere, IL	315,000 SF	Concrete Repair & Polishing	2017
Magna Manufacturing	6200 26 Mile Rd. Shelby Charter TWP, MI	323,200 SF	Concrete Polishing	2017
Lear Corporation	902 E. Hamilton Ave. Flint, MI 48505	88,000 SF	Modified Concrete Polish System	2018
Arthrex Anderson MFG	130 Arthrex Dr. Bldg. A Pendleton, SC	147,000 SF	Concrete Polishing & Resinous Flooring	2019
Hyundai Motor	700 Hyundai Dr. Montgomery, AL	268,402 SF	Concrete Polishing	2019
Samsung S1	284 Mawsons Way Newberry, SC	378,540 SF	Concrete Polishing	2019
FCA WTAP 2021	21500 Mound Rd. Warren, MI	1,100,000 SF	Concrete Polishing	2020