



RESINDEK® FLOORING INSTALLED ON ELEVATED WORK PLATFORM OVER ICON MECHANICAL'S NEW CLEANROOM

◆ A RESINDEK® SUCCESS STORY

A rapidly expanding mechanical contractor in Charlotte, North Carolina, ICON Mechanical needed a highly specialized cleanroom environment to support fabrication work. To maximize the facility's available footprint, the company also sought to create the space beneath an elevated work platform without compromising cleanliness, safety, or workflow efficiency.

To deliver the integrated solution, modular building expert Panel Built and one of its distributors, Stein Supply, partnered to design and fabricate a modular ISO 8 cleanroom system housed under a structural mezzanine. To provide a durable, clean, and high-performance walking and storage surface, approximately 2,500 square feet of ResinDek® LD engineered floor panels were installed on the elevated platform.

"We needed a dedicated cleanroom space for all of our high purity stainless steel and pharmaceutical welding and pipe fabrication," explained David Beard, Senior Vice President of ICON Mechanical. "At the same time, we saw the opportunity to create an upper-level mezzanine used for tools, parts storage, and maintenance access."

ENGINEERED FOR OPEN SPACE, LOAD DEMANDS, AND CLEANROOM CONSTRAINTS

Unlike traditional industrial mezzanines, the ICON Mechanical installation was designed as a fully integrated ISO 8 cleanroom environment with strict environmental requirements and engineered airflow systems. According to John Mayo, Project Consultant with Stein Supply, the lower-level cleanroom required careful coordination of air circulation and enclosure systems.

"The mezzanine above was engineered to support maintenance access, light storage, and operational flexibility," he said. "It also had to avoid introducing contamination risks into the cleanroom below."

The cleanroom features 3-inch, 3-ply wall panels with vinyl-covered gypsum and a polystyrene foam core, along with a 10-foot ceiling height and HEPA filters to support the application. A 12-foot by 10-foot framed opening for a high-speed roll-up door provides convenient access, while windows and personnel doors helped create a practical layout for day-to-day use.

Personnel access the upper level of the structure via bar grate stair treads with closed risers. An integrated vertical conveyor enables safe movement of materials between levels without disrupting personnel traffic.

One of the project's design challenges was ICON Mechanical's request for a wide-open cleanroom environment with no internal columns. This required Panel Built's engineering team to carefully relocate structural support points to the perimeter while maintaining load capacity and stability.

"With the request for maximum open space, we designed the structure to place beams and columns along the wall so they would still hold up structurally," explained Christian Mills, Engineer with Panel Built. "Additionally, the joist configuration beneath the ResinDek panels was critical to creating the open space."

RESINDEK SELECTED FOR DURABILITY, CLEANABILITY, AND STRUCTURAL COMPATIBILITY

For the elevated mezzanine deck, Panel Built selected ResinDek engineered floor panels installed over a steel B-deck sub-surface. This supports both structural load demands and cleanroom-adjacent environmental requirements.

"We decided to go with ResinDek over oriented strand board (OSB) or standard flooring," Mills said. "It's a better look, and from the engineering side it's a lot easier to work with."

Additionally, he emphasized the system's tongue-and-groove design as a key advantage in both fabrication and installation. *"ResinDek is very easy to work with. Our design team and installers really like the tongue and groove feature on the ResinDek panels," explained Mills. "It locks in, uses less screws and fasteners, while still maintaining stability needed for foot traffic and dollies."*

Mills also noted long-term familiarity with the product across multiple projects.

"Panel Built has been using ResinDek for over a decade," he added. "It's something we trust. We've never experienced any cracking, deformation, or other issue. It holds up to the quality standard our customers expect."

FAST INSTALLATION

On-site construction proceeded quickly once approvals were finalized. *"Once we got it approved, we put it together in about six weeks," Mayo said.*

The ResinDek panels were staged and installed efficiently as part of the phased build process, with coordination between Stein Supply, Panel Built, and ICON Mechanical's internal teams.

Mayo noted that the flooring panel's repeatable installation process helped keep the schedule on track.

"Our installation team has never had an issue with the ResinDek flooring. It's always the right product for what we're trying to do," he added.



FLEXIBLE, HIGH-PRECISION CLEANROOM ALLOWS FOR FUTURE EXPANSION

Beyond the initial installation, ICON Mechanical's facility was designed with flexibility in mind, allowing for future expansion and additional interior buildouts.

According to Beard, the completed system delivered both functional cleanroom capability and valuable vertical space utilization.

"The upper mezzanine gave us additional floor room and floor space, which is always at a premium," Beard said. "ResinDek's tongue-and-groove system ensures all seams are even, preventing trip hazards and providing a smooth surface for carts or pallet jacks to roll on. The ResinDek coating is durable, easy to clean, and looks great."

Panel Built emphasized that adaptability was a defining feature of the project approach.

"The spaces we design and engineer are not cookie cutter products," Mills said. "We can do office space, cleanrooms, and mezzanines with ResinDek. Whatever the customer wants, we can provide."



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