

SEMICONDUCTOR CAMPUS COATINGS

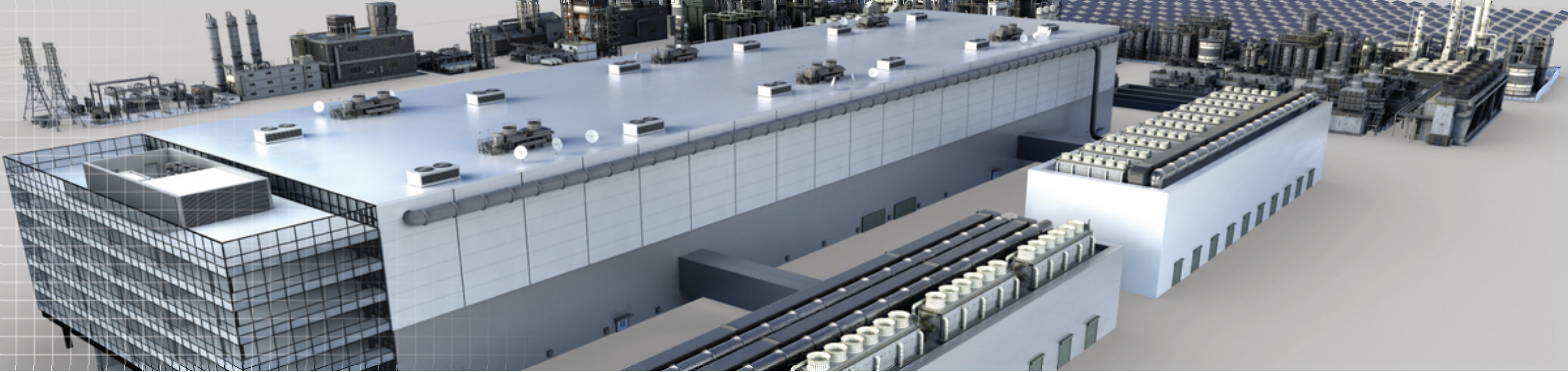
INTRICATE MANUFACTURING PROCESSES REQUIRE CUTTING-EDGE PROTECTION



FROM SPEC TO PROTECT

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EVERY CAMPUS STARTS WITH CONCEPT, DESIGN, AND CONSTRUCTION PLANNING

To meet the needs of the emerging onshoring of semiconductor wafer manufacturing, it is critical to consider the unique service environments found in fabs during the design, specification and construction optimization for safer, faster and simpler projects. Often the construction of these semiconductor fabs can be outpaced by the technological advances of the industry, which makes the project schedule more critical. Therefore, owners and constructors are tasked with building these facilities quickly and accurately.

Sherwin-Williams Construction Solutions partners with constructors to help navigate and reduce complex and lengthy construction timelines by integrating coatings solutions to off-site manufacturing and shop-applied processes. These processes utilize scalable and repeatable coating systems, highlighting sequencing opportunities that compress schedules, reduce jobsite congestion, and introduce contractors to a qualified network of fabricators, fireproofers, applicators and installers.



The Construction Solutions team is the first call for semiconductor fab expertise and collaboration with owners, general contractors, and engineers to achieve a SAFER environment, a FASTER build, and a SIMPLER process during construction. Our team works with you to identify overlooked opportunities that can save you time and money:

- Works extensively with engineers and architects at the conception of the semiconductor fab construction project to ensure that developed coating specifications match conditions and meet the rigors of a semiconductor fab.
- Provides chemical resistance coating development assistance, and establishes substrate preparation standards with semiconductor-experienced steel fabricators, fire proofers and applicators.
- Leverages innovative construction processes, such as off-site manufacturing, modular construction and shop application considerations - helping general contractors save time with increased throughput.





THE MAIN FAB: WHERE CHIPS ARE PRODUCED

CLEAN ZONES - MAIN MANUFACTURING AREA

Semiconductor wafer manufacturing clean zone requirements are extremely stringent, proposing unique challenges. Clean zones must be pristine due to the high cost of wafers and equipment. Protective coatings must withstand chemical and traffic exposures while meeting strict limits for airborne molecular contamination (AMC) to protect wafers and sensitive equipment.

Coating needs:

- Epoxy or solvent-based fire protection
- Corrosion protection
- Chemical-resistant coatings
- High performance coatings for concrete columns/walls

NON-CLEAN ZONES - SUPPORTING LEVEL TO CLEAN ZONE

The utility level to the clean zone have different needs. AMC control is unnecessary, but static control, high traffic and chemical resistance remain important. These areas, housing machinery, electrical panels, and utility systems, require heavy-duty coatings to protect the concrete floors.

Coating needs:

- Corrosion protection
- Chemical-resistant coatings
- High-performance coatings for concrete columns/walls

OTHER CRITICAL SUPPORTING BUILDINGS ON CAMPUS:

CENTRAL UTILITY BUILDINGS (CUB)

CUBs supply water, electricity, gas, and regulate power to the main fab building. These buildings endure high traffic, elevated temperatures, exhaust gases, and waste streams, necessitating robust protective measures.

GAS CONTROL SYSTEM (GCS)

GCS includes multi-story storage areas and a conditioned building for chemical storage, supporting FABs. Key concerns are segregating flammable and non-flammable areas, using chemical-resistant coatings, and ensuring flooring can withstand heavy traffic.

INDUSTRIAL WASTEWATER TREATMENT PLANT

Handling up to 5 million gallons of water daily, the plant creates ultra-pure H₂O for wafer manufacturing and treats wastewater for recycling or reuse. The containment systems and equipment used to process this water needs to be heavily protected with chemical-resistant coatings to preserve the integrity of the assets and the water running through them.



OWNER TESTED AND APPROVED COATING TECHNOLOGIES

The Materials We Supply

CHEMICAL-RESISTANT COATINGS (CRCs)

High-performance chemical-resistant floor coatings and secondary containment lining systems are critical to protecting concrete surfaces in aggressive chemical storage and loading environments in all areas of the campus. Core products have been identified, qualified, and determined suitable for use in the various specified chemical-resistant coatings (CRC) applications in semiconductor facilities. Our CRCs are fully customized to the exposures of each area in your unique facility.

INTUMESCENT FIREPROOFING

Essential for any facility, fireproofing is especially important for high-fire-risk areas, such as semiconductor fab clean zones with large quantities of electrical equipment, fully automated processes, continuous airflow, and flammable and explosive substances. With fast-tracked project timelines creating an increase in on-site construction activity, choosing off-site application of intumescent fire protection materials makes sense. If project sequencing allows, off-site fireproofing of structural steel affords simpler project scheduling as well as a safer and cleaner construction environment, compared to traditional on-site sprayed fire-resistive materials.



HIGH-PERFORMANCE STEEL AND CONCRETE COATINGS

Ensuring optimal protection for structural steel and concrete in semiconductor fabs and supporting buildings is crucial. Highly durable, corrosion-resistant coatings are essential to safeguard the integrity of steel both during and after construction. These coatings must also be low-emitting to comply with the stringent requirements of this technically complex industry. Utilizing offsite steel application and precast-coated concrete enhances quality control, ensures uniform application, and reduces on-site labor and environmental emissions.

INDUSTRIAL WATER TREATMENT LININGS/CONTAINMENT

Maintaining water purity level is imperative – and so is maintaining the infrastructure that houses and transports that water. Constant exposure to toxic, corrosive chemicals easily break down and corrode steel and concrete, taking your water transmission, storage, and treatment assets out of service. Our durable, ultra-high solids coatings and linings offer high film builds and long-term, superior protection of pipes and storage tanks.

DURING CONSTRUCTION – PRODUCT DELIVERY AND ONSITE TECHNICAL SERVICE

Product Distribution and Delivery

PRODUCT AVAILABILITY:

From coatings to equipment and supplies, get exactly what you need in one location.

JUST-IN-TIME DELIVERY:

We understand the importance of timing and quick action – downtime is money lost. Count on us for fast delivery to keep momentum going.

CONVENIENT LOCATIONS:

With over 300 dedicated commercial/industrial stores, and 4700+ total distribution points, we'll be where you need us.

ONSITE TECHNICAL SERVICE:

Working with a semiconductor-dedicated technical service rep can help alleviate application issues. Including a tech rep in your coatings process will help complete your project quickly and accurately, and with minimal touch-up work.



WHEN YOUR FAB OR SUPPORT BUILDINGS NEED MAINTENANCE

Ensuring coating lifecycles keep fabs operational

Keeping a semiconductor fab operational is challenging when the thousands of multiple functions need to go right 100% of the time. Our asset protection managers (APMs)

are trained in semiconductor fab coating systems built from the specifications, making them the go-to experts when it comes to the maintenance of coating systems.



EXTEND LIFE OF ASSETS

- Scheduled surface assessments
- Properly installed solutions
- Increased lifecycles



FASTER RETURN TO SERVICE

- Owner-approved coating recommendations
- Ability to coat occupied spaces
- Efficient installation techniques



VALUE-ADDED BENEFITS

- Informed maintenance decisions
- Prioritized spending plan
- Fewer unplanned shutdowns

For more information contact your local Sherwin-Williams representative or visit [sherwin-williams.com/protective](https://www.sherwin-williams.com/protective).

SEMICONDUCTOR CAMPUS COATINGS

CUTTING EDGE TECHNOLOGY MEETS INTRICATE
MANUFACTURING PROCESSES

THE SHERWIN-WILLIAMS DIFFERENCE

Sherwin-Williams Protective & Marine delivers world-class industry subject matter expertise, unparalleled technical and specification service, and unmatched regional commercial team support to our customers around the globe. Our broad portfolio of high-performance coatings and systems that excel at combating corrosion helps customers achieve smarter, time-tested asset protection. We serve a wide array of markets across our rapidly growing international distribution footprint, including Energy, Water & Wastewater, Bridge & Highway, Steel Fabrication, Flooring, Manufacturing & Processing, Fire Protection, Marine, Rail and Power.



Unparalleled
distribution network



Global
industry expertise



Most extensive sales
organization coverage



Unmatched technical
and specification service

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