

retrofit

2022 retrofit
TOP 25
PRODUCTS

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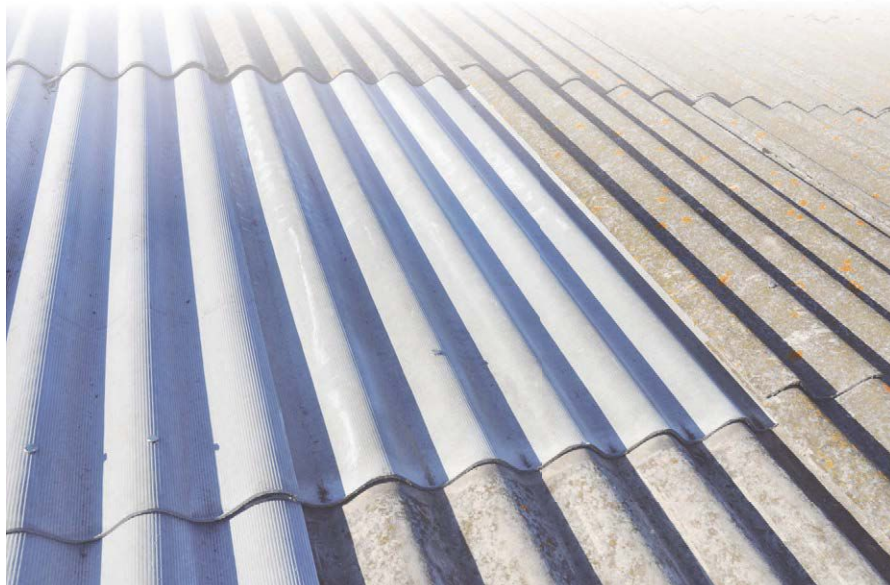
SAATCHI & SAATCHI

* TREND ALERT:
stranded
assets

TRANSITE ROOF RE-COVER

WRITTEN BY | ROBERT SITERLET





PHOTOS: ROBERT SITERALET

AN ASBESTOS-LADEN ROOFING PRODUCT ON A FOUNDRY IS COVERED, RATHER THAN ABATED

Although the majority of roof systems are destined for landfills, this doesn't have to be the case. By re-covering an existing roof system—no demolition required—a client retains the initial roof investment and intended functionality; the entire building structure is strengthened from the additional tensile strength of the system; and thousands of pounds of roofing material remain in use and out of landfills.

One such example of a successful—yet complicated—roof re-cover is Atlas Foundry Co. Established in 1893, the business produces gray iron castings for the agriculture, construction, transportation and manufacturing industries. Foundry facilities are built to withstand intense processing heat loads because of the high temperatures of furnaces and other equipment used in the material

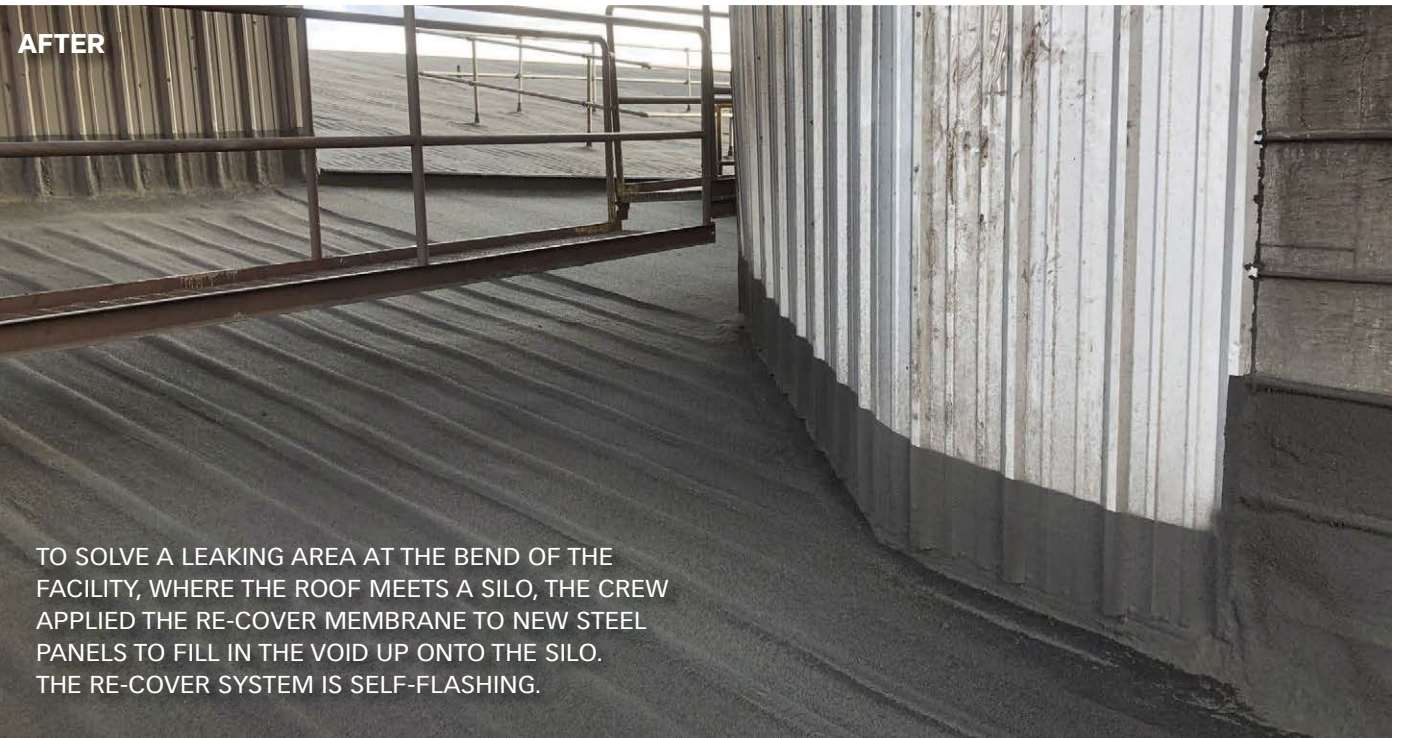
processing.

Atlas Foundry's 90,000-square-foot Marion, Ind., facility was built in 1958—a time when a new Chevy Bel Air cost \$1,987 and asbestos-laden products were all the rage. Asbestos had long been praised for its heat-resistant properties and durability. Naturally, it was widely accepted as a necessary additive to strengthen the performance and durability of construction products, especially roofing panels. After 63 years of use, the Marion facility's transite—an asbestos-laden, cement-board material—roof was cracking and allowing moisture into the building, which is a serious problem for a foundry.

The client needed a solution that would withstand the high temperatures generated by the foundry's equipment and processing, as well as ensure the foundry's production would remain on schedule. Working on a transite roof



BEFORE



AFTER

TO SOLVE A LEAKING AREA AT THE BEND OF THE FACILITY, WHERE THE ROOF MEETS A SILO, THE CREW APPLIED THE RE-COVER MEMBRANE TO NEW STEEL PANELS TO FILL IN THE VOID UP ONTO THE SILO. THE RE-COVER SYSTEM IS SELF-FLASHING.



BEFORE



AFTER

FIBERGLASS SKYLIGHT PANELS WERE NO LONGER LETTING LIGHT INTO THE FACILITY. NEW CUSTOM FIBERGLASS SKYLIGHTS ARE HIGH-STRENGTH WITH MATCHING CORRUGATION AND RIB PROFILES THAT FIT EVENLY WITH THE TRANSITE PROFILE. THE PANELS ARE PLACED WHERE THE ORIGINAL SKYLIGHTS ONCE WERE AND THEN SEALED IN WITH THE RE-COVER SYSTEM.

created additional challenges for the roofing team to consider.

TRANSITE HISTORY

Transite was officially banned from production in 1985 after the public became aware of the health-related effects from long-term exposure to asbestos. In fact, during the heyday of manufacturing construction materials with asbestos, manufacturer spec sheets list many construction products as containing no less than 45 percent asbestos by weight. That's not a typo!

Fireproofing aside, the longevity of a transite roof was an estimated 50 to 70 years. That aspect alone positioned transite products as a must-have roof system for a multitude of manufacturing facilities built in the U.S. between 1930 and 1980. To this day, hundreds (if not thousands) of original transite roofs are still protecting chemical plants, paper mills, textile factories and foundries.

Asbestos removal is extremely expensive and dangerous and, therefore, regulated by the EPA and OSHA. In addition, transite panels are heavy, weighing anywhere from 50 to 60 pounds for a typical 12-foot-long roof panel. It also costs a small fortune to transport the material to a specially designated landfill for hazardous waste. Many building owners choose to abandon buildings with transite roofs rather than consider other options.

CHALLENGES AROUND

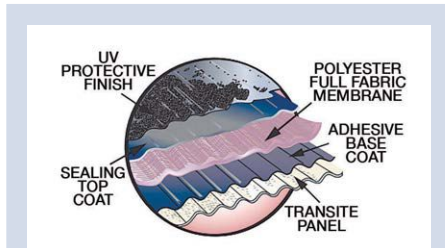
There were many challenges with Atlas Foundry's re-cover project. For one, the Marion facility's structural integrity was a concern. Withstanding weather for more than 60 years contributes to the traditional wear and tear of a building structure (think: annual thermal expansion and contraction).

The moisture leaking into the facility not only can introduce contaminants into production, which compromises product integrity, a simple drop of water in the wrong place can cause a catastrophic explosion.

The chemical processing that takes place at Atlas Foundry produces significant amounts of sulfur and other noxious vapors. The years of chemical offgassing had all but decommissioned the fiberglass skylight panels, leaving a safety hazard. The skylights had served as a light source in the event of a power outage. They're mathematically engi-

neered to cast light in a series of lines, leading the way to exits. The old skylight panels would have to be removed and replaced.

Because the facility is located in a residential neighborhood, the client decided a roof restoration would be safest. Tearing off a transite roof could release millions of tiny asbestos fibers into the air.



This roof re-cover system doesn't disturb any in-place asbestos-containing roofing material and there are no additional fasteners, so the transite remains non-friable.

THE RE-COVER

The restoration process seals the hazardous transite material tightly while adding 80,000 to 100,000 pounds of tensile strength to the roof.

The system begins with a primary layer of specially formulated asphalt that is sprayed directly onto the transite panels, followed by the application of a polyester membrane along the sprayed path. After the membrane is in place, crew members "broom down" the membrane so it adheres directly to the transite.

Once the section has been broomed down, the sprayer returns to apply another topcoat of specially formulated asphalt to seal-in the membrane. Seams of the membrane are effectively sealed underneath the second layer of asphalt, making it seam-free.

The asphalt in this first phase is then left to cure for four to six weeks and solidify. Once cured, the crew returns to apply a fresh layer of the asphalt followed immediately with an application of recycled, carbon-based roofing granule. The granules are embedded into the asphalt. This top layer of asphalt cures with the granules in place. The multi-layer system becomes a seamless, monolithic wrap that can flex with the building while keeping the transite intact, thanks

TO THIS DAY,
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THOUSANDS) OF
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RETROFIT TEAM

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AFTER: FASTENERS AND LAP JOINTS ARE NO LONGER SUSCEPTIBLE TO WATER ENTRY WITH THE NEW MEMBRANE OF THE RE-COVER SYSTEM LAMINATED TO THE TRANSITE PANELS.

to the added tensile strength.

Adding just 12-14 ounces per square foot to the structure, the foundry had no issues supporting the weight of the new roof system. Now, the top surface will be renewed every 10-15 years with a fresh layer of asphalt and additional granules.

This roof re-cover system is preferable for transite not only because it doesn't disturb any in-place asbestos-containing roofing material, but also because there are no additional fasteners. There is nothing the crew does to create friable asbestos-containing roofing material.

However, the team followed a safety plan and held crew meetings every day before getting up on the roof. The meetings reiterated safety plans, proper entrance and exiting points, as well as fall-safety requirements. In addition to proper fall-protection equipment, all crew members wore leather gloves to protect them from touching the transite. Because the transite was non-friable, masks were not required.



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photo: James John Jetel

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JOB WELL DONE

Commercial roofing is always a rewarding business.

However, re-covering a transite roof not only protects the people working at the facility, it protects the business itself by saving usable floor space without having to shut down operations. It allows the business to retain the most beneficial aspect of its original transite roof, which is the fire-resistant properties. (The re-cover solution also comes with a Class A fire rating.)

Our team is thankful to have the opportunity to act as environmental stewards by offering companies an alternative to discarding their old asbestos-laden roof systems into landfills.

And the gratitude expressed by the foundry workers who now have a safe and dry workspace to perform one of the most dangerous jobs in America is appreciated. 



AN ACCESS WALKWAY AND ITS POSTS AND PENETRATIONS WERE SEALED WITH THE RE-COVER SYSTEM.

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