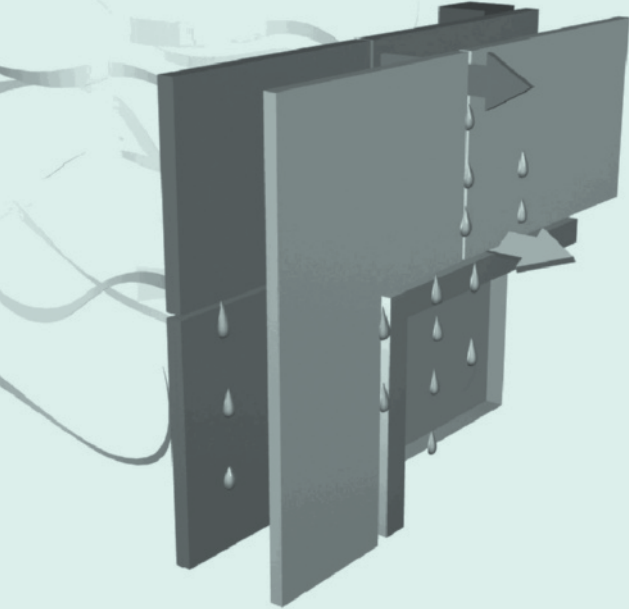




Proglaze[®] ETA
**High-Performance
Connections** for the
**High-Performance
Building**



PROGLAZE ETA ENGINEERED TRANSITION ASSEMBLIES. CLEAR PROOF OF A PERFECT SEAL.



An airtight connection can now be ensured at the window-wall interface with Proglaze ETA.

MINIMIZE RISK. MAXIMIZE CONTROL OF AIR AND MOISTURE INFILTRATION.

Just one small gap can lead to major problems from air and moisture infiltration. Differential movement can lead to joint failure if not properly detailed. On-site conditions can leave joints that are impossible to seal with a sealant. And, while the window-wall transition is where most problems occur, connections at roof-to-wall, foundation-to-wall, corners, penetrations, drift joints, and floor deflection joints are also critical connections with the potential for increased liability.

Connections throughout the building envelope are key to longevity of the structure and its structural components, energy consumption, indoor air quality and maintenance. Specifications left to “others” for these connections, lead to uncertainty, interpretation on the job, and trial and error. Traditional methods may not work, particularly over the long term after continual exposure to thermal movement or dynamic movement. Depending on the conditions, they may not even work at the outset if existing conditions leave unsupported gaps which cannot be addressed by sealants, foams or peel and stick flashing membranes.

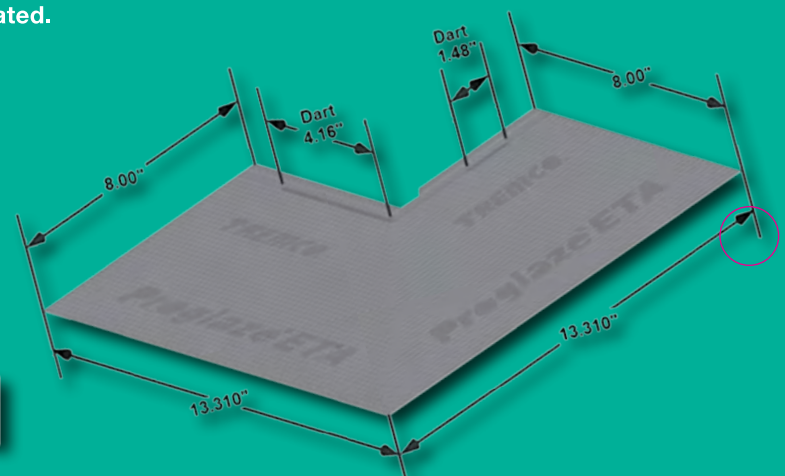
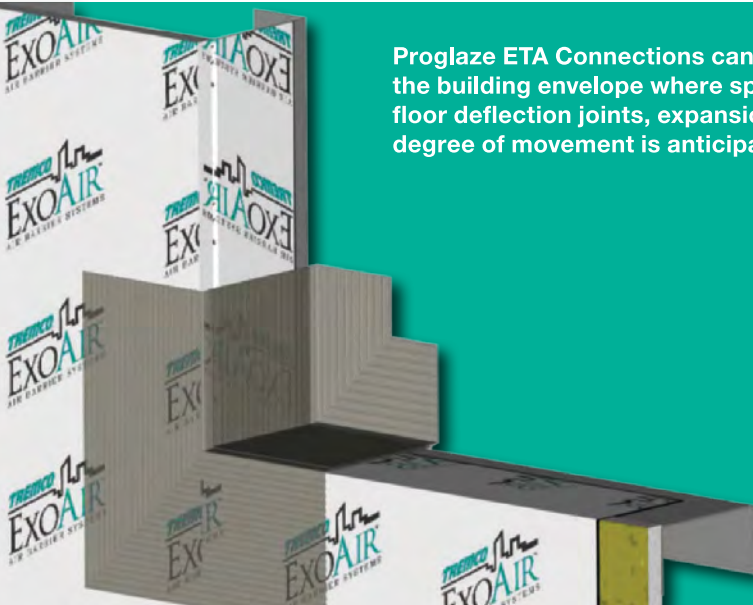
When performance or design requirements demand a PROVEN solution for sealing these transitions and long-term connectivity, Tremco Commercial Sealants & Waterproofing can provide an **engineered solution** with **Clear Proof of a Perfect Seal**.

REDEFINED CONNECTIONS

Proglaze® ETA Engineered Transition Assemblies from Tremco are innovative, turnkey, **engineered** solutions for critical connections that provide visible assurance of a secure, continuous seal without voids. Consisting of pre-engineered, finished aluminum and silicone materials which are assembled and attached to the window or wall assembly, these assemblies provide a more secure and flexible option for sealing connections, basically redefining air and moisture management at critical transitions. This solution allows greater movement and deflection beyond what sealants or self-adhered membranes can provide, particularly where dissimilar materials such as curtain wall and various wall assemblies connect, while maintaining water and air tightness.

This engineered solution also addresses the problems with compatibility in the connection from the air barrier to the curtain wall. The Proglaze ETA incorporates Spectrem® 1 Silicone Sealant as the compatible adhesive and wet seal to Tremco's ExoAir Barrier Systems – a turnkey solution developed and tested for compatibility and long-term air and moisture protection. When used as a single-source, comprehensive system, the connection other manufacturers won't warrant can finally be warranted from Tremco.

Proglaze ETA Connections can be used at junctions between other assemblies within the building envelope where spanning of voids is commonplace, such as roof to wall, floor deflection joints, expansion and control joints or any other location where a degree of movement is anticipated.

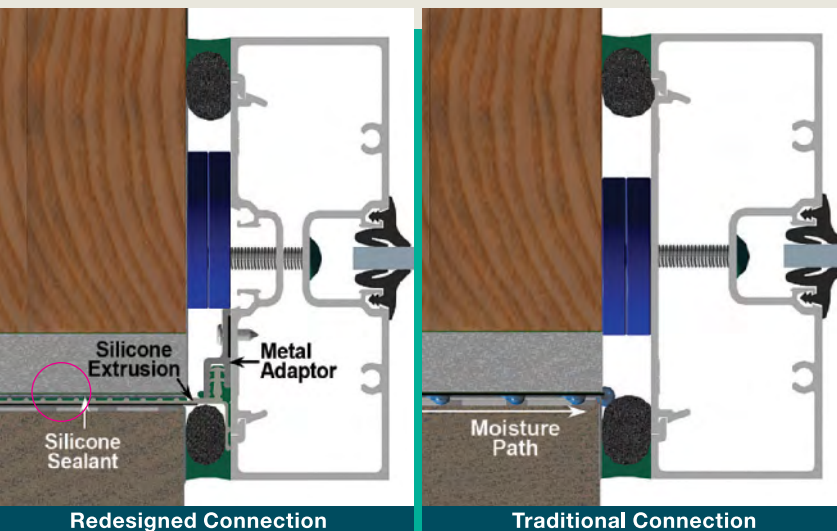


REDESIGNED CONNECTIONS

When designing a structure, drawings may show generic window and/or wall systems as specific manufacturers have not as yet been selected. They may show a simple sealant bead and/or a single serpentine line making a critical connection without regard to how this connection is to span over and around shims, anchors and turn 90° corners to connect to the floating window or the wall assembly. This limits the ability to provide an **effective** connection between the various wall components.

The construction and sequencing of these connections is also critical to the control of air and moisture infiltration. These may be determined by the construction manager or one of the trades responsible for the air and moisture barrier. Proper sequence of installation, inspection and, in many cases, testing is essential before completion of the remaining façade in order to ensure performance. Construction issues, which frequently arise, are left to the trades and untested materials may be used to meet construction schedules. It is at these terminations and transitions that 90% of all water intrusion problems will occur.

Designing and specifying these connections with an engineered, tested solution allows contractors bidding projects to know up front what their material costs would be and how the system would be installed as well as how it will perform. Construction tolerances, applicator inconsistencies as well as movement and deflection, particularly with varying geometries, create the potential for air and moisture infiltration, allowing condensation to collect in the walls and disastrous results. Properly designed connections can accommodate construction and component tolerances while allowing movement of the wall components for a “stressless” connection.



TESTED CONNECTIONS

The cost of failure is too high today to allow “trial and error” on the job. It has been estimated that at least 70% of construction litigation is related to façade leakage. Most of the problems are caused either by air leakage or exterior moisture penetration and occur within the one percent of the building exterior containing the terminations and transition detailing.

The most effective products available today won't prevent these problems unless **long-term connectivity** is assured to adjoining, abutting or overlapped products or systems. Beyond concerns over gaps and incompatibilities which may occur during construction, driving rain, dynamic wind loads, thermal movement and seismic conditions can direct a tremendous toll, leading to air and moisture infiltration and a host of disastrous consequences.

Tremco has set a new industry standard with the inclusion of Proglaze ETA with its air barrier assembly ASTM E2357 (Standard Test Method for Determining Air Leakage of Air Barrier Assemblies) testing to include measurement of the air leakage that results when the air barrier wall assembly is combined with a window and/or curtain wall system as compared to air leakage through a solid wall with the air barrier assembly. Continuing its commitment to ensuring on-site performance, independent testing has been taken to the next level and has been conducted for air infiltration, water-resistance and structural performance under seismic and dynamic wind load conditions which may exist under “real world” conditions.



Drift or seismic joint testing in project mockup with Tremco's Proglaze ETA and ExoAir 230 Fluid-Applied, Vapor-Permeable Air Barrier Membrane.



Tested to withstand **air leakage** throughout the building envelope

Determining air leakage in buildings begins with ASTM E283 testing under different pressure conditions. Small gaps in the wall assembly, however, will cause more damage than if there were no air barrier at all so testing such as this is only the beginning of a rigorous testing protocol at Tremco to ensure continuity throughout the building envelope.



Tested to withstand **structural wind loads**, maintain an air seal and withstand physical damage

Thermal movement and dynamic wind loads can be destructive, allowing air and water into a building. ASTM E2357 doesn't test for damage resulting from movement so Tremco takes it to the next level. Independent testing to AAMA 504.1 with this window-wall interface absorbed wind loads of 235 mph without damage.



Tested to withstand **seismic damage**

Not even three cycles of lateral racking movement of two inches followed by structural wind loads of ± 150 psf (air speed up to 235 mph) and driving rain conditions up to 115 mph could destroy the integrity of the seal at the window-wall connection.



Tested to withstand **wind-driven rain** with no leaks after ASTM E331 2-hour Water Exposure test @300 Pa (6.24 psf) pressure

Testing of a stucco full wall assembly at Tremco's Sustainable Building Solutions Test Facility with Proglaze ETA System 1 and System 2 Molded Corners at the transition from the ExoAir 230 Fluid-Applied Vapor-Permeable Air Barrier to the window assembly. Proglaze ETA Connections and Molded Corners are also used around the drift joint with Spectrem[®]1 Silicone Sealant, simplifying the detailing and providing clear proof of a flexible, secure bond.

“Pushing the envelope” has taken on new meaning with the introduction of Tremco's new **Sustainable Building Solutions Test Facility**. Developed in collaboration with the Air Barrier Association of America (ABAA) and working in conjunction with building scientists at Oak Ridge National Laboratory (ORNL), this cutting edge, fully automated laboratory will be conducting ongoing testing of air barrier assemblies and connection points to assure control of air and moisture infiltration/exfiltration at:

- Window-to-wall interfaces
- Penetrations
- Foundation-to-wall tie-ins
- Roof-to-wall tie-ins
- Corners

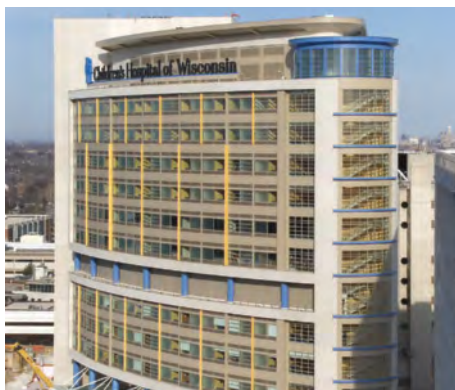
Pioneering Product/System Innovation
+ Design Integration & Collaboration
= DOCUMENTED SYSTEM PERFORMANCE

PROVEN PERFORMANCE

The **proof** of performance is success on the job. Success on some of today's most demanding projects...in some of today's most demanding environments. Hospitals. State-of-the-art research laboratories. Universities. Military facilities. Airport terminals. Libraries.

Integrated design is critical to the success of the high-performance building. Large, complex projects require consolidated scope and responsibility from manufacturers to provide a more coordinated approach and ensure higher quality outcomes. When Proglaze ETA is used in conjunction with Tremco's ExoAir Air Barrier Systems, the long-term continuity of the building envelope can be assured and backed by the industry's only performance warranty against air and moisture infiltration at the window-wall interface.

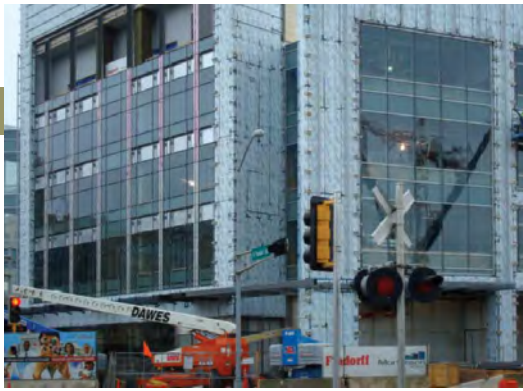
Recognizing the elements critical to the success of these projects, Tremco's Building Envelope Solutions Team (BEST) gets involved with the local Tremco field sales representative at the outset of projects working with the design and construction team to respond to design challenges. This team of building science specialists collaborate with window fabricators; the architectural/specification team; the construction management team; the curtain wall, air barrier, waterproofing contractors; wall manufacturers; fabricators, building envelope commissioning firms and others involved with the project across the country to set new standards for the sustainable building. And...redefine **High-Performance**.



Proglaze ETA is gaining widespread acceptance in hospitals where the fragile immune systems of patients demand controlled environments and there is no room for error. At **Children's Hospital of Wisconsin** in Milwaukee, hospital executives also predicted energy savings of up to 20%.



At **Rush University Medical Center** in Chicago, the building's unique stacking joint design created a challenge. Traditional transitions couldn't pass standard chamber tests. Proglaze ETA provided the flexibility and durability to withstand the expected movement and was able to span the irregular and unsupported floor deflection joints.



Wisconsin Institutes for Discovery at the University of Wisconsin-Madison houses two biomedical research institutes where a controlled, airtight environment is essential. This high-performance environment demanded a tested system with documented performance for the connection from the air barrier to the curtain wall. When completed, the air leakage rate of the building envelope was 20% less than the most stringent standard in the industry – the U.S. Army Corps of Engineers standard of 0.25 cfm/sq. ft. at a pressure differential of 0.3 in. wag (75 Pa).



Sacramento International Airport's new Airside Terminal B at 675,000 square feet is designed to accommodate an estimated 10 million passengers annually. Research was underway at the time the project was getting started for leading edge technology for use with curtain wall systems that would provide the flexibility and durability to meet seismic standards, would control air and moisture infiltration, would facilitate installation and provide cost efficiencies while matching the color of the facade to enhance the aesthetic appeal where exposed through open joints in the metal panel facade. Proglaze ETA along with other custom glazing solutions from Tremco filled the bill and has now become the basis of design for all curtain walls done by the glazier.

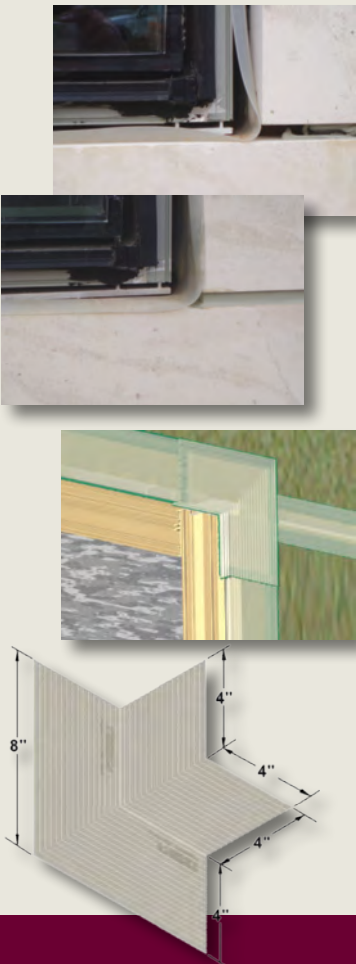
AND A *MYRIAD* OF OTHER CONNECTIONS OPTIONS

A **myriad of options** are available within the Proglaze ETA Connections line to address a variety of construction challenges — from complex detailing on drift joints at the head of windows to floor deflection joints and difficult corner conditions. A wide range of 40 durometer translucent ribbed Silicone Rubber Extrusions are available ribbed on one side or both. The single-rib extrusions are ideal for drift joint applications, expansion joints and other dynamic joints. Where the wall has been set prior to window installation preventing the use of a Proglaze ETA System, the double-ribbed Silicone Rubber Extrusion can be attached at the sill and corners using Spectrem 1 Silicone Sealant and folded into the glazing pocket, mechanically fastening under the pressure plate for a secure, durable connection.

Proglaze ETA 3-D Molded Corners have been engineered for use where the flat extrusions or molded corners would not address difficult corner conditions where the window may sit proud or recessed from the plane of the weather barrier surface. They may also be used to address transitions at the head of punched window openings for seismic drift joints.

No project is exactly the same and construction challenges such as these continually arise. Working with Tremco's Design Engineers, Proglaze ETA Assemblies and Connections can be **modified to accommodate** even the most demanding conditions faced in our industry today. Just consult with your Tremco Field Sales Representative to get the process started.

Contact your local Tremco sales representative **to set new standards for performance on your next project.**



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