BUILDING SCIENCE LABORATORY

WATER | THERMAL | AIR

THE BUILDING SCIENCE LAB ADVANTAGE

Most building envelope problems are moisture-related, caused either by air leakage or exterior moisture penetration. Project specifications must be compliant with current standards, but also need to analyze building envelope or air barrier assembly configurations, along with the performance of building materials to ensure optimal performance and long-term sustainability.

FACILITY TIMELINE

2010 | Tremco starts independent systems testing in Ashland, Ohio using a wooden test wall and a single directional blower.

2012 | With help from the building science community, Tremco builds a state-of-the-art test wall in Cleveland, Ohio. Capabilities include space to test a 10' x 12' assembly, a multi-directional blower, and Labview controller-based software.

2015 | Due to increasing testing demand, the facility expands into an adjacent 3,600 ft² room with new capabilities including a 20' x 16' multi-directional, multi-blower test wall and a water recycling system.

2020 | Testing expands again to include a new Thermal Environmental Chamber with 240 data acquisition channels, more BTUs than the harshest thermal radiation on earth, pressure differentials up to 25 PSF, temperature and humidity controls, and rain simulation of 200 g/hr.

LET'S PUSH THE BUILDING ENVELOPE TOGETHER

The Building Science Laboratory offers a unique educational opportunity. In addition to mitigating risk for clients by testing systems for performance and compatibility, our facility has helped third party labs and consultants understand the limitations of various systems and learn proper application techniques to ensure optimal performance in adverse conditions.

TYPES OF TESTING AVAILABLE AT OUR FACILITY

- **Research & Development** – Evaluation of products and systems to help establish industry standards and best practices.
- **Project-Specific** – Validate feasibility of project- specific design and establish ideal sequence of installation and QA/QC protocol for the job site.
- **Full Wall Assembly** – Wall components from façade to interior sheathing tested together as a complete system for air and water resistance.
- **Critical Details** – Evaluation of critical connection points between air/vapor building protection systems where failure is common: Facade anchors, Roof-to-wall tie-ins, foundation-to-wall tie-ins, corners, window-to-wall interfaces, penetrations and dynamic joint testing.

TREMCO
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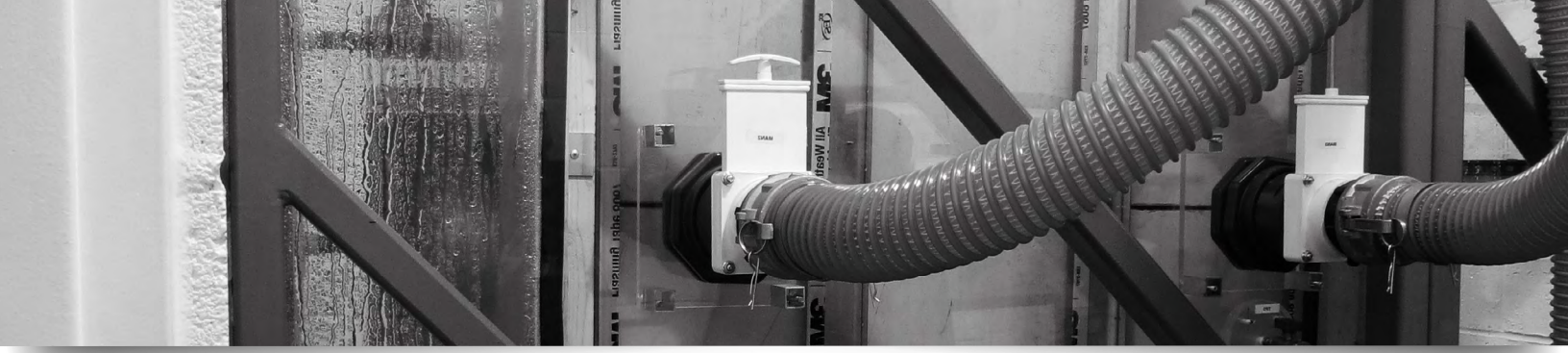

Have an application or design challenge you want to see tested for performance?

Just reach out to us to begin the testing process detailed below. We'll take it from there!

1

PROBLEM IN THE FIELD
- Research & Development
- Project Specific Testing
- Full Wall Assembly
- Critical Details

2

SUBMIT TEST FORM
- Partner with Tremco Representative
- Provide Details
- Propose Testing

3

DESIGN CONSULTATION
- Review Submitted Drawings
- Determine Testing Protocol[1]
- Develop Timeline

4

LOGISTICAL PLANNING
- Schedule Test/Visit
- Procure Materials
- Construct Assemblies

5

WELCOME TO TREMCO
- Execute Testing Protocol
- Consult/Review Outcomes
- Tremco Facility Tours

6

DEVELOP/COMMUNICATE FINDINGS
- Report Generated
- Sequential Detail Rendering
- Video Documentation

Standards for Testing

The Building Science Laboratory is an accredited 3rd party test facility with additional lab testing available:

ASTM E72*	Strength Tests of Panels for Building Construction (*Modified)
ASTM E283	Air Infiltration
ASTM E330	Uniform Load Deflection/Uniform Load Structural
ASTM E331	Uniform Static Pressure - Resistance to Driving Rain
ASTM E547	Cyclic Static Pressure - Resistance to Driving Rain
ASTM E2357	Air Leakage of Air Barrier Assemblies
AAMA 101 (NAFS)	All Testing Specified for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors
IBC 1403.2	Weather Protection

New in 2020:

ASTM C 1363	Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus.
CAN S 716	Standard for Exterior Insulation and Finish Systems (EIFS) – Materials and Systems
CAN S 742	Standard for Air Barrier Assemblies - Specification
AAMA 501.5-07	Test Method for Thermal Cycling of Exterior Walls
ASTM E1423	Standard Practice for Determining Steady State Thermal Transmittance of Fenestration Systems
ASTM E1424	Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure and Temperature Differences Across the Specimen

[1]Third party certification available upon request

Facility Information

Tremco CPG Building Science Laboratory
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For more info, or to schedule a visit, please contact your local Tremco sales rep or email Alissa Sitkowski at asitkowski@tremcoinc.com.

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