UL is a single source solution provider for all Performance Testing needs for the building envelope – helping to ensure performance of products, systems, and building structures.
UNMATCHED TECHNICAL EXPERTISE

UL’s building envelope performance testing services, with experienced and knowledgeable staff, understand the science behind the building envelope. Partners in the building materials and construction community – architects, manufacturers, contractors, consultants, building owners and regulatory authorities - trust UL for the knowledge and expertise they provide to help ensure performance of building envelope products, systems and structures, meet regulatory demands, and protect brand value.

UL provides performance testing of the building envelope to determine the rate of air infiltration, water penetration, structural, impact and cyclic performance. Testing can be conducted in the field, on curtain wall mock-ups and in its fully accredited test laboratories. UL’s data and knowledge enable architects, designers, contractors, and building consultants to evaluate the performance and suitability of building materials and systems for their design and construction needs and provide manufacturers with assurance that fenestration products meet the varied state and market requirements and have been designed to protect the exterior envelope of structures.

PRODUCT CATEGORIES:
• Windows
• Curtain walls
• Exterior wall systems
• Store fronts
• Glazing materials and systems
• Garage doors
• Louvers
• Shutters
• Skylights
• Storefronts
• Tubular daylights
• SIP Panels
• EIFS

SERVICE OFFERINGS:
• Laboratory Testing
• Field Testing
• Curtain Wall Mock-up Testing
• Air, Water and Structural Performance testing
• Impact and Cyclic Testing
• Windstorm Testing, Validation and Certification
UL’s curtain wall mock-up testing helps architects, contractors, and consultants validate the design, workmanship, materials selection, and performance of exterior wall system designs.

Exterior wall systems, including windows, curtain walls, doors, storefronts, and glazing materials, require considerable time and cost to design, fabricate, construct, and test. Testing mock-ups prior to construction can save considerable time and money by studying the construction and installation details and allowing time for changes and/or remediation prior to construction.

UL’s mock-up testing is applicable to all ASTM and AAMA standards for the evaluation of:

- Air infiltration
- Water penetration (static and dynamic)
- Structural performance
- Thermal cycling
- Inter-story movements
- Forced entry
- Impact and cycling
- Anchor bolts and washer bolts

**APPLICABLE STANDARDS**

- AAMA 501.1
- ASTM E283
- ASTM E331
- ASTM E330
- AAMA 501.4
- AAMA 501.5
- AAMA 501.6
- ASTM E 1886
- ASTM E1996
- TAS 201/202/203

*Dynamic wind driven rain testing*
BENEFITS OF USING UL

• Located conveniently in Northbrook, IL, 25 miles north of Chicago and 14 miles north of O’Hare airport, our indoor curtain wall mock-up test facility accommodates up to 200 linear feet of curtain wall specimens to 30’ in height, while our outdoor curtain wall test facility will build to suit your largest mock-up needs.

• Our building envelope experts have the experience to conduct tests across a wide range of conditions and mock-ups. Prior to testing, we can assist in coordinating the dialogue required between the specifier, builder and contractors to help ensure that pre-construction mock-up testing is conducted appropriately.

• Our building envelope experts provide installation oversight and documentation of initial installation and remedial changes of the mock-ups throughout the process. Documentation of design and installation details are critical to the contractor during the actual construction to help ensure successful implementation of the curtain wall designs.
Building owners, contractors, consultants, and architects require testing of installed windows, curtain walls, and storefronts to evaluate the performance of the installed products to architect and industry specifications.

UL provides on-site air barrier testing and on-site field testing of windows, curtain walls, and storefronts for air infiltration resistance, water penetration resistance, and structural and acoustical performance. Field testing can be conducted to evaluate the following:

- Air infiltration
- Air barriers
- Water penetration (static and dynamic)
- Structural performance
- Acoustical performance

### APPLICABLE STANDARDS

- AAMA 501.1
- AAMA 501.2
- AAMA 502
- AAMA 503
- ASTM E330
- ASTM E783
- ASTM E1105
- AAMA 511
- ASTM E2128
WHY CHOOSE UL FIELD TESTING SERVICES?

With more than 30 years of experience, UL’s field testing experts provide a professional service that is fast and accurate and gives building owners, contractors, consultants, and architects information they need to assess compliance, risk mitigation, and remediation solutions.

• For new construction or new fenestration installations, UL’s field testing helps ensure products perform properly after they have been installed in a building. Field testing provides quality assurance and helps building owners, contractors, consultants, and architects assure they are meeting contractual obligations.
• For existing construction with problematic conditions, UL’s field testing can provide forensic evidence to identify the source of the problems and provide the necessary information to help mitigate and remediate the issues. UL’s field testing experts will travel to any location across the U.S. and Canada, and they can usually be dispatched within 24 hours.
• Fully equipped and ready for any type of testing on location to help ensure the delivery of quick results. Data is then compiled on laptop computers for fast report turnaround.
• UL experts provide consultation to help customers understand the results of the tests, allowing the building owner to achieve successful remediation solutions if necessary.
Windows and doors must be designed to remain structurally sound and to resist varied and severe weather conditions, such as rain, snow, extreme hot and cold temperatures, rays from the sun, and high velocity winds from hurricanes and tornados. UL’s AAMA and ISO 17025 accredited test laboratory provides performance testing to determine the rate of air leakage, water penetration, and structural performance of windows, doors, garage doors, louvers, and many other products. The test data enables architects, designers, contractors, and building consultants to evaluate the performance and suitability of building materials and systems for their design and construction needs, and it also helps manufacturers ensure that their products will meet building design, building code, and product certification requirements, such as AAMA, WDMA, Keystone, and NAMI certifications.
IMPACT AND CYCLING (HURRICANE AND TORNADO) TESTING

The risk of damage and threat to life caused by hurricane and tornado pressure and winds have prompted several states to adopt regulations requiring that the design of fenestration products provide protection and withstand damage caused by high winds, pressure, and windborne debris.

UL's impact and cycling testing services help manufacturers determine the ability of their products to resist hurricane and tornado-like high wind, pressure, and debris exposures and help provide assurance that their products meet building design, building code, and certification requirements. Test results allow architects, designers, consultants, code authorities, building owners, and consumers to compare windows and doors in order to identify specific products that will meet their needs from a design and protection standpoint.

Impact and cyclic testing is performed to assess the ability of a product to resist wind and water intrusion that could compromise the building envelope, potentially creating further damage to the interior of a building or catastrophic failure. Immediately following impact exposure, the fenestration product is subjected to cyclical high air pressure to test product performance under varying pressure differentials. Products may also be subjected to water spray to simulate wind driven rain at speeds up to 110 mph.

WINDSTORM SERVICES

In order to protect from hurricane and tornado-force winds, the building envelope must be designed to meet rigorous building code requirements. UL's windstorm testing, certification, and validation solutions provide a comprehensive path for manufacturers to demonstrate product compliance with code requirements that are in place to protect from high-velocity winds and windborne debris resulting from hurricanes and tornados.

State and local building codes, such as Florida, Texas, and Miami-Dade County, require that building envelope construction products, including exterior doors, windows, louvers, shutters, panel walls, and roofing products, provide protection from high-velocity winds and windborne debris. To demonstrate compliance to these regulations, products must be: tested to specific test standards, often must be manufactured under a quality assurance program, and may need to be validated by a 3rd party as compliant prior to gaining approval by local jurisdictions.

APPLICABLE STANDARDS

- ASTM E1886
- ASTM E1996
- ASTM E283
- ASTM E331
- ASTM E330
- TAS 201
- TAS 202
- TAS 203
- ICC 500
- FEMA 320
- FEMA 361
- AMCA 540
- DASMA 115
HOW CAN UL HELP?

UL’s testing, certification, and validation services provide all the necessary steps to demonstrate compliance:

TESTING
UL conducts testing to all of the rigorous test standards, including small and large missile impacts. Missile impact testing is conducted with a compressed air cannon at speeds from 34 mph up to 100 mph to simulate hurricane and tornado-force debris impacts against various building products.

CERTIFICATION
UL Certified windstorm-rated building assemblies help provide assurance of ongoing compliance and identify the test standards and performance ratings to which the assemblies were evaluated. Additionally, UL’s factory inspection program evaluates the continued compliance of windstorm-rated products.

QUALITY ASSURANCE ASSESSMENTS
UL’s quality assurance assessment program evaluates a manufacturer’s quality assurance and quality control programs, as often required by local codes and regulations.

VALIDATION
UL is a recognized validator in the state of Florida. When UL is used for testing and Certification, it can provide confirmation that the documents and information submitted to the state for approval meet the requirements of the state approval process.
KEY BENEFITS OF UL PERFORMANCE TESTING SERVICES

UL is an AAMA, ISO 17025 and Miami-Dade accredited provider, offering testing services in the lab, in the field and on curtain wall mock-ups to help provide assurance that fenestration products meet the varied state and market requirements and have been designed to protect the exterior envelope of structures.

- UL’s staff have decades of experience testing windows, doors and curtainwalls to the key AAMA, Miami - Dade and ASTM industry standards
- UL’s AAMA accredited laboratory is equipped with state of the art test equipment to provide timely and accurate testing services
- UL building envelope testing labs can accommodate large product samples, enabling large mock-ups and the ability to test several products at once.
- Data is analyzed and reported throughout the entire testing process for precise analysis and quick report turnaround.

- UL’s experts provide consultation about test results to ensure customer understanding and to allow for immediate remediation actions if necessary.
- Where applicable, UL Certified windstorm-rated assemblies provide designers and code authorities with the confidence they need to determine that products have been tested and meet appropriate windstorm test requirements.
- UL’s team is here to understand your testing needs and gear our services to meet those needs
RESOURCES

Online Certifications Directory
www.ul.com/database
UL’s Online Directory is used and viewed by manufacturers, authorities, architects, designers, contractors and building owners globally for verification of a UL Certified product helping manufacturers extend their marketing reach.

UL ProductSpec
www.ul.com/productspec
Fast and easy way to access UL’s Certified products. Click on “Product Type” and type in “windstorm” to identify all UL windstorm rated products and assemblies.

CONTACT US

Contact us today to learn how UL can help ensure quality and performance, verify code compliance, and help meet your building envelope needs.

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