

UL's building science global capabilities



Architects, regulatory authorities, manufacturers, insurers, building owners, and other partners in the building science community rely on UL for the services and knowledge that they need to enhance public safety, meet regulatory demands, protect brand value and successfully access the global market. Our expansive set of services span globally to meet your needs in an ever changing compliance landscape.

Building Materials and Security

Standard (s)	Title
Roofing Products: Testing of roofing products used in the construction of residential and commercial buildings. Scope of testing includes testing of roofing products for fire resistance, wind damage, hail damage as well as complete roof assemblies for wind uplift.	
UL 580	Tests for Uplift Resistance of Roof Assemblies
UL 790	Standard Test Methods for Fire Tests of Roof Coverings
UL 1256	Fire Test of Roof Deck Constructions
UL 1897	Uplift Tests for Roof Covering Systems
UL 2218	Impact Resistance of Prepared Roof Covering Materials
UL 2218A	Outline for Impact Resistance of Roofing Systems
CAN/ULC-S107	Standard Methods of Fire Tests of Roof Coverings
ASTM D3161	Standard Test Method for Wind Resistance of Steep Slope Roofing Products (Fan-Induced Method)
ASTM D6381	Standard Test method for Measurement of Asphalt Shingle Mechanical Uplift Resistance
ASTM D7158	Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method)
CSA A123.21	Standard Test method for the Dynamic Wind Uplift Resistance of Membrane-roofing systems
Standard (s)	Title
Reaction to Fire: Assesses the contribution of various materials to the combustibility of buildings such as insulation, interior finishes and building materials.	
ASTM D2863	Standard Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
ASTM D648	Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
ASTM E1321	Standard Test Method for Determining Material Ignition and Flame Spread Properties
ASTM E1354	Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter
ASTM E136	Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C
ASTM E662	Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
BSS 7239	Toxicity Testing
CAN/ULC-S102	Standard method of Test for Surface Burning Characteristics of Building Materials and Assemblies
EN 13501-1	Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests
EN 13823	Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item
EN ISO 1182	Reaction to fire tests for products - Non-combustibility test
EN ISO 11925-2	Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - part 2: Single-flame source test
EN ISO 1716	Reaction to fire tests for products - Determination of the gross heat of combustion (calorific value)
EN ISO 9239	Reaction to fire tests for floorings - Part 1: Determination of the burning behaviour using a radiant heat source
IMO A 653	Recommendation on Improved Fire Test Procedures for Surface Flammability of Bulkhead, Ceiling and Deck Finish Materials
ISO 1182	Reaction to fire tests for products - Non-combustibility test
ISO 4589-2	Plastics - Determination of burning behaviour by oxygen index - Part 2: Ambient-temperature test
ISO 4589-3	Plastics - Determination of burning behaviour by oxygen index - Part 3: Elevated-temperature test
ISO 5658-2	Reaction to fire tests - Spread of flame - Part 2: Lateral spread on building and transport products in vertical configuration
ISO 5659-2	Plastics - Smoke generation - Part 2: Determination of optical density by a single-chamber test
ISO 5660-1	Reaction-to-fire tests - Heat release, smoke production and mass loss rate - Part 1: Heat release rate (cone calorimeter method) and smoke production rate (dynamic measurement)
ISO 9239-1	Reaction to fire tests for floorings - Part 1: Determination of the burning behaviour using a radiant heat source
NES 713	Determination of the Toxicity Index of the Products of Combustion from Small Specimens of Materials
SMP 800	Toxic Gas Generation
UL 723	Tests for Surface Burning Characteristics of Building Materials



Empowering Trust®

Building Materials and Security

Standard (s)	Title
Fire Testing: Fire resistance testing of record protection devices, circuit integrity products and electrical circuit protective materials	
UL 72	Tests for Fire Resistance of Record Protection Equipment
UL 1724	Outline for Fire Tests for Electrical Circuit Protective Systems
UL 2196	Tests for Fire Resistive Cables

Security

Standard (s)	Title
Our testing, verification, inspection and certification solutions for security products, systems and services help bring compliant products to the market quickly. Security products can consist of electronic locks, ballistic resistant materials, access control or intrusion detection, UL has the ability to evaluate products for both physical and electronic security needs.	
ASTM F476	Standard Test Methods for Security of Swinging Door Assemblies
CAN/ULC 60839-11-1	Alarm and Electronic Security Systems - Part 11-1: Electronic Access Control Systems - System and Components Requirements
CAN/ULC-S303	Standard for Local Burglar Alarm Units and Systems
CAN/ULC-S304	Standard for Control Units, Accessories and Receiving Equipment for Intrusion Alarm Systems
CAN/ULC-S306	Intrusion Detection Units
CAN/ULC-S318	Standard for Power Supplies for Burglar Alarm Systems
CSA C22.2 No. 205	Signal equipment
EN 50131-1	Alarm systems - Intrusion and hold-up system Part 1: System requirements
EN 50131-2-2	Alarm systems - Intrusion and hold-up systems Part 2-2: Intrusion detectors - Passive infrared detectors
EN 50131-2-3	Alarm systems - Intrusion and hold-up systems Part 2-3: Requirements for microwave detectors
EN 50131-2-4	Alarm systems - Intrusion and hold-up systems - Part 2-4: Requirements for combined passive infrared and microwave detectors
EN 50131-2-6	Alarm systems - Intrusion and hold-up systems Part2-6: Opening contacts (magnetic)
EN 50131-4	Alarm systems - Intrusion and hold-up systems Part 4: Warning devices
EN 50131-5-3	Alarm systems - Intrusion systems - Part 5-3: Requirements for interconnections equipment using radio frequency techniques
EN 50131-6	Alarm systems - Intrusion and hold-up systems Part 6: Power supplies
EN 50136	Alarm system - Alarm transmission systems and equipment - Part 1-1: General requirements for alarm transmission systems
IEC 60839-11-1	Alarm and Electronic Security Systems - Part 11-1: Electronic Access Control Systems - System and Components Requirements
UL 1023	Household Burglar-Alarm System Units
UL 1034	Burglary-Resistant Electric Locking Mechanisms
UL 1037	Antitheft Alarms and Devices
UL 1076	Proprietary Burglar Alarm Units and Systems
UL 1610	Central-Station Burglar-Alarm Units
UL 293	Outline for Performance of Access Control System Units Intended for Use in the UK
UL 294	Access Control System Units
UL 365	Police Station Connected Burglar Alarm Units and Systems
UL 437	Key Locks
UL 609	Local Burglar Alarm Units and Systems
UL 634	Connectors and Switches for Use with Burglar-Alarm Systems
UL 636	Holdup Alarm Units and Systems
UL 639	Intrusion-Detection Units
UL 687	Burglary-Resistant Safes
UL 752	Bullet-Resisting Equipment
ULC/ORD-C1076	Proprietary Burglar Alarm Units and Systems

Door Hardware

Standard (s)	Title
Durability and performance testing of door hardware for either UL Certification, CE Marking or verification against BHMA Standards. Scope includes testing of locks, key cylinders and input devices, exit hardware, hinges and door closers	
ANSI/BHMA A156.1	Butts and Hinges
ANSI/BHMA A156.2	Bored & Preassembled Locks and Latches
ANSI/BHMA A156.3	Exit Devices
ANSI/BHMA A156.4	Door Controls-Closers
ANSI/BHMA A156.5	Cylinders and Input Devices for Locks
ANSI/BHMA A156.11	Cabinet Locks
ANSI/BHMA A156.12	Interconnected Locks & Latches
ANSI/BHMA A156.13	Mortise Locks
ANSI/BHMA A156.17	Self Closing Hinges & Pivots
ANSI/BHMA A156.18	Materials & Finishes
ANSI/BHMA A156.19	Power Assist & Low Energy Power Operated Doors
ANSI/BHMA A156.21	Thresholds
ANSI/BHMA A156.22	Door Gasketing and Edge Seal Systems
ANSI/BHMA A156.23	Electromagnetic Locks
ANSI/BHMA A156.24	Delayed Egress Locks
ANSI/BHMA A156.25	Electrified Locking Devices
ANSI/BHMA A156.26	Continuous Hinges
ANSI/BHMA A156.29	Exit Locks, Exit Alarms, Alarms for Exit Devices
ANSI/BHMA A156.30	High Security Cylinders Product
ANSI/BHMA A156.36	Auxiliary Locks
ANSI/BHMA A156.39	Residential Locksets and Latches
ANSI/BHMA A156.40	Residential Deadbolts
ANSI/BHMA A156.41	Door Hardware Single Motion to Egress
EAD 020001-01-0405	Multi-axis concealed hinge assemblies
EN 1125	Building hardware - Panic exit devices operated by a horizontal bar, for use on escape routes - Requirements and test methods
EN 1154	Building hardware Controlled door closing devices Requirements and test methods
EN 1155	Building hardware - Electrically powered hold-open devices for swing doors - Requirements and test methods
EN 1670	Building hardware - Corrosion resistance - Requirements and test methods
EN 179	Building hardware - Emergency exit devices operated by a lever handle or push pad, for use on escape routes - Requirements and test methods
EN 1935	Building hardware - Single-Axis Hinges - Requirements and Test Methods
ISO 9227	Corrosion tests in artificial atmospheres - Salt spray tests
UL 228	Door Closers-Holders, With or Without Integral Smoke Detectors
UL 305	Panic Hardware
ULC/CAN-S132	Standard Method of Tests for Emergency Exit and Emergency Fire Exit Hardware
ULC/CAN-S133	Standard Method of Tests for Door Closers Intended for Use with Swinging Doors

Other BHMA Standards upon request

Other Services

- Fire Stop Inspection Services
- Fire Door Inspection Services
- Qualified Firestop and Fireproofing Contractor Program
- UL and ULC Engineering Reports for ICC-ES or for Canada
- Notified Body For Security, Signaling and Building Materials
- Analytical Lab Services

UL's building envelope global capabilities

Testing for Windows, Doors and Walls, Facades, and Project or Visual Mock ups; Field Testing and Thermal Testing/Simulation Services

Standard (s)	Title
Fenestration Window/ Doors – NAFS	
AAMA/NWWDA 101/I.S.2-97	Aluminum, vinyl (PVC), wood windows and glass doors
AAMA/WDMA/CSA 101/I.S.2/A440-17	North American Fenestration Standard
AAMA/WDMA/CSA 101/I.S.2/A440S1	North American Fenestration Standard
AAMA 450	Voluntary performance rating method for mulled fenestration assemblies
AAMA 501	Standard test method for water penetration of windows, curtain walls and doors using dynamic pressure
AAMA 910	*Voluntary "life cycle" specifications and test methods for aw class architectural windows and doors
AAMA 920	Specification for operating cycle performance of active side-hinged exterior door slabs
AAMA 925	Specification for determining the vertical loading resistance of side-hinged door systems
ICC AC17	Glass glazed unit skylights and sloped glass glazing
AAMA 1600	Voluntary specification for skylights
AAMA 2502-19	*Comparative analysis procedure for window and door products
Laboratory Testing – Operational Force	
ASTM E2068	Standard test method for determination of operating force of sliding windows and doors
AAMA 1002.10, 1102, 1102.7	Voluntary specification for insulating storm products for windows and sliding glass doors
Laboratory Testing – Air	
ASTM E283	Standard test method for determining rate of air leakage through exterior windows, skylights, curtain walls, and doors under specified pressure differences across the specimen
ASTM E2178	Standard test method for air permeance of building materials
ASTM E2357-18	Standard test method for determining air leakage rate of air barrier assemblies
ASTM E1186-17	Standard practices for air leakage site detection in building envelopes and air barrier systems
ASTM E1424-91 (2016)	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
NFRC 400-2010 [E1A2]	Procedure for determining fenestration product air leakag
Laboratory Testing – Condensation Resistance	
NFRC 500	Fenestration product condensation resistance
Laboratory Testing – Deglazing	
ASTM E987 – 88(2017)	Standard test methods for deglazing force of fenestration products
Laboratory Testing – Forced Entry	
ASTM F588	Standard test methods for measuring the forced entry resistance of window assemblies, excluding glazing impact
ASTM F842-17	Standard test methods for measuring the forced entry resistance of sliding door assemblies, excluding glazing impact
AAMA 1304	Voluntary specification for determining forced entry resistance of side-hinged door systems
AAMA 1302	Standards set guidelines for construction and testing of products that can reduce product vulnerability
AAMA 1303	Voluntary specifications for forced-entry resistant aluminum sliding glass doors



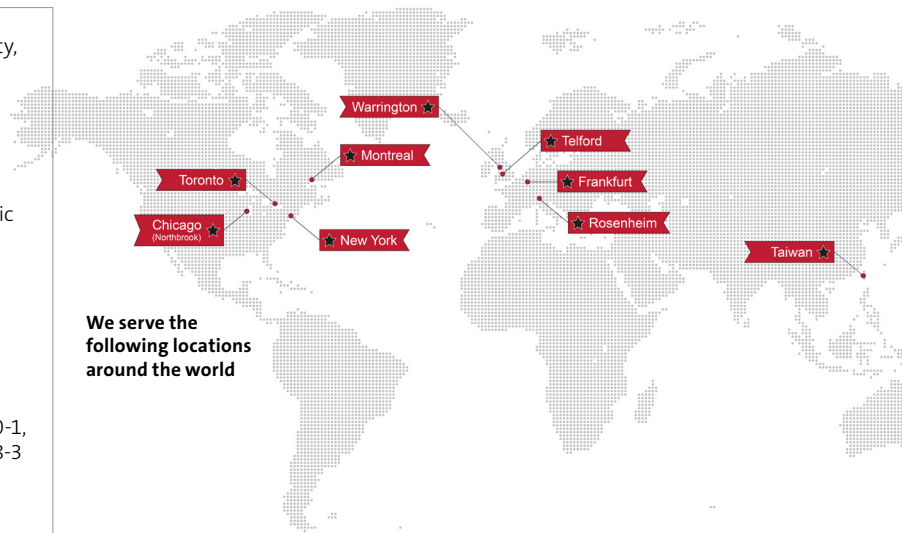
Standard (s)	Title
Laboratory Hardware Testing	
AAMA 901	Voluntary specification for rotary and linear operators in window applications
AAMA 902,	Voluntary specification for sash balances
AAMA 904	Voluntary specification for multi-bar hinges in window applications
ASTM E405	Standard test methods for wear testing rotary operators for windows
WDMA T.M.7	Test method to determine the physical endurance of wood doors and associated hardware connections under accelerated operating conditions, window and door manufacturers association
Laboratory Testing – Interstory Drift	
AAMA 501.4,	Recommended static test method for evaluating curtain wall and storefront systems subjected to seismic and wind induced interstory drifts
AAMA 501.6	Recommended dynamic test method for determining the seismic drift causing glass fallout from window wall, curtain wall and storefront system
AAMA , 501.7	Recommended static test method for evaluating windows, window wall, curtain wall and storefront systems subjected to vertical inter-story movements
Laboratory Testing – Impact and Cycling	
Storm Shelter/Tornado - ICC 500	ICC/NSSA standard for the design and construction of storm shelters
Hurricane – TAS 201	Impact test procedure
Hurricane – TAS 202	Criteria for testing impact and non-impact resistant building envelope component using uniform static air pressure
Hurricane – TAS 203	Criteria for testing product subject to cyclic wind pressure loading
Hurricane ASTM E1886	Standard test method for performance of exterior windows, curtain walls, doors, and impact protective systems impacted by missile(s) and exposed to cyclic pressure differentials
Hurricane ASTM E1996	Specification for daytime pedestrian visibility enhancement (withdrawn 2002)
AAMA 506	Voluntary specifications for impact and cycle testing of fenestration products
AMCA 540	Test method for louvers impacted by wind borne debris was revised by committee to add requirements for cycle testing per TAS 203 for louvers intended for the HVHZ
Laboratory Testing – Operational Force	
ASTM E2068	Standard test method for determination of operating force of sliding windows and doors
AAMA 1002.10, 1102, 1102.7	Voluntary specification for insulating storm products for windows and sliding glass doors
Laboratory Testing – Manufactured Housing	
AAMA 1702.2	Voluntary standard for utilization in manufactured housing for swinging exterior passage doors
AAMA 1701.2	Primary window and sliding glass door voluntary standard for utilization in manufactured housing
AAMA 1701.1	Voluntary standard for utilization in manufactured housing for primary windows and sliding glass doors
Laboratory Material Testing	
ASTM E72	Standard test methods of conducting strength tests of panels for building construction
ASTM E96	Standard test methods for water vapor transmission of materials
CAN/ULC S741	Standard for air barrier materials - specification
CAN/ULC S742	Standard for air barrier assemblies - specification
ASTM D4803	Standard test method for predicting heat buildup in pvc building products
Laboratory Testing - Water	
ASTM E331	Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by uniform static air pressure difference
ASTM E547	Standard test method for water penetration of exterior windows, skylights, doors, and curtain walls by cyclic static air pressure difference
AAMA 508	Voluntary test method and specification for pressure equalized rain screen wall cladding systems
AAMA 509	Voluntary test and classification method of drained and back ventilated rain screen wall cladding systems
AAMA 501.1:1994 and CWCT Section 7 – dynamic water penetration (On-site also)	Water penetration of windows, curtain walls and doors using dynamic pressure
AMCA 550	Test method for high velocity wind driven rain resistant louvers
Laboratory Testing – Vegetated Roof Testing	
CAN/CSA A123.24-15	Standard test method for wind resistance of modular vegetated roof assembly
Laboratory Testing – Security	
ASTM F476	Standard test methods for security of swinging door assemblies
SMA 6001	Specifications for metal protection screens
Laboratory Testing - Structural	
ASTM E330	Standard test method for structural performance of exterior windows, doors, skylights and curtain walls by uniform static air pressure difference
AAMA 1605.1	Voluntary standard uniform load test procedure for plastic glazed skylights by uniform static air pressure difference
AAMA 1606	Voluntary uniform load structural standard for plastic dome skylights
Laboratory Testing - Sunroom	
AAMA/NPEA/NSA 2100	Specification for sunrooms

Standard (s)	Title
Laboratory Testing - Thermal	
AAMA 1503	Thermal transmittance and condensation resistance of windows, doors and glazed wall sections
AAMA 1506	Voluntary test method for laboratory build-up effects on fenestration product
AAMA 501.5	Test method for thermal cycling of exterior walls
ASTM C518	Standard test method for steady-state thermal transmission properties by means of the heat flow meter apparatus
ASTM C1199	Standard test method for measuring the steady-state thermal transmittance of fenestration systems using hot box methods
ASTM C1363	Standard test method for thermal performance of building materials and envelope assemblies by means of a hot box apparatus
ASTM E1423	Standard practice for determining steady state thermal transmittance of fenestration systems
CAN/ULC S-770	Standard test method for determination of long-term thermal resistance of closed-cell thermal insulating foams
CAN/CSA A440.2	Rendement énergétique des fenêtres et autres systèmes de fenestration/guide d'utilisation de la CSA A440.2-04, évaluation du rendement énergétique des fenêtres et autres systèmes de fenestration
NFRC 100	Procedure for determining fenestration product U-factors
NFRC 101	Procedure for determining thermophysical properties of materials for use in NFRC-approved software
NFRC 102	Procedure for measuring the steady-state thermal transmittance of fenestration systems
NFRC 200	Determining fenestration product solar heat gain coefficient
Laboratory & Field - Guard Rail Testing	
ASTM E935	Standard test methods for performance of permanent metal railing systems and rails for buildings
CSA A500	CSA A500-16 - Building guards
Field Testing – Air	
ASTM E779	Standard test method for determining air leakage rate by fan pressurization
ASTM E783	Standard test method for field measurement of air leakage through installed exterior windows and doors
CAN/CGSB 149.10 [M86]	Determination of the airtightness of building envelopes by the fan depressurization method
Field Testing – Water	
AAMA 501.1:1994 & CWCT Section 7 – dynamic water penetration (On-site also)	Water penetration of windows, curtain walls and doors using dynamic pressure
AAMA 511	Voluntary guideline for forensic water penetration testing of fenestration products
ASTM E1105	Standard test method for field determination of water penetration of installed exterior windows, skylights, doors, and curtain walls, by uniform or cyclic static air pressure difference
Field Testing – Thermographic/Thermal	
ASTM C1371	Standard test method for determination of emittance of materials near room temperature using portable emissometers
ASTM C1060	Standard practice for thermographic inspection of insulation installations in envelope cavities of frame buildings
Insulated Glass Testing – Dew Point	
ASTM C1060	Standard practice for thermographic inspection of insulation installations in envelope cavities of frame buildings
ASTM C1371	Standard test method for determination of emittance of materials near room temperature using portable emissometers
Door and Frame Physical Endurance Testing	
ANSI/SDI A250.4-201	Test procedure and acceptance criteria for - physical endurance for steel doors, frames and frame anchors
Garage and Access Door Testing	
ANSI/DASMA 105	Test method for thermal transmittance and air infiltration of garage doors
ANSI/DASMA 108	Standard method for testing sectional garage doors and rolling doors: determination of structural performance under uniform static air pressure difference
ANSI/DASMA 115	Standard method for testing sectional garage doors: determination of structural performance under missile impact and cyclic wind pressure
UK and European Building Science Testing	
BS 6375-1	Performance of windows and doors Part 1: Classification for weathertightness and guidance on selection and specification
BS 6375-2	Performance of windows and doors – Part 2: Classification for operation and strength characteristics and guidance on selection and specification
EN 1026:2016	Windows and doors - Air permeability
EN 1027:2000	Windows and doors - Watertightness
EN 12211:2000	Windows and doors - Resistance to wind load
Windows	
EN 12046-1:2003, EN 14608:2004	Windows - Resistance to racking
EN 14609:2004	Windows - Determination of the resistance to static torsion
EN 12046-1:2003, EN 14608:2004	Windows - Resistance to racking
EN 13049:2003	Windows - Soft and heavy body impact
EN 1191:2012 Annex B/F	Windows and doors - Resistance to repeated opening and closing

Standard (s)	Title
Doors	
EN 12 046-2:2000, EN 12217:2012	Doors - Operating forces
EN 947:1999	Hinged or pivoted doors - Determination of the resistance to vertical load
EN 948:1999	Hinged or pivoted doors - Determination of the resistance to static torsion
EN 949:1999	Windows or curtain walling, doors, blinds and shutters - Determination of resistance to soft and heavy body impact
EN 950:1999	Door leaves - resistance to hard body impact
EN 1192:2000	Classification of strength requirements
EN 1191 Annex D/H	Resistance to repeated opening and closing
BS6375-3:2009, A1-2013	Performance of windows and doors - Classification for additional performance characteristics
PAS 24:2016	Enhanced security performance requirements for doorsets and windows in the UK
EN 13051:2001	Watertightness site test
CWCT Section 10	Curtain walling spraybar testing on opening joints
EN 12153:2001	Curtain walling air permeability test
CWCT Section 5	Air permeability
EN 12155:2000	Curtain walling watertightness test under static pressure
CWCT Section 6	Curtain walling watertightness under static load
EN 12179:2000	Curtain walling resistance to wind load
CWCT Section 11/12	Resistance to wind loading
EN 13050:2011	Dynamic water penetration
EN 13830:2003	Curtain wall testing
EN 14019:2016	Curtain walling impact resistance
CWCT Section 15	Impact resistance
CWCT Section 17	Structural movement
CWCT Section 9 / AAMA 501.2/ AAMA 501.2-15	Field hose testing
CWCT Section 10	Field spray bar testing
CWCT Technical Note No. 76	Impact performance of building envelopes: method for impact testing of cladding panels
CWCT Technical Note No. 67	Safety and fragility test of glazed roofing

Other Services

- Thermal Testing and Simulation (NFRC, ASTM, CSA & ULC)
- NHBC 7 Premier Guarantee façade and rainscreen certification
- ANSI Z97.1/CAN2-12.1M for glazing
- Fire Stop Inspection Services
- Fire Door Inspection Services
- Qualified Firestop and Fireproofing Contractor Program
- UL or ULC Engineering Reports
- Notified Body For Security, Signaling and Building Materials
- Analytical Lab Services
- Façade Commissioning and Consultation Forensic Services
- Wood and Steel Door Cycling
- Secured by Design Certification for UK
- BS EN12600, BS EN12150-1, BS EN14179-1, BSEN1288-3 Glass Testing



To learn more, visit UL.com or contact BuildingLifeSafety@ul.com



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