Building materials

Testing, certification and training

UL Solutions

Safety. Science. Transformation.™

UL Solutions is a global, independent safety science company with more than a century of expertise in standards development, testing and certification. Our groundbreaking innovations in safety, sustainability, renewable energy and nanotechnology illustrate our continued dedication to promoting safe products and people-friendly living and working environments.

Test locally, think globally

UL Solutions is able to offer testing and certification to customers in the global marketplace using staff and resources located across Asia, Europe, the Middle East and North America. Regional testing laboratories and local staff allow customers to work with experienced UL Solutions staff to complete projects, meet time to market deadlines and minimize communication difficulties.

The Building Materials Team actively participates in standards development activities regarding UL Solutions, ASTM, ISO and European Test Methods for fire resistance, fire containment, reaction to fire and roofing products. This participation allows UL Solutions' technical staff to provide services and insights to help our customers succeed in various markets around the world.

Promoting product safety

UL Solutions' association with fire safety, integrity, quality and research is globally recognized. Building products that carry the UL Mark gain a decisive competitive edge through the instant recognition the Mark provides.

Established in the United States in 1894, UL Solutions operates globally, offering a comprehensive range of services that help manufacturers gain the compliance and performance credentials they need to compete in the global marketplace.

UL Solutions provides customized services, which range from fire and performance testing and certification for manufacturers to qualified contractor programs and passive fire protection inspections to training for regulatory authorities, building owners, insurance companies and the fire safety community.

Partnering with UL Solutions

Our services support the building material industry's need for reliable, accurate test results and certifications. The testing process is streamlined to control costs and accelerate time-to-market for our customers without compromising integrity or scientific excellence. In today's fast-moving business environment, UL Solutions' building materials team adapts to stay at the forefront of fire safety advancements.

We offer flexible options for testing outside of UL Solutions facilities, including witness testing at third-party laboratories or at the manufacturer's facilities. Additionally, to simplify the design and testing process for manufacturers, UL Solutions offers customized testing services and a sensible system to facilitate product choices and replacements that correlate to the applicable standards.

Testing and certification of building materials

UL Solutions evaluates a wide range of products for fire resistance and performance including doors, door hardware, roofing products, insulation materials, and more. Fire testing can be conducted with full test capabilities at global UL Solutions or partner laboratory locations.

Product groups

Steel Protection
UL Solutions has been testing structural steel columns, beams and horizontal fire resistance assemblies with steel elements since the early 1920s. UL Solutions can evaluate modern steel protection methods and materials for use in building construction, hydrocarbon fire exposures, and to determine the impact of manufacturer proposed material changes.

A streamlined path to compliance and global market access with service bundles that include all necessary tests and certifications is also available. UL Solutions is an accredited Technical Approval Body (TAB) and a Notified Body to European Construction Products Regulation (CPR) enabling us to assess fire-resistance products to applicable standards and issue European Assessment Documents and CE Certificates where the appropriate technical specifications exist. We can conduct a combined fire resistance test program that includes critical requirements of UL Solutions, EN and British (BS) test standards for wider global market acceptance.

Gypsum Board and Acoustical Tiles
UL Solutions has been directly involved with the development of fire resistance ratings for gypsum wallboard and ceiling products since their introduction to the market. Over a century of product testing made the UL Product IQ an invaluable resource for the architectural community.

Global testing facilities with various furnaces of differing sizes are available to test products, including gypsum wallboard, studs and joists, partition panels and ceiling systems. Additionally, UL Solutions furthers product development by conducting engineering studies on changes to previously evaluated constructions to assess continued fire-resistive performance to keep in line with the constantly changing needs of the construction industry.

Roofing Products
UL Solutions is backed by more than 100 years of expertise in evaluating roofing materials and systems for weather, fire, wind and environmental requirements. UL Solutions engineers work within the industry to develop standards that improve the performance of roofing materials and systems for fire safety and / or property protection. From fire-resistance testing to emerging environmental requirements, UL Solutions is a trusted source for all testing and certification. The UL Certification Mark on a roofing product thus represents not only a product certification but that the product undergoes thorough ongoing follow-up service and can meet regulatory requirements for third party listed and labeled product. Certification and verify or validated are not equal in terminology or quality.

Dampers
UL Solutions helped write many of the industry test standards referenced in building codes. The UL Building Materials team tests the performance of dampers for various safety aspects, including fire resistance, smoke leakage performance, corrosion and cycling.

Doors, Glazing and Hardware
UL Solutions offers testing and assessment services for fire doors and fire door hardware to various UL (UL 9, UL 10B, UL10C), British (current and previous editions of BS 476 Parts 22 and 23), Canadian (ULC/ CAN-S104, ULC/CAN-S105 and ULC/CAN-S106) and European standards (e.g., EN 1364-1, EN 1634-1 and EN 1634-3) as well as the IMO Fire Test Protocol. In addition to fire, UL Solutions can also provide testing services for door hardware against various UL, BHMA, EN and EAD standards through a global network of laboratories.

Product groups (continued)

Firestops, Joints and Perimeter Containment
UL Solutions' single-source testing and rating to North American and European standards helps to ensure that firestop and joint systems comply with current industry standards and provide a high level of protection for people and property. Firestop and joint systems can also be evaluated based on specific characteristics of each material or system for possible fire, temperature rise, air and smoke leakage, and water leakage ratings. Finally, UL Solutions offers testing and certification services for perimeter fire containment systems used where the floor of a structure meets the outside wall of a building.

Exterior Wall Systems
Exterior wall systems are designed to be aesthetically pleasing while using innovative materials that are cost and energy efficient, air and water resistant and provide a level of fire protection. These materials often include air barriers, water resistive barriers, exterior laminates, composite panels and foamed plastic insulation.

UL Solutions' certification for exterior wall systems and components provides manufacturers, architects and building contractors the evidence needed to demonstrate compliance to various air and water infiltration standards, such as ASTM E331 and ASTM E2357, in conjunction with NFPA 285.

Record Protection
For 80 years, UL Solutions has helped safeguard valuable records and data by developing test methods that evaluate and rate the performance of self-contained, movable devices, including file cabinets, single and double door safes and single lid containers. Classified products appear in UL Solutions' searchable UL Product IQ tool and are referenced by more than 2,500 code authorities annually.

Fire Testing to International Maritime Fire Standards
One of the biggest safety risks aboard marine vessels is fire. Confined spaces, flammable materials and toxic smoke can quickly escalate a fire into a life-threatening scenario risking the safety of those aboard as well as the structure of the ship. The Building Materials team at UL Solutions offers the ability to test and evaluate products such as doors and firestopping products against the current edition of the IMO Resolution MSC.307(88), International Code for Application of Fire Test Procedures.

Reaction to Fire
The reaction of contents and building materials when exposed to a flame is a concept widely addressed through various global standards. Our Reaction to Fire test capabilities for building materials such as insulation, fabrics and wall coverings include CAN/ULC-S102, UL 723/ASTM E84, EN13501-1, EN13823 and various ISO, ASTM in addition to various industry standards for toxicity, heat and smoke release; and combustibility.

UL Solutions' building global science capabilities

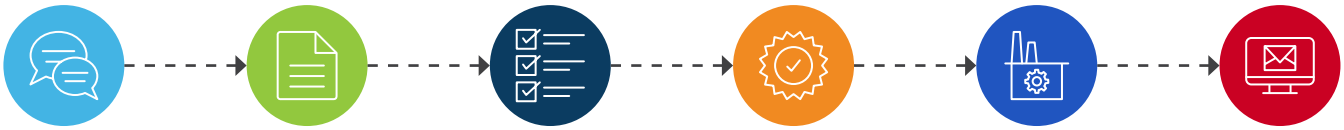
Our expansive set of services span globally to meet your needs in an ever-changing compliance landscape.

Product	EN STANDARDS	BRITISH STANDARDS	UL STANDARDS	ULC STANDARDS	ASTM STANDARDS	ISO STANDARDS
Firestopping	EN 1366-4	BS 476/20	UL 1479	CAN/ULC-S112	ASTM E814	ISO 10295-1 Part 1
Linear Joint Seals or Joint Systems	EN 1366-4	BS 476/20	UL 2079	CAN/ULC-S115	ASTM E1966	ISO 10295-1 Part 2
Perimeter Fire Containment	EN 1364-4			CAN/ULC-S115	ASTM E2307	
Grease Ducts			UL 2221	ISO 6944 (1985)	ASTM E2336	ISO 6944
Steel Protection	EN13382-3/4/6/8/9/10 EAD 350142-00-1106, EAD 350402-00-1106, EAD 350140-00-1106	BS 476/21 - ASFP Yellow Book	UL 263, UL 1709, UL 2431	ULC/CAN-S101	ASTM E119	ISO 834-10, ISO 834-11, ISO 835-13
Gypsum Board		BS476/21	UL 263	CAN/ULC-S101	ASTM E119	ISO 834
Partition Kits	EN1364-1	BS476/22	UL 263	CAN/ULC-S101	ASTM E119	ISO 834
Sandwich Panels	EN1364-1	BS476/22	UL 263	CAN/ULC-S101	ASTM E119	ISO 834
Fire Dampers	EN1366-2	BS476/20	UL 555	CAN/ULC-S112		ISO 21925-1
Smoke Dampers	EN1366-10		UL 555S	CAN/ULC-S112.1		ISO 21927-1
Ceiling Dampers			UL 555C	CAN/ULC-S112.2		
Fire Doors	EN1634-1	BS476/22 clauses 6, 7 & 8	UL 10B, UL 10C	CAN/ULC-S104		ISO 3008
Glazing	EN1364-1	BS476/22 clause 10	UL 9, UL 10B, UL 10C, UL 263	CAN/ULC-S106, CAN/ULC-S104, CAN/ULC-S101	ASTM E119 for walls only	ISO 3009
Hardware (Fire Tests)	EN1634-1, EN1634-2	BS476/22	UL 10B, UL 10C	CAN/ULC-S104		ISO3008
Smoke Doors	EN1634-3	BS476-31.1	UL1784			ISO 3008-3
Floors and Roofs	EN 1365-2	BS476-21.7				

Building Materials

Safety Certification

Pre-Certification | **Certification** | **Continued Compliance**



Optional Early Engagement → **Test Program Development** → **Preliminary Engineering Evaluation** → **Testing and Certification** → **Factory Production Control and Follow-Up Services** → **Product IQ**

Early Engagement
UL Solutions offers an optional pre-certification phase to help customers determine the best approach to their product submittal process. This advisory phase involves technical discussions surrounding UL Solutions' testing and certification requirements and can help minimize delays and prevent redesigns. Early engagement provides an opportunity to review product construction features and identify critical tests and / or schedules that can minimize costs for rework and delays in issuing certification.

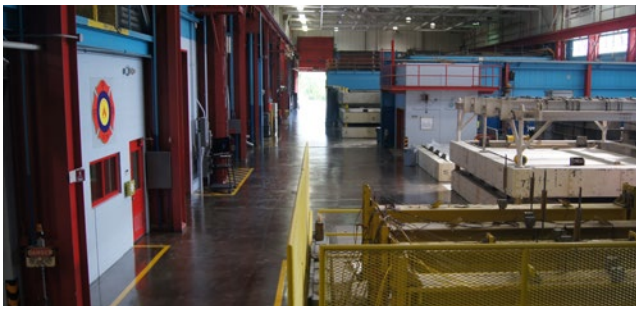
Test Program Development
A UL Solutions engineer will work with the manufacturer to develop a test program. This provides an accurate statement of work and a quote for certification. During this process UL Solutions will review product specific information, including the region or country in which the product will be sold, product brochures, engineering drawings, and installation instructions (if applicable) to determine the appropriate compliance standard(s) and applicable tests.

Preliminary Engineering Evaluation
UL Solutions recommends starting with a preliminary investigation to conduct critical tests, such as long-term aging or complex fire testing programs, and then determine the desired levels of compliance. During a preliminary investigation, UL Solutions collaborates with the manufacturer to determine which tests to conduct, potential samples required and a path to compliance. After each preliminary investigation, UL Solutions provides a detailed report of all test results where testing has been conducted or a project outline for how to take the next steps to gain certification.

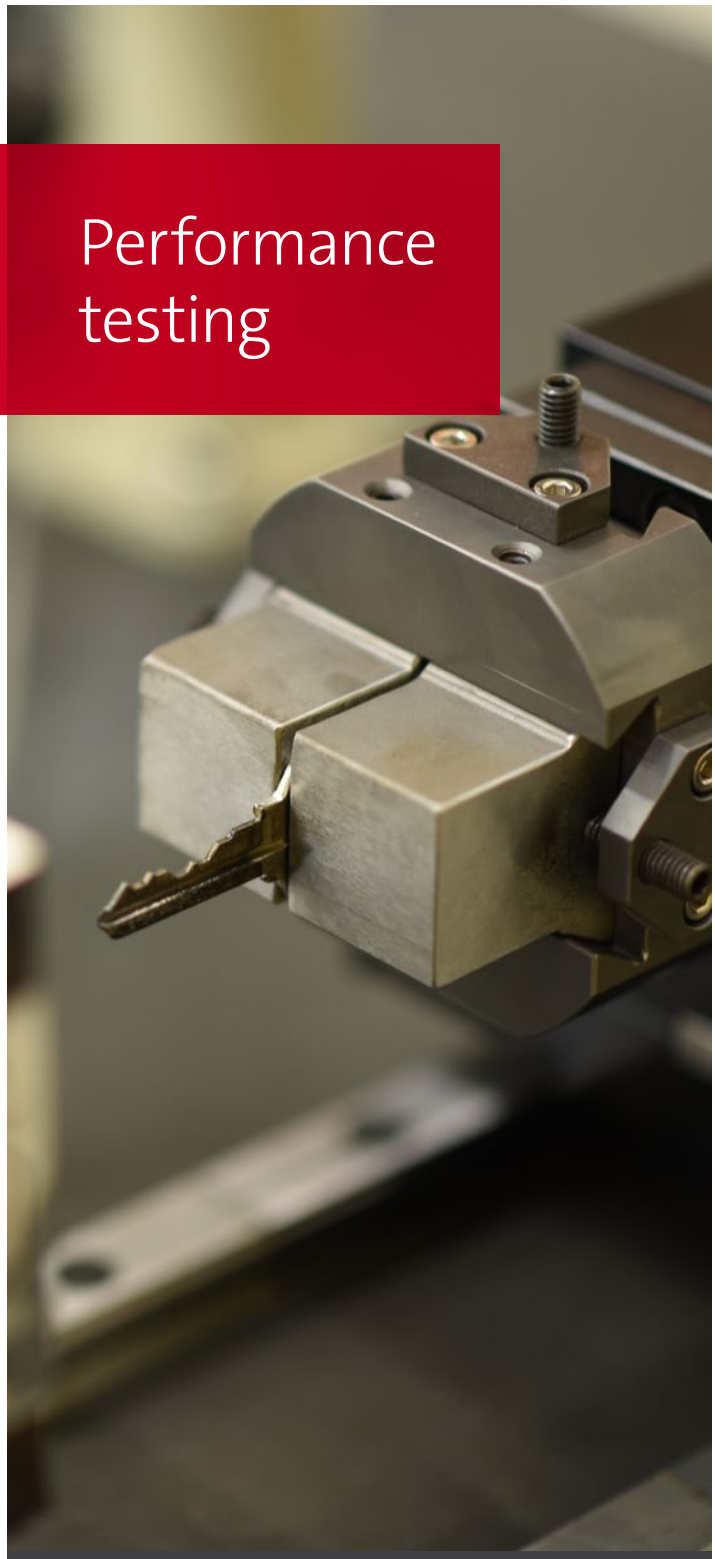
Testing and Certification
During testing and certification, all samples and relevant documentation such as product specifications, engineering drawings, and installation instructions must be provided. UL Solutions' engineers and lab technicians will then conduct all required tests and evaluations in accordance with the applicable standard(s). Upon confirmation of compliance, UL Solutions issues a certification report and schedules an initial production inspection at the manufacturing location(s) to confirm the production facility is ready and authorized to produce UL Certified products.

Factory Production Control (FPC) and Follow-Up Services (FUS)
UL Solutions performs regular follow-up visits to the manufacturing location(s) to help ensure that the products being produced are representative of the products evaluated during the certification program. These visits identify supply chain issues, such as material substitutions, and help ensure the continued value of the UL Mark.

UL Product IQ
Certified products are entered into UL Product IQ Tool . This searchable tool is a valuable, free-of-charge resource used by stakeholders looking for products that have been certified in accordance with specific standards or requirements. (View the Product IQ Tool at https://productiq.ulprospector.com/en.)



Performance testing



UL Solutions' performance testing services provide objective confirmation of product performance following a specific test method in controlled laboratory settings.

Verification Testing
UL Solutions engineers and lab technicians will conduct specified testing and provide a data-only test report. This report will not include a conclusion about the data and outcomes or include any statements of compliance.

Door Hardware
Performance testing for various standards allows manufacturers to enter global markets with a single product submittal.

Durability Testing for Steel Protection
Fire resistive coating materials that protect structural steel may experience conditions after installation that might impact its ability to thermally protect the structural steel in the event of a fire. The UL 2431 certification program simulates certain conditions, such as high humidity and vibration, prior to the fire endurance evaluation to help ensure the fire resistive coating material will perform as intended in the field.

Energy Star for Roofing
UL Solutions can conduct both Energy Star and Cool Roof Rating Council testing and certification for Roofing Products. This testing includes Solar Reflectance (ASTM C1549) and Thermal Emittance (ASTM C1371).

Fuel Pipes
Certain building codes and jurisdictions require fuel pipe (pipe conveying combustible liquid from a supply tank to a generator) to be protected by unspecified, fire-rated construction. UL 1489 provides a compilation of standardized experiments to evaluate the fire resistive construction protecting the fuel pipe from breaches or leaks in the event of a fire.

Performance testing for *various standards* allows manufacturers to enter

GLOBAL MARKETS
with **a single product submittal**

UL.com/Solutions

BE22CS645711