



FIRE SUPPRESSION

TESTING, CERTIFICATION & TRAINING



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



PROMOTING YOUR PRODUCT'S SAFETY

UL's association with fire safety, integrity, quality and performance is globally recognized. Fire suppression products that carry the UL Mark gain a decisive competitive edge through the instant recognition of the UL Mark to the fire safety community. Our fire research and testing capabilities bring unmatched experience and insight to the building products industry. We help develop many of the industry test standards that are referenced in building codes worldwide and UL's fire suppression team uses research to stay at the forefront of fire safety advancements.

Established in the United States in 1894, UL operates globally with affiliates in the US, Asia, Middle East, Europe and Africa, operating a comprehensive range of services to help manufacturers gain the compliance and performance credentials they need to compete in the global marketplace.

UL provides customized services, which range from fire safety testing and certification for manufacturers to training programs for regulatory authorities, building owners, insurance companies and the fire safety community.

Partnering with UL

Our services support the fire suppression 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, with no compromises in integrity or scientific excellence. In today's fast-moving business environment, UL's fire suppression team adapts to stay at the forefront of fire safety advancements.

We offer flexible options for testing outside of UL facilities, including witness testing at third-party laboratories or at the manufacturer's facilities. UL offers customized testing solutions and a sensible system to facilitate compliant component choices and replacements that is correlated to the applicable standards. This helps simplify both the design and testing process for manufacturers.





FIRE SUPPRESSION

PRODUCT GROUPS



Fire Extinguishers

More than 80 years ago, UL developed the test standards for fire extinguishers that still guide the product development process today. As new technologies emerge, UL's team of engineers continues to work with our customers to address emerging safety and performance challenges. UL offers certification to all key standards pertaining to fire extinguishers, specifically carbon dioxide, dry chemical, foam, halocarbon clean agent, and water-type fire extinguishers.

Fire Extinguishing Systems for Special Hazards

UL provides testing as well as certification for various types of gaseous, dry chemical, wet chemical, and condensed aerosol extinguishing systems. These systems protect a wide range of spaces, such as computer clean rooms, industrial paint lines, and commercial cooking equipment. Because these fire extinguishing systems are used in a variety of installations, they rely on the integrity and compatibility of their components, from the cylinders that store extinguishing agents to the detection, actuation, distribution piping and discharge devices.

Fire Main Equipment (Underground Pipes and Equipment)

UL evaluates products for water-based fire suppression that connect a water supply to the building and other equipment for fighting a fire. UL's team of engineers determines each product's compliance and suitability for use in water-based fire suppression systems. Products include underground ductile iron pipe, fire department connections, ultrasonic flow meters, PVC pipes and fittings, fire hoses and hydrants.

Firefighting Foam and Equipment

UL's testing and certification for firefighting foam analyzes the foam's properties, performance, and compatibility with foam equipment in accordance with established standards. We test and certify proportioners, foam chambers, monitors, nozzles, and foam liquid concentrates, such as low-, medium- and high-expansion.

Pumps and Engines

UL evaluates and tests fire pumps, engines, and flexible couplings to help ensure that a building's sprinkler system has adequate water pressure to operate and perform effectively. We examine products for their compliance to construction requirements, and we test them for performance to confirm their operation at desired ratings.



PRODUCT GROUPS *(continued)*

Sprinklers

UL's fire safety team provides testing and certification of sprinklers to check the operating performance of both wet- and dry-type sprinklers in residential, commercial and industrial settings. We evaluate sprinklers for physical strength and leakage resistance, sensitivity to environmental conditions and temperature rating, response time, and functionality, as well as fire performance.

Valves

UL provides testing and certification for all types of valves used in fire suppression systems. The types of valves UL certifies include alarm valves used to summon the fire department, check valves used to prevent water from being pumped back into the water main, and deluge valves used to discharge water to open sprinklers. Valves are subjected to performance tests, such as leakage, hydrostatic pressure, friction loss, operation, cycling and the long-term effects of aging.

Sprinkler Pipes and Fittings

UL evaluates sprinkler pipes and fittings to determine their suitability for use in water-based sprinkler systems. Some examples of these products are steel and thermoplastic sprinkler pipe and fittings, rubber gasketed fittings, flexible sprinkler hose with fittings, and various types of pipe hangers. Pipe and fitting assemblies are subjected to performance tests, such as leakage and hydrostatic pressure, and products intended for exposed installations are subjected to fire tests. Pipe hanger and bracing devices are subjected to load tests.

Water Mist System Components

UL's suppression team can investigate and certify water mist nozzles, pumps, and strainers in accordance with safety standards and in accordance with IMO (International Maritime Organization) Regulations. Water mist nozzles are subjected to performance tests, such as water flow and distribution testing and vacuum resistance, clogging, and freezing tests.

Warehouse Storage Products

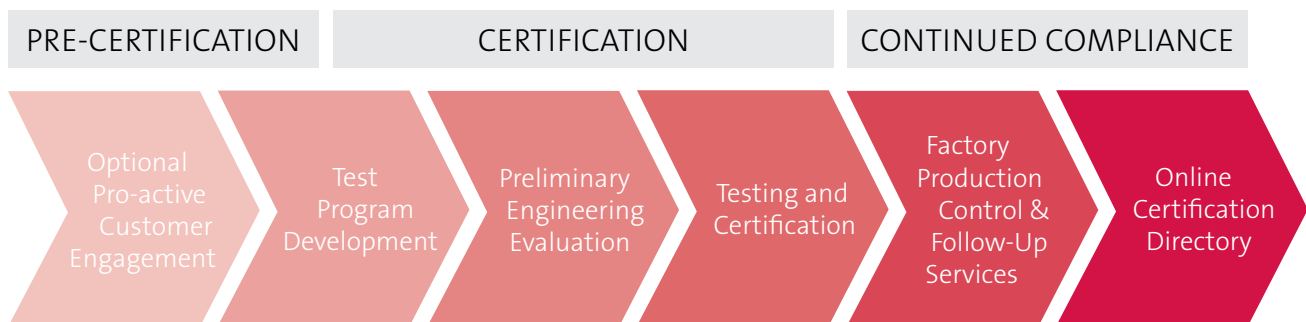
UL provides certification and testing for storage pallets and intermediate bulk containers. Through UL's comprehensive testing capabilities, we can evaluate various product packaging and storage techniques in commercial and industrial buildings for our customers, so they can gain a precise understanding of property risks and identify opportunities to minimize losses and reduce the consequences of fire.





FIRE SUPPRESSION SERVICES

SAFETY CERTIFICATION



PaCE (Pro-active Customer Engagement)

UL offers an optional pre-certification phase to help customers determine the best approach to their product submittal process. During this phase, a UL representative will meet with the manufacturer face-to-face to discuss UL's offerings, as well as the testing and certification requirements, helping to find the most efficient and effective process. This technical discussion can minimize delays and possibly prevent redesigns. Early customer 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.



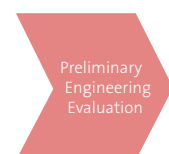
Test Program Development

A UL 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 will review product specific information, which includes the region or country the product will be sold, product brochures, engineering drawings, and installation instructions (if applicable) to determine the appropriate compliance standard(s) and the applicable tests.



Preliminary Engineering Evaluation

UL recommends starting with a preliminary investigation to conduct critical tests, such as long-term aging or fire performance tests, in order to determine a level of compliance. During a preliminary investigation, UL collaborates with the manufacturer to determine which tests to conduct. After each preliminary investigation, UL will provide a detailed report of all test results. This allows time to rectify any noncompliance issues and progress towards certification.





SAFETY CERTIFICATION *(continued)*

Testing and Certification

During testing and certification, manufacturers submit all samples and relevant documentation (product specifications, engineering drawings, installation instructions, etc.), are provided for UL's engineers and lab technicians to conduct all required tests and evaluations in accordance with the applicable standard(s). Upon confirmation of compliance, UL issues a certification report and schedules an initial production inspection at the manufacturing location(s) to confirm the production facility is ready and is authorized to produce UL-certified products.

Testing and
Certification

Factory Production Control (FPC) and Follow-Up Services (FUS)

UL performs regular follow-up visits to the manufacturing location(s) to help ensure that the products being produced are representative of the products that were evaluated during the certification program. These visits identify problematic issues in the supply chain, such as material substitutions, and they ensure the continued high value of the UL Mark.

Factory
Production
Control &
Follow-Up
Services

Online Certifications Directory

Once products are certified, they are entered into UL's Online Certifications Directory. This directory is a valuable, free-of-charge resource that is used by stakeholders who are looking for products that have been certified in accordance with specific standards' requirements. (View the Online Certifications Directory at www.ul.com/database.)

Online
Certification
Directory





PERFORMANCE TESTING

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

Verification Testing

During verification testing, UL engineers and lab technicians will conduct specified testing and provide a test report with data only. This report will not include a conclusion about the data outcomes or statements of compliance.

Field Sample Sprinkler Testing

The National Fire Protection Association (NFPA) Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, NFPA 25, requires building owners to have their installed sprinklers periodically tested by a recognized testing laboratory. UL tests sprinklers sampled from field installations and provides a report on the results to assist these parties in assessing the effectiveness of sprinkler systems or the need for replacement of sprinklers that are currently in service. For more information or to submit sprinklers for testing, go to [UL.com/fieldsprinklertesting](https://www.ul.com/fieldsprinklertesting).



COMMODITY CLASSIFICATION TESTING

When insurance companies underwrite risks for stored commodities, they depend on precise tests that evaluate whether sprinkler systems will control or suppress specific fire challenges. UL provides an independent assessment of the fire risks associated with various types of stored commodities protected by sprinklers.

As a part of commodity classification testing, UL examines many factors, including sprinkler activation temperature, sprinkler response time index (RTI), the radial distance from the sprinkler to the center of the fire, the distance between the ceiling and the top of the commodity, and the number of storage tiers. UL tests the combustion characteristics of a broad range of commodities in various packaging configurations and assigns a commodity hazard classification referenced in NFPA 13, the Standard for the Installation of Sprinkler Systems.

Tests are conducted under a specialized calorimeter that collects burning gases during flaming combustion. UL's detailed reports provide stakeholders and insurers all the information they need to assess risk comprehensively and accurately.

Product and packaging composition is ever-changing, driven by raw material availabilities, product designs and packaging advances. Commodity classification helps to safeguard against the unknown by identifying risks and enabling the development of relevant protection schemes that support insurance requirements.

FIRE RISK ASSESSMENT TESTING

As the world's infrastructure grows and technologies evolve, the ability to thoroughly assess the risk of fire or hazards associated with a new design, material or concept is critical for the safety of people and property. UL can help manufacturers, property risk managers, application engineers and other stakeholders understand the precise risks involved and the likelihood of these scenarios occurring. UL can simulate a specific fire safety challenge and collect data that provide customers with valuable information so they can manage risks more effectively and make informed business decisions.

Our world-class testing facilities and technical experts have the ability to either use an existing test method or create a customized test procedure to evaluate a wide variety of products and scenarios. These assessments can range from testing unique products or techniques to identifying special hazards associated with unusual or challenging environments. Our long-standing expertise in fire safety, along with our extensive testing capabilities in markets around the world, enables us to evaluate complex scenarios with accuracy, innovation and impartiality. As a comprehensive service provider, UL provides technical information, clear documentation and thorough reporting to help customers mitigate identified risks.



TRAINING

UL offers training programs in several languages, and we can translate into any language, send experts to any location, and investigate any market risk to meet our customers' knowledge needs. Our team of professional educators helps our customers optimize and enhance results. We can provide front- and back-end assessments to measure training effectiveness and knowledge retention.

Our training programs include:

Certified Risk Professional

The UL Certified Risk Professional – Our Property Certificate Program allows participants the opportunity to learn how to recognize and evaluate property-related risks. It is recommended for people who have three to five years of experience in the industry.

Commodity Classification

This program will help you learn how UL's Commodity Classification testing program relates to Automatic Fire Sprinkler System Design in accordance with NFPA 13, Standard for the Installation of Sprinkler Systems.

Fire Extinguishing Systems

The training modules for extinguishing systems used for special hazard fire suppression provide an understanding of UL Standards and the benefits of UL Certification.

Customized training programs and testing for fire safety challenges

UL has a broad portfolio of fire safety testing capabilities that can assist our customers with proactively identifying and evaluating unique fire safety concepts and fire suppression techniques when protecting property. These investigations include performance-based fire testing that can efficiently and cost effectively simulate a fire safety challenge, such as the mitigation of special hazards associated with unusual storage scenarios, unique applications, or challenging environments.

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