

50th anniversary of UL 325

A LOOK BACK ON THE INDUSTRY-CHANGING STANDARD

BY VICKI JONES, EDITOR

50 years ago, the first edition of the ANSI/CAN/UL 325 (UL 325) was released and published; today, the standard still stands as the cornerstone of evolving safety standards for the door, gate, and other associated industries.

When introduced in 1973, the UL 325 included door, drapery, gate, louver, and window operators and systems. Over time, additional products were added — some, such as electrically operated garage doors, required more specific guidelines to reduce risk and increase safety. As a result, critical updates and revisions were incorporated into the standard and continue to be made as needed.

For example, after some unfortunate accidents occurred in the gate automation segment, the industry took action. “In 1993, industry trade associations began working together with UL to create an effective and safe standard that we could all live by and work with,” said Rick Sedivy. “It took five years for everyone to agree on the language and then another two years before the new edition went into effect.”

With widespread use and support from the industry for 50 years and counting, the

standard continues to evolve, expand, and increase in relevance. Before we look back on the remarkable evolution of UL 325, we would like to first provide an overview of the industry-changing standard.

What is UL?

Underwriters Laboratories, Inc. (UL), established in 1894, is self-described as “the leading third-party certification organization in the United States and the largest in North America.”

UL’s primary stated mission is “to evaluate products in the interest of public safety.” UL is not the only third-party certification organization; there are other testing laboratories and certification organizations in the United States and in many other countries.

As of June 2022, UL is made up of three distinct organizations: UL Research Institutes, UL Standards & Engagement (ULSE), and UL Solutions — each with a unique role in working for a safer industry.

What is a UL Standard?

A Standard can be defined as “the consensus level of safety expected for product design and performance.” For the most part, UL Standards

are voluntary standards that establish minimum requirements for a product. The standards are developed via an open, collaborative process, and they continually evolve over time. ULSE publishes over 1700 Standards, and many are harmonized and/or adopted for use in the U.S. and internationally.

“Voluntary” means that the standard has not been initiated through any government or similar regulatory agency mandate. However, it is important to note that UL 325 is also mandated through federal law for residential garage door openers. Often, UL Standards are intended to be “voluntary,” but some are made mandatory by federal, state, or local jurisdictions, code and regulatory bodies, insurers, construction specifications, retailers, and others.

“Minimum” means that the requirements should be met by all participants and products governed by the standard and that more stringent provisions may be adopted by some in the industry.

An “open, non-exclusionary process” indicates that any interested party can participate in the development of a UL standard. A number of UL standards have undergone a review and voting process in order to obtain





additional recognition as American National Standards and National Standards of Canada.

What does UL 325 Standard include?

UL 325 includes a glossary with definitions of each type of operator, describes different classes of gate operators, and lists entrapment protection criteria for types of operators. It also includes requirements for gate construction and installation, instructional requirements, and warning requirements.

What products are covered in UL 325?

- Residential garage door operators
- Commercial/industrial door operators
- Gate operators
- Parking gates
- Pedestrian door systems
- Window operators and systems
- Drapery operators
- Louver and shutter systems
- Turnstiles (UL 2593)
- Accessories (photo-eyes, edges, wireless links, BBU, unattended, etc.)
- Various gate types (slide, swing, pivot, vertical lift, barrier arm, and bifold)

How is UL 325 changed?

Anyone can submit a proposed revision to UL 325 through UL's Collaborative Standards Development System (CSDS). Once submitted, the proposal will go out for a preliminary review to the Technical Committee (TC) and a public review in both Canada and the United States.

The proposal may be withdrawn, further developed before balloting, or moved forward to ballot as written. If it is moved to ballot, then the TC will be asked to vote on the proposals. Any negative comments will be addressed and recirculated to the TC. During recirculation, the TC can respond, reaffirm, or change their original vote.

To be published as part of the standard, the proposal must meet a minimum consensus requirement. These requirements are different for Canada and the U.S. Membership on the TC is not required to participate in the Standards Development Process. Status of proposals can be accessed online at no cost through CSDS. More information on the Standard Development Process and CSDS are available here: www.ulse.org/Learn.

PAGES OF HISTORY

The evolution of UL 325

UL 325 is a living document as evidenced by the many changes, updates, provisions, and additions the standard has undergone over the past 50 years. It is constantly being evaluated and improved, as products within the door and gate operator industries evolve, to ensure that it remains relevant and effective.

To learn more about the 50-year history of UL 325, we spoke with four experts in the industry who have been actively involved with or who have strongly supported UL 325 efforts throughout their careers. Together, they helped D+AS create an outline of the most significant milestones of the UL 325 since 1973.

We spoke to:

Barbara Kelkhoff, Regulatory Engineering

Manager, Chamberlain Group

Steve Kuscsik, Manager, Principal Engineers,
Underwriters Laboratories (UL)

Rick Sedivy, Director of Marketing &
Regulatory Affairs, DoorKing

Amy Walker, UL 325 Program Manager,
UL Standards and Engagement (ULSE)

UL 325: KEY MILESTONES

April 1973: The first edition of UL 325 is released and published. It is focused on the electric operation of residential and commercial garage doors and only contains one brief mention for parking lot gates.

March 1982-October 1992: During this time period, 54 deaths and 37 serious injuries to children under the age of 15, resulting from being trapped when automatic garage doors failed to stop and reverse direction, are reported by the U.S. Consumer Product Safety Commission (CPSC).

October 5, 1988: Two separate accidents involving automatic garage doors claim the lives of two children in the Minneapolis/St. Paul, Minnesota area.

1989-1990: Minnesota lawyer conducts a campaign to address automatic garage door injuries and proposes legislation for residential garage door openers. She connects with Colin Willmott of Chamberlain, who then engages

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members of DORCMA (Door Operator & Remote Control Manufacturer's Association).

1989-1991: DORCMA works with UL, the Canadian Standards Association, the CPSC, the National Safety Council, and state legislators to review and address these accidents, laying the groundwork for the technology and regulations for the "monitored safety devices" we are familiar with today.

Early 1990s: Industry and DASMA members, led by DORCMA (now the DASMA Gate Operator Division), initiate the inclusion of vehicular gate operator provisions within UL 325.

1990: UL 325 is incorporated into the National Electric Code (NEC), NFPA 70, and the Consumer Product Safety Improvement Act of 1990 (which requires all residential garage door operators to comply with UL 325).

1990-1993: California, Minnesota, and New York pass state legislation requiring external entrapment protection sensors on all openers sold in those states after Jan. 1, 1993. Additionally, those three states, along with Indiana, pass legislation requiring garage door technicians to test the contact reversing mechanism on older openers being serviced.

November 16, 1990: President George H.W. Bush signs federal legislation (Public Law 101-608, the Consumer Product Safety Act of 1990), which requires all residential garage door openers produced after Jan. 1, 1993, to meet new entrapment protection requirements in the upcoming third edition of UL 325. Compliance with essential safety requirements in UL 325 is still required in the Federal Register for residential garage door operators, and the Federal Register requirements are periodically updated to include relevant safety advancements in UL 325.

SUCCESS STORY

SINCE JAN. 1, 1993, THE TOTAL NUMBER OF INCIDENTS OF CHILD-ENTRAPMENT DEATHS OR SERIOUS INJURIES HAS BEEN SUCCESSFULLY REDUCED TO NEARLY ZERO FOR AUTOMATED GARAGE DOORS THAT ARE PROPERLY INSTALLED WITH EXTERNAL PHOTO-EYE ENTRAPMENT PROTECTION.

December 31, 1991: The third edition of UL 325 is published with new regulations that approve photo-eyes and edge sensors as acceptable external entrapment-protection devices.

1992: The CPSC enacts regulations covering residential garage door openers, including new provisions from UL 325 requiring that all residential garage door openers manufactured or imported for sale in the U.S. after Jan. 1, 1993, be equipped with monitored entrapment-protection devices, such as a photo-eye system.

January 1, 1994: The mandatory effective date after which all residential garage door openers manufactured or imported for sale in Canada must be equipped with monitored entrapment-protection devices.

1996: Faced with increasing product regulation regarding safety, entrapment, insulation flammability, and wind load requirements, DASMA hires Joe Hetzel to help the industry present a united voice to legislative bodies and building code organizations.

March 2000: Substantial changes to the gate operator provisions that were published in 1998 go into effect. The new provisions were primarily intended to improve the ability of an automated vehicular gate system to sense and protect against an individual becoming trapped by a moving gate. Manufacturers had approximately 30 months to adapt their vehicular gate operator products or lose their UL listing authorization.

2002: A new edition of UL 325 is published that includes revisions and clarifications to the 1998/2000 gate operator requirements.

2006: Provisions for "stopped, partially opened doors" are added to UL 325 and published.

Early 2009: Gate operators are required to be supplied with or have provisions for at least one independent primary and one independent secondary means of entrapment protection.

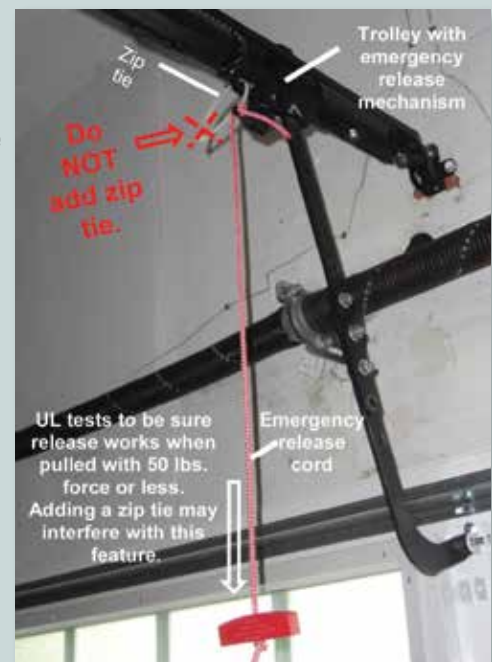
Mid-2009: DASMA members work closely with UL to develop provisions covering emerging technology of unattended operation, such as timers to close, internet connectivity, and other smart control stations.

October 2009: UL issues Certification Requirement Decision (CRD), with new language stating that both primary and secondary means of entrapment protection are required. The new content clarifies that this requirement is not optional.

2011: UL 325 adds provisions for the evaluation of testing of entrapment protection based on wireless technology and entrapment protection requirements for horizontally moving residential garage doors.

2015: DASMA and UL collaborate to create and release the "10 Home Security and Garage Door Safety Tips | UL Solutions" position paper.

The publication was developed in response to trending news stories at the time recommending that homeowners use a zip tie to disable their door opener's manual (emergency) release feature to discourage garage break-ins. The document provided alternate steps a homeowner could take to help keep their garage and home secure.



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2015-2017: The Canadian Door Institute and DASMA request that UL become a national Standard. Standards Council of Canada (SSC) panel is formed and uses UL 325 in the U.S. as a template for the Canadian version of the safety document.

January 2016: The terms “primary” and “secondary” are removed, which helps clarify that both means of entrapment protection are equally important. A new requirement (31.1.7), specifying that external entrapment protection devices on a gate operator must be monitored, is added.

December 2016: Provisions for accessories providing unattended controls for a residential garage door opener are added.

May 2017: The seventh edition of CAN/UL 325 is published. The standard is recognized as both the American National Standard and the National Standard of Canada, making it the first ever binational (U.S./Canada) standard for door and gate operators and associated products.

May 2018: By this time, 43 States have adopted a version of the International Building Codes (IBC) that references compliance to UL 325 and ASTM F2200 for door and gate operators.

August 2018: The requirement for the two means of entrapment protection devices is clarified further. The new language specifies that two independent means of entrapment protection are required for each direction of each entrapment zone.

The Consumer Product Safety Commission (CPSC) launches “Operator Safe Gate,” a public awareness campaign that urges gate operator installers to install gate operators correctly and promotes the use of gate operators that are fully compliant to UL 325.

February 2023: Requirements for bi-fold gates are added.

THE SIGNIFICANCE OF UL 325

All industries need standards as they evolve and mature. Our industry forefathers recognized the need 50 years ago when the UL 325 Standard was born. As the door, gate, and operator industry has grown and advanced, UL 325 has kept pace and grown as well.

To do so requires considerable time, effort, and money from the industry, and participants are to be commended for their dedication to improving safety and effectiveness of the affected systems. UL 325 will continue to evolve, as will the industry, and we should be proud of the impact the standard has had on the most important part of the industry: the users of its products.

UL 325

REFLECTIONS FROM FIVE EXPERTS

Joe Musso, *Standards Technical Panel (STP) Chairperson for UL 325 June 2003 until his retirement from UL in November 2022*

“I was truly honored to be convenor of the UL STP for over 20 years. I was continually impressed by the steady flow of proposals to revise and improve the Standard to keep pace with product applications, technology advancements, and safety concerns. And while many STP members competed against each other in the market, when it came to UL 325 and safety, there was an overwhelming atmosphere of collaboration and drive for positive safety outcomes.”

Barbara Kelkhoff, *Senior Manager for Chamberlain Group, Regulatory Engineering, retired April 2023*

“I am honored to be able to contribute to the growth and improvement of ANSI/CAN/UL 325 over my 30 years at Chamberlain Group.”

Steve Kuscsik, *UL Principal Engineer, who has worked at UL and with UL 325 for over 25 years*

“With all the different product types and Standards I have worked with over the years, I have not seen a more adopted and supported Standard than UL 325. It is beneficial and encouraging to see the industry being fully engaged with this Standard as a primary driving force for safety and success, like a true North Star.

“The industry has been so involved with its [UL 325] development and evolution, by promoting the expectation that all products eligible shall meet the requirements and by providing education to fellow manufacturers, dealers, installers, technicians, users, and AHJs to understand how and why these safety requirements are relevant and need to be adhered to.”

Rick Sedivy, *Director of Marketing and Regulatory Affairs for DoorKing and responsible for implementation of Regulatory Compliance and Product Safety*

“The products that the operator manufacturers are making today are far safer

than the products that were manufactured prior to the UL 325 update.

“The standard is a living document; changes can, and do, happen all the time. If a dealer is working from an outdated version of the standard, they can soon find themselves making costly errors in their submittals and installations. DASMA committees work with UL constantly on revisions to the standard, so being involved gives DASMA members a heads up on what may be coming down the pipeline.”

Amy Walker, *UL 325 Standards Program Manager at ULSE for 25 years and counting*

“I receive, process, and manage the proposals that are submitted for consideration to UL 325. Voices from all viewpoints in the industry that use UL 325 are critically important, and we continually encourage public involvement and a transparent and balanced process for continued standards development. The industry that relies on UL 325 is incredibly active, and I can clearly see that the proposals submitted, discussed, and published are important to the industry.” ■