

UL 325

You should never install, or have installed on your property, a vehicular gate operator that does not carry the "MARK" of an NRTL such as ETL or UL. You should also be aware that NRTL's do not "approve" or "certify" products that they test. Manufacturers that use this terminology are incorrect in its usage. When a product is tested by an NRTL, and that product is found to be in compliance with the safety standard, then that product is said to be "LISTED" and the manufacturer receives a "MARK" and an "Authorization to Label" from the NRTL.

The standard to which vehicular gate operators are manufactured and tested to is U.L 325 - Underwriters Laboratories Inc., Standard for Safety: Door, Drapery, Gate, Louver, and Window Operators and Systems. In addition to the 325 standard, vehicular gate operators must also be tested to U.L. 991 - Tests for Safety-Related Controls Employing Solid-State Devices.

The U.L. 325 Standard has undergone significant revisions over the past several years. The main purpose of the revisions were to create entrapment protection criteria for vehicular gate operators, and to increase over-all safety of the product. The revised standard was first published September 18, 1998, and went into effect March 1, 2000. The key issues of the September 18, 1998 revision are as follows:

Created different "classes" of vehicular gate operators.

Requires a primary and a secondary entrapment protection device (30A.1.1).

Defined the different types of entrapment protection devices than can be used for primary and secondary protection in a given class of operator.

Requires an audio alarm to sound upon two sequential activations of an entrapment protection device not interrupted by an open or close limit device (30A.1.1A).

Requires a renewed intended input in the line-of-sight of the operator once the entrapment sensing system detects a second sequential obstruction (30A.1.2b).

Requires slide gates not to move greater than 1 ft/sec (30A.1.19).

Requires the gate operator to have an integral means for manual operation (30A.1.20).

Consumer Product Safety Commission issues public service announcements on automated gate safety

The U.S. Consumer Product Safety Commission on Oct. 23 issued a series of print, radio and television public service announcements alerting the public to the stricter safety standards that are now in place for automated gate systems.

The CPSC specifically warned the public about the danger posed by older gate systems, which may have no safety devices, or inadequate ones.

"The U.S. Consumer Product Safety Commission is alerting consumers to a tougher safety standard that should prevent children from becoming entrapped in automatic security gates," said CPSC chair Ann Brown. "These sliding or swinging gates are typically found at the entrances to residences, apartment buildings, condominiums, parking lots and garages and commercial establishments."

The agency referred to Underwriters Laboratories standard UL325 which went into effect on March 1, 2000. This standard requires all labeled gate operators manufactured after the date the standard went into effect to be equipped with or

have provision for at least one independent primary means and one independent secondary means to provide against entrapment. The standard addresses four gate operator classifications: residential, commercial or general public access, industrial or limited access, and restricted access.

“If your apartment or condominium complex has an older gate, contact a manager or your homeowners’ association and request that it be replaced with a safer automatic gate system that meets the new standard,” urged Brown. “It could save a life.”

Although some were skeptical of the figures quoted by CPSC on the number of accidents and deaths caused by automated gate systems, access control manufacturers and dealers generally viewed the public service announcements positively, as an aid in spreading the word about the safety standard. Some dealers have made it a practice to contact the owners of automated gate systems in their market area to offer inspections of existing systems, and suggest safety upgrades.

A fence and gate industry task force is also working toward having additional safety measures adopted into the voluntary standards published by the American Society for Testing and Materials. These added measures would apply primarily to the gates themselves, and be aimed at preventing pinching and crushing injuries, as well as further steps to prevent entrapment.

The standard also addresses factors relating to gate construction and installation, especially safeguards to prevent “reach through” accidents with sliding gates. Other safety items are:

- Vehicular gate operators should only be used on vehicular gates, never on pedestrian gates;
- Controls should be as far away from the gate as possible to prevent the “reach-through” accidents mentioned previously;
- All exposed entrapment points must be eliminated or guarded;
- Guarding must be supplied for exposed rollers;
- Gate controls must be installed where the user has a full view of the gate operation;
- Warning signs should be posted on each side of the gate.

Information on UL325 may be obtained from virtually any manufacturer of gate operators and/or controls, as well as from the Door and Access Systems

Manufacturers Association (DASMA). Contact the organization at 216-241-7333, or fax 216-241-0105.

Frequently asked questions about automatic gate operating systems and UL 325

[In response to new safety requirements by Underwriters Laboratories which apply to automatic gate operating systems (as well as other types of automated systems), the Door & Access Systems Manufacturers Association (DASMA) has published these FAQs in an attempt to inform and educate access control dealers. This information was distributed as part of a special seminar on UL 325 held at FENCETECH2000.]

Is compliance with UL 325 a national law? No. However, it became a state law in Nevada effective March 1, 2000. DASMA is continuing to monitor other states for potential legislation in this area.

Who is going to check the gate system to determine if it is in compliance with the new standard? No one at the present time. However, keep in mind two things: a) the Consumer Product Safety Commission has submitted a proposed revision to the new International Building Code where, if passed, building code officials would be inspecting gate systems for compliance where the IBC is adopted and enforced, and b) there is the potential for liability if a gate system is not installed in compliance with UL 325.

Am I required to upgrade existing installed operators to the new UL 325 standard? No. There is no retroactivity with respect to UL 325.

Can older operators that do not meet the standard be repaired? Yes. You may wish to contact your attorney or your trade association legal counsel regarding liability issues in repairing older operators that have no entrapment sensing provisions.

Can I upgrade, to the new standard, operators already installed? There are no requirements to upgrade existing operators. However, upgrading is dependent on the product itself; the operator manufacturer must be consulted on this matter.

What happens with the product that I have in stock that was purchased prior to March 1, 2000? Can I still install it? Yes. There is no recall provision in the UL standard. Products that have already been tested and listed can be installed.

What is the significance of the operator usage classifications? The classifications are intended to signify specific end use applications as defined in UL 325.

Can operators be classified under more than one of the classifications?

Yes. UL 325 requires that "A vehicular gate operator shall be permanently marked to specify all intended Classes of applications." (underline added.)

What is the difference between a primary and secondary entrapment protection device? The secondary entrapment protection device is intended as a backup feature should the primary device fail or not work properly.

Do photoelectric cells or electric edges have to be installed on all gates?

Not necessarily; these two options are among several acceptable options. Contact the operator manufacturer for acceptable protection devices to be installed on a particular gate.

Do I have to install both photoelectric cells and reversing edges as secondary devices to be in compliance with the standard? No; you do not have to put both on the gate. Either a non-contact sensor, a contact sensor or a combination thereof can be used as secondary devices.

Will an operator function if a photoelectric cell or reversing edge is not connected? This is dependent on the operator design. The operator manufacturer must be consulted on this matter.

How far away from the gate should an access device (push button, card reader, etc.) be installed? The first sentence of Section 51.8.4 f) reads, "Controls must be far enough from the gate so that the user is prevented from coming in contact with the gate while operating the controls."

If a reset switch is to be installed, where does it have to be installed? UL 325 requires that "Controls intended to be used to reset an operator after two sequential activations of the entrapment protection device or devices must be located in the line-of-sight of the gate."

Do I have to install a separate pedestrian gate? UL 325 states that if the operator is for a vehicular gate, pedestrians must use a separate entrance.

Do the new UL 325 requirements apply to both new and existing gates? UL 325 requirements will apply to all new construction of gates and existing gates that could be motorized. Older non-motorized gates may need to be altered to meet the new requirements.

Do I have to install guarding or screening on a gate? Yes. However, this applies only to horizontal sliding gates. The important fact to remember is that if a horizontal gate system is not guarded or screened in accordance with the manufacturer's instructions, it cannot be claimed to be in compliance with UL 325.

Does the 2-1/4 inch sphere test start at the bottom of the gate or is it measured from the ground up to 4 feet? UL 325 requires that "All openings of a horizontal slide gate are guarded or screened from the bottom of the gate . . ." (underline added.)

If a slide gate is on wheels and there is a 4 inch gap between the ground and the bottom of the gate, is this OK? The standard does not include provisions governing the gap between the bottom of the gate and the ground. however, the American Fence Association (AFA), DASMA and the National Ornamental & Miscellaneous Metals Association (NOMMA) are working on a joint gate construction and installation standard that will address this matter.

Do swing gates need to be guarded or screened so that a 2-1/4 inch sphere will not pass through it? No.

Is there a difference between a UL listed product, an ETL listed product, or a product listed by anyone else? Any listing by a nationally recognized testing laboratory (NRTL) that tests to the UL 325 standard is acceptable. The test laboratories are expected to use the same standard.

Where can I obtain more information on UL 325? You may contact UL directly at 847-272-8800, DASMA at 216-241-7333, or you may purchase UL 325 from Global Engineering Documents at 800-854-7179.

You can also contact DASMA by writing to: Door & Access Systems Manufacturers Association, 1300 Sumner Ave., Cleveland, Ohio 44115. The e-mail address is dasma@dasma.com.

Details of new standards for automatic gate operators presented to dealers at FENCETECH seminar

TAMPA, Fla. -- New Underwriters Laboratories (UL) standards for automatic gate operators which went into effect on March 1 were a prime topic of conversation at FENCETECH2000, as dealers scramble to figure out exactly how the standards will affect them. A panel comprised of Buck Buchanan, B&B Controls, Brian DeNault, Hy-Security Gate Operators and Joe Hetzel of the Door and Access Systems Manufacturers Association (DASMA) convened during the trade show to offer their insight.

Hetzel noted that DASMA itself does not endorse UL 325, but feels a responsibility to educate the industry on its ramifications. "There is no policing of dealers to comply with these requirements, but it makes good sense from a liability aspect to do so," he said.

The UL 325 standard is voluntary, Hetzel noted, although its provisions could carry the weight of law if they are mandated by a state, local or federal government. (Such action was recently taken by the state of Nevada.)

The standards which took effect on March 1 required substantial redesigning and retesting by gate operator manufacturers, he noted.

The primary intent of the new standards is to prevent entrapment of persons in automated gate systems, as well as preventing injuries from pinch points.

It was noted that UL 325 does not affect gate systems installed before the standards took effect; in other words, it is not retroactive.

Addressing the dealers, Buchanan noted: "Don't think this (UL 325) is just a problem for the manufacturers. If you think it is not an issue for the dealers, I hope I get your attention before some lawyer does."

Buchanan noted that for liability purposes, installers should do nothing that would imply that pedestrians are allowed through vehicular gates.

"UL 325 is not concerned about the gate contacting vehicles, only the entrapment of people," he said. Contact prevention devices are certainly still part of the overall gate system, he said, but they are not the only safety device called for.

A good point was made by DeNault, who noted that the issue of safety could give a dealer a good excuse to call on the owners of older systems and inform them that their systems should be safety upgraded to meet the new standards.

The panel distributed a set of documents which set out the terms of UL 325, and explained how they affect dealers. Among the points made were:

1. The gate operator manufacturer will state the class of each operator in multiple places.
2. Sales personnel must match the site application with the correct class of operator.
3. Primary and secondary safety devices must be provided and matched to the operator.
4. Waivers of safety or by-passing of safety devices is not an option.
5. Responsibility for U.L. safety standards does pass to the dealer-installer.
6. Warning signs must be permanently affixed to the gate panel. (It is suggested that the installing dealer take a dated photo of the gate system with the signs in

place to prove that he furnished them. As a sidenote, one dealer said that a prominent client of his had strongly objected to his taking a photo of the estate gate that had just been installed. He suggested asking permission before clicking away.)

7. It is suggested that the dealer develop an installation checklist and customer sign-off form.

8. Service/preventive maintenance contracts will be in demand by the customers, and are good for the dealers when they ensure safe and proper operation of the system.

9. U.L. is still considering establishing a training or certification program for installers, possibly with the involvement of AFA and other organizations.

10. UL 325 currently does not address what happens to older gate operators in the future.

Here are some installation instructions mandated under UL 325:

Install the operator only when:

- The operator is appropriate for the construction of the gate and the usage class of the gate;
- All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4 feet (1.2 m) above the ground to prevent a 2-1/4 inch (57.15 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position;
- All exposed pinch points are eliminated or guarded, and
- Guarding is supplied for exposed rollers.

The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening.

The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment.

Swing gates shall not open into public access areas.

The gate must be properly installed and work freely in both directions prior to the installation of the gate operator.

Do not over-tighten the operator clutch or pressure relief valve to compensate for a damaged gate.

For operators utilizing Type D protection (manual activation of the device with the unit stopping when the button is released):

- The gate operator controls must be placed so that the user has a full view of the gate area when the gate is moving;
- The required placard shall be placed adjacent to the controls;
- An automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed; and
- No other activation device shall be connected.

Controls must be far enough from the gate so that the gate system user is prevented from coming in contact with the gate while he or she is operating the controls.

Controls intended to be used to reset an operator after two sequential activations of the entrapment protection device or devices must be located in the line-of-sight of the gate.

Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.

All warning signs and placards must be installed where visible in the area of the gate.

For gate operators utilizing a non-contact sensor:

- Review instructions on the placement of non-contact sensors for each type of application;
- Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the sensor while the gate is still moving; and
- One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.

Here are some special points made by the panel which were extracted from UL 325:

- Class I and Class II operators must have an audio alarm which shall function if two sequential activations of the entrapment protection device occur.
- Class I and Class II gate operators cannot exceed a speed of one foot per second.

(Class I operators are residential vehicular gate operators intended for use in a home of one to four single family dwellings, or a garage or parking area associated with such a dwelling. Class II operators are commercial and general access vehicular operators intended for use in a commercial location or building such as multi-family housing units, hotels, garages, retail stores, or other buildings servicing the general public.)

- In most conditions, an obstruction must be sensed within a maximum of two seconds. The gate operator shall stop and reverse a minimum of two inches.
- The system must stop the gate upon sensing a second sequential obstruction, and then not operate until an intended input is received (not by a timer to close).
- Slide gates must have a protective cover from the ground up to four feet.
- Swing gates must not exert more than 40 pounds of force after initial start-up.

Other classes of operators identified in UL 325 include:

Class III - Industrial/limited access vehicular gate operator

A vehicular gate operator or system intended for use in an industrial location or building such as a factory or loading dock area or other locations not intended to service the general public.

Class IV - Restricted access vehicular gate operator

A vehicular gate operator or system intended for use in a guarded industrial location or building such as an airport security area or other restricted access location not servicing the general public, in which unauthorized access is prevented via supervision by security personnel.

It was also noted that movement is underway to develop voluntary standards for the safe design and installation of the overall gate system.

The information presented here is in no way intended nor should be relied upon as legal advice. Installing dealers must always consult with the appropriate professional advisors when undertaking an installation.