UL 608

STANDARD FOR SAFETY

Burglary Resistant Vault Doors and Modular Panels

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UL Standard for Safety for Burglary Resistant Vault Doors and Modular Panels, UL 608

Seventh Edition, Dated November 30, 2004

Summary of Topics

This revision of ANSI/UL 608 dated March 7, 2022 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated January 7, 2022.

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Standard for Burglary Resistant Vault Doors and Modular Panels

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Second Edition – January, 1982
Third Edition – July, 1982
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Sixth Edition – March, 1999

Seventh Edition

November 30, 2004

This ANSI/UL Standard for Safety consists of the Seventh Edition including revisions through March 7, 2022.

The most recent designation of ANSI/UL 608 as a Reaffirmed American National Standard (ANS) occurred on March 7, 2022. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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INTRODUCTION

1 Scope

1.1 These requirements cover vault doors and vault modular panels (for use in the construction of vault floors, walls, and ceilings) of the type intended for use in financial institutions, commercial, industrial and mercantile properties, and the like, and that are relied upon to protect the contents from burglary attack.

1.2 These requirements are intended to establish the burglary resistant rating of vault doors and modular panels according to the length of time they withstand attack by common mechanical tools, electric tools, cutting torches, or any combination of these means. The ratings based on the net working time to effect entry are as follows:

a) Class M – 1/4 hour.

b) Class 1 – 1/2 hour.

c) Class 2 – 1 hour.

d) Class 3 – 2 hours.

1.3 These requirements do not cover attacks with the burning bar (thermal lance) or explosives.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this standard.

2.1.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

2.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

2.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

2.2 Units of measurement

2.2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.3 Undated references

2.3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

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3 Glossary

3.1 For the purpose of this standard the following definitions apply.

3.2 COMMON HAND TOOLS – Chisels, punches, wrenches, screwdrivers, pliers, hammers, and sledges not exceeding the 8-pound (3.6 kg) size, and pry bars and ripping tools not exceeding 5 feet (1.52 m) in length.

3.3 CUTTING TORCH – A heavy-duty, commercially available oxy-fuel cutting torch.

3.4 ENTRY – Opening the door or making a 96-square-inch (619-cm^2) opening entirely through the door or door frame or both, including the grouted-in portion within the frame, or through the modular panel or a seam joining two or more modular panels.

3.5 FLUXING ROD – Low carbon steel or similar type material rods, such as concrete reinforcing rods, to aid in torch cutting.

3.6 HYDRAULIC TOOLS – Portable electric or manually operated jacks, wedges, and similar pressure applying devices not exceeding 100,000 pounds (444,820 N) of force.

3.7 IMPACT TOOLS – Portable electric or pneumatic impact hammers and hammer drills, not exceeding the 1 inch (25.4 mm) chuck size.

3.8 NET WORKING TIME – The time during which an attack is actively in progress on the sample, excluding the time required for test preparation, safety precautions, and delays.

3.9 96-SQUARE-INCH OPENING – A rectangular-shaped opening with the smallest dimension being 6 inches (152 mm), a circular opening 11.06 inches (281 mm) in diameter, or an isosceles right-triangle-shaped opening with a hypotenuse of 19.6 inches (497 mm).

3.10 PICKING TOOLS – Common or stranded patterns that are not designed for use against a specific model of vault door.

3.11 PORTABLE ELECTRIC DRILLS AND TOOLS – Electric hand drills accommodating drill bits not larger than 1 inch (25.4 mm) and coring drills.

3.12 POWER SAWS – Circular saws not exceeding 8 inches (203 mm) in diameter, hole saws not exceeding 12 inches (305 mm) in diameter, or reciprocating saws.

3.13 PRESSURE APPLYING DEVICES – Portable drill presses, portable drilling jigs, or other types of drill-holding mechanisms.

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CONSTRUCTION

4 Corrosion Protection

4.1 Iron and steel parts, other than bearings, and the like, shall be protected against corrosion by enameling, galvanizing, sherardizing, plating, or other means determined to be equivalent.

Exception No. 1: This requirement does not apply to parts, such as washers, screws, bolts, and the like, if corrosion of such unprotected parts would not impair the intended operation of the unit.

Exception No. 2: Parts made of stainless steel, polished or treated, if necessary, do not require additional protection against corrosion.

Exception No. 3: This requirement does not apply to reinforcing elements used to strengthen concrete and the like.

4.2 The requirement in 4.1 applies to all enclosures of sheet steel or cast iron, and to all springs and other parts upon which intended mechanical operation or construction depends. Bearing surfaces shall resist binding due to corrosion.

4.3 Metal shall not be used in combinations that cause galvanic action.

Exception: If galvanic action does not result in impaired operation of construction of the product or impaired security, this requirement does not apply.

5 Locks

5.1 Each vault door shall be provided with:

a) A combination lock classified as Group 1 or 1R complying with the Standard for Combination Locks, UL 768, or a high-security electronic lock, Type 1, complying with the requirements for high-security electronic locks; or

b) A timelock complying with the Standard for Delayed-Action Timelocks, UL 887, and a combination lock classified as Group 1, 1R, or 2M, complying with UL 768; or

c) A timelock complying with UL 887, and a high-security electronic lock, Type 1, complying with the requirements for high-security electronic locks.

Exception: The door is not required to be shipped with the timelock mounted to it when the door is fully prepared for the mounting of the timelock and the timelock is shipped with the door in separate packaging. A prominent marking shall be attached to the door informing the installer of the door that the timelock shall be installed in order to provide the intended locking security. Instructions for the mounting of the timelock shall be shipped with the door and the timelock.

PERFORMANCE

6 General

6.1 A single sample that is fully representative of a series of vault doors of similar design, size and construction, shall be submitted for test.

6.2 At least two or more modular vault panels shall be submitted to represent the specified design of the vault and assembled to represent all seams used to construct the floor, walls and ceiling of the vault.

6.3 The selection of test samples shall be determined by a study of detailed dimensioned drawings of the construction and schedule of sizes, and specifications of the steel and drill-resistant and torch-resistant metal or materials shall be furnished.

6.4 The door and seam clearances of the test sample shall represent the manufacturer's maximum production tolerances.

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7 Test Equipment

7.1 The test equipment shall include any common hand tools, picking tools, mechanical or portable electric tools, grinding points carbide drills, pressure applying devices or mechanisms, abrasive cutting wheels, power saws, coring tools, impact tools, fluxing rods, and oxy-fuel gas cutting torches.

7.2 The quantity of gas consumed (combined total oxygen and fuel gas) in any one test shall be limited as follows:

a) Class M and 1 – 2000 ft^3 (56.6 m^3).

b) Class 2 – 4000 ft^3 (113.3 m^3).

c) Class 3 – 8000 ft^3 (226.5 m^3).

8 Attack Tests

8.1 General

8.1.1 The testing party, consisting of two skilled operators, may select any or all of the methods of attack and may sustain each attack for the full allotted time. The product shall resist the best method or combination of methods applied to a given point or area for the net working time specified.

8.2 Lock mechanism

8.2.1 An attempt is to be made to penetrate through the door to the lock box, lug, carrying bar, or other parts of the mechanism, then to release the boltwork by punching, prying, picking, or cutting.

8.3 Cutting an opening

8.3.1 An attempt is to be made to cut an opening 96 square-inches (619 cm^2) entirely through the door, the door frame, vestibule, a modular panel, or at a seam joining two or more modular panels.

8.4 Cutting locking bolts

8.4.1 An attempt is to be made to cut as many bolts as necessary to open the door.

MARKING

9 Details

9.1 Each vault door or modular panel shall be legibly and permanently marked at a location that is visible after installation with the following information:

a) Manufacturer's or private labeler's name or identifying symbol.

b) Date of manufacture by week, month or quarter, and year (any of which may be abbreviated or in an established or otherwise traceable code or serial number).

c) Model number or equivalent.

9.2 If a manufacturer produces vault doors or modular panels at more than one factory, each door shall have a distinctive marking to identify it as the product of a particular factory.

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