From UL 752 Edition 11 to Edition 12: What Changed and Why It Matters for Today's Security-Focused Facilities

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Background

In October 2023, Underwriters Laboratory (UL) released the 12th edition of UL 752, representing a significant and meaningful update in ballistic-resistance standards. For architects, building owners, and security stakeholders, this transition matters not only because terminology is changing, but because the standard is now aligned far more closely with real-world threat conditions.

For years, the familiar 'Level 1 through Level 10' Levels in Edition 11 suggested a simple escalation of protection—higher levels meant stronger materials. In practice, however, the hierarchy masked important differences in weapon type, number of shots, ammunition characteristics, and ballistic performance which meant that higher numeric levels did not necessarily provide protection for the lower numeric numbers.

Edition 12 replaces the old levels with clear, threat-specific designations and strengthens the rigor and consistency of ballistic testing. As organizations reassess facility vulnerability and protective design strategies, this new edition provides a more reliable foundation for specifying ballistic glazing, wall systems, doors, and manufactured assemblies.

A Shift From Levels to Threat-Specific Designations

The most visible and impactful change is the move from Level 1–10 numbering to threat-based categories: HG (Handgun), RF (Rifle), and SG (Shotgun). Within each category, Edition 12 defines individual threat designations based on exact ammunition type, bullet composition, muzzle velocity, kinetic energy, and shot count. This clarity eliminates the ambiguity under the old system, where a single "level" could mask differences in weapon or ammunition protection.

This shift makes the standard easier to use during assessment and design. Rather than matching a 'Level,' stakeholders can now match specific, credible threats identified in the facility's risk assessment.

Edition 11 vs. Edition 12: What Changed?

Key Differences at a Glance

UL752 Edition 11 (Old)	UL752 Edition 12 (New)
Level-based system (1-10)	Threat-based system (HG, RF, SG)
Implied hierarchy (higher = stronger)	No hierarchy (each threat type stands alone)
Limited clarity on threat type by using general weapon categories	Clear threat type (Handgun / Rifle / Shotgun)
Variability in testing protocols	Standardized, more rigorous testing
Easier to misinterpret in specifications	Easier to match to real-world threats

For example, the *Edition 11:* "UL 752 Level 3" threat is defined as "protection against hand guns of super power, such as the .44 Magnum, and the like, with muzzle energy of 971 – 1175 foot-pounds (1317 – 1593 J)"—a description open to interpretation. By contrast, UL-HG-C in *Edition 12* clearly defines .44 Magnum threat details including bullet type, grain weight, muzzle velocity, kinetic energy, and shot count.

A Deeper Look at the New Categories

Handgun Threats (HG)

Edition 12 includes a broader range of handgun threats, from the foundational HG-A (9mm) up through higher-energy handgun rounds. It also introduces new higher-velocity 9mm testing (HG-D) and updates the .44 Magnum threat (HG-C) from an older Semi-Wadcutter Gas Checked (SWCGC) round to a modern Jacketed Hollow Point (JHP) configuration.

Rifle Threats (RF)

Rifle threats have been reorganized and expanded with significantly more nuance. Edition 12 now includes: .243 Winchester PSP (RF-C), .270 Winchester PSP (RF-D), 5.56mm M855 (RF-F), and 7.62×39mm Type 56 MSC (RF-G). This expansion clarifies rifle performance expectations as facilities face a wider variety of rifle threats in both commercial and government contexts. This category augments Levels 4, 5, 7, 8, and others from Edition 11.

Shotgun Threats (SG)

Shotgun threats receive a dedicated classification for the first time. Previously buried in supplemental sections, they now stand alongside handgun and rifle categories, making them easier to specify.

Why This Matters: Benefits for Architects, Owners, and Security Teams

For Architects and Designers

Edition 12 allows architects and designers to more easily match specification language with threat assessments and protection requirements.

For Building Owners

Certification documents become easier to interpret and compare. Owners can request Edition 12 test reports, understand the meaning of each designation, and align purchases with documented threat profiles. This translates into more reliable product performance and easier verification during procurement.

For Security Consultants & Agencies

Edition 12 creates a universal, threat-specific language for coordinating with design teams and owners—especially useful during risk assessments and concept design.

For Manufacturers

Stricter sample requirements, documented weak-point coverage, and more consistent environmental conditions create more reliable performance benchmarks—good for manufacturers committed to high-quality, repeatable protection.

Testing and Certification: More Rigor, Greater Consistency

Edition 12 tightens testing parameters, improves the accuracy of test results, and enhances consistency across testing laboratories.

Velocity Windows

Edition 11 allowed up to +10% velocity variance (e.g., M80 at 2,750–3,025 fps). Edition 12 requires ±30 fps around the reference velocity (e.g., RF-H M80 ≈ 2,750–2,810 fps). This narrower window improves consistency between labs and manufacturers.

Witness Panels

Edition 12 adopts ASTM E3112, replacing the older corrugated-cardboard method. Witness materials differ for opaque vs. transparent armor, improving the accuracy of penetration assessments.

Test Range Setup

Edition 12 references ASTM E3062, specifying requirements for temperature, humidity, velocity measurement, and muzzle-to-target distances. Rifle testing is now conducted at 25 feet rather than the 15 feet previously used.

Environmental Conditioning

Edition 12 clarifies conditioning ranges and which samples require temperature-based conditioning. All non-ambient tests must condition for at least three hours; steel assemblies are tested at ambient only.

Assemblies

Edition 12 improves directions on how to test assemblies, primarily on how to address weak areas. This is particularly useful on products that move (i.e., doors or windows).

Transition Implications: What Stakeholders Should Do Now

During the transition period, both Edition 11 and Edition 12 certifications remain active. Take extra care to ensure clarity in documentation and procurement: update architectural specifications to reference Edition 12 terminology, request Edition 12 documentation from manufacturers, verify whether proposed products truly match a facility's threat profile, and reassess facility ballistic-threat assumptions using the Edition 12 categories. It is important to remember that it will take time for manufacturers to have their products tested to the new standard; specifiers should confirm with their regular manufacturers whether their products have been tested to Edition 12.

Simplified Comparison of Edition 11 Levels to Edition 12 Threats

Edition 11 Levels	Typical Threat	Edition 12 Designation	Threat Type
Level 1 / 6	9mm FMJ	UL-HG-A / UL-HG-D	Handgun
Level 2	.357 Magnum	UL-HG-B	Handgun
Level 3	.44 Magnum	UL-HG-C	Handgun

Levels 4 / 5 / 8	.30-06 Rifle / M80	UL-RF-A / UL-RF-B / UL-RF-H	.30 cal Rifle
Level 7	5.56mm M193	UL-RF-E	5.56mm Rifle
Levels 9 / 10	.30 cal M2AP / .50 cal	UL-RF-I / UL-RF-J	Rifle (AP / High-Energy)
Supplemental	12-gauge Shotgun	UL-SG	Shotgun

(Note: For precise ammunition specifications, consult UL 752 Edition 12.)

Conclusion

UL 752 Edition 12 represents an important step forward, better aligned with modern threats, more precise in its testing, and more transparent in how ballistic protection should be communicated across design and procurement teams. For owners and architects, the shift offers an opportunity to improve both design clarity and protective performance. As facilities evolve and threats become more diverse, adopting Edition 12 now positions organizations to make smarter, better-documented security decisions for years to come.

Appendix A: Detailed Comparison of Edition 11 and Edition 12

- Velocity
  - Edition 11 specified up to 110% of the reference velocity,
    - E.g., Level 8 M80 @ 2,750 fps + 275 fps.
    - Velocity window = 2,750 fps – 3,025 fps
  - Edition 12 specifies +/- 30 fps
    - E.g., Designation RF-H M80 = 2,780 fps +/- 30 fps.
    - Velocity window = 2,750 fps – 2,810 fps.
- Witness panel
  - Edition 11 specified 1/8” corrugated cardboard @ 18”
  - Edition 12 specifies ASTM E3112
    - Opaque armor - .020” 2024-T3 Al. witness @ 6”
    - Transparent armor - .001” Al. foil @6”
- Muzzle to target
  - Edition 11 specified 15’ for all calibers
  - Edition 12 specifies E3062 for the test range setup to include temperature, humidity, velocity acquisition, and muzzle-to-target distance.
    - Handgun – 15’
    - Rifle – 25’
- Sample conditioning
  - Edition 11
    - Ambient – 68°F
    - Indoor cool – 55°F
    - Indoor warm – 95°F
    - Outdoor cold – -26°F/68°F
    - Outdoor hot – 120°F
  - Edition 12
    - Ambient – 68°F
    - Low Temp - Outdoor – -26°F
    - High Temp - Outdoor – 120°F
    - Cooled Strike Face – -26°F/68°F
    - Heated Strike Face – 120°F/68°F
    - Note: All samples minus Ambient (12 hours) must condition for a minimum of 3, not to exceed 4 hours
  - Note: Steel materials and assemblies are only tested at Ambient.

- Threats
    - Handgun:
        - Added a higher velocity (HG-D) 9mm test
        - Updated (HG-C) .44 Mag from SWCGC to JHP
    - Rifle:
        - Added .243 Winchester PSP (RF-C)
        - Added .270 Winchester PSP (RF-D)
        - Added 5.56 x 45mm M855 (RF-F)
        - Added 7.62 x 39mm Type 56 Mild Steel Core (MSC) (RF-G)
- Note: There is no hierarchy in this list; ballistic failure is dependent on the projectile/substrate interaction. For example, A ¼" AR500 steel plate might stop a 5.56mm M855 but will most likely fail with a 5.56mm M193. The opposite is true for PE; the M855 would be more likely to fail where an M193 would pass.
- Assemblies:
    - Better direction on structural weak areas.
    - Mandated drawings sent from manufacturers to the lab for testing.