



Safe-T-Punch™

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CASE STUDY 4

Safe-T-Punch™ and UNECE R107 Revision 10

Forward Conformity with Next-Generation Emergency Exit Requirements

Background

UNECE Regulation R107 governs emergency exits and escape hatches for buses and coaches operating under whole-vehicle type approval regimes. Historically, the regulation permitted a wide range of emergency window solutions, including portable hammers, with limited description of device performance, readiness, or reliability.

In recognition of recurring failures of emergency exits in real-world incidents, UNECE initiated a revision process to strengthen requirements for emergency window breakage certainty, resulting in UNECE R107 Revision 10, which enters into force internationally in September 2026.

Revision 10 represents a significant shift away from loosely defined tools toward purpose-designed, permanently installed, certainty-based devices.

Regulatory Evolution in R107 Rev.10

UNECE R107 Rev.10 introduces, for the first time, an explicit technical description of the emergency window glass-breakage device, including requirements relating to:

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- Permanent availability at the point of use
- Prevention of unintended operation or tampering
- Single, deliberate unlocking action prior to activation
- Clear visibility to passengers
- Standardised instructional pictograms
- No reliance on external monitoring for readiness

The regulatory intent is clear:

emergency exits must work with certainty under real emergency conditions, not merely comply in theory.

Safe-T-Punch™ Design Alignment

Safe-T-Punch™ was conceived and engineered decades before Revision 10 specifically to address known emergency exit failure modes. Its core design characteristics align directly with the Rev.10 requirements:

Permanent Installation

- Safe-T-Punch™ is permanently fixed directly to the emergency window glass, ensuring availability at the point of use.
- There are no loose components, storage brackets, or removable tools.

Tamper Prevention Without a Cover

Revision 10 allows either:

- a protective cover, or
- a design that prevents unintended operation.

Safe-T-Punch™ achieves this through:

- Permanent mounting to the glass (cannot be removed or misused)
- A refittable safety tag that must be intentionally removed prior to activation
- No possibility of accidental activation during normal operation

As a result, a protective cover is not required, while the device remains fully visible to passengers at all times.

Single Deliberate Action

- Once the safety tag is removed, the device is activated by intuitive punching action.
- No tools, strength, or complex instructions are required.

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Instructional Clarity

- Safe-T-Punch™ is supported by standardised, language-free pictographic instructions, consistent with international best practice and suitable for multi-lingual passenger environments.
- This approach is compatible with UNECE R107 Rev.10 and national regulations that require “clear instructions” without mandating text-based language.

Readiness Without Monitoring

- The device requires no inspection, calibration, batteries, or sensors to confirm readiness.
- Its mechanical certainty ensures it is always operational when needed, satisfying the Rev.10 requirement that the device does not depend on external monitoring systems.

Evidence Base Supporting Conformity

Safe-T-Punch™’s alignment with R107 Rev.10 is not theoretical. It is supported by:

- Independent testing (UKAS-accredited and national standards bodies)
- UNECE R107 homologation under earlier revisions
- OEM acceptance through whole-vehicle type approval processes
- Operational deployment across public transport fleets
- Regulatory recognition in occupational safety frameworks (e.g. WorkSafeBC)

These elements collectively demonstrate that Safe-T-Punch™ already operates at the level of certainty now formalised in Revision 10.

Outcome

-  Safe-T-Punch™ meets or exceeds the functional and design intent of UNECE R107 Rev.10
-  No redesign or conceptual change is required to align with the new revision
-  The device represents a pre-existing certainty solution now explicitly recognised by regulation
-  Revision 10 validates Safe-T-Punch™’s design philosophy rather than driving it