

Proposal for an amendment of UNR100 – new requirements on thermal propagation

GRSP, 75th session, 28 May 2024
Prepared by SIG TP EVS

1. Objective and principles

To provide robust procedures to assess thermal propagation performance that enable harmonized implementation (among CPs to the 58 Agreement and other nations interested)

Principles

- Improve implementation of R100-03 Thermal propagation requirements
- No intention to strengthen/reduce the stringency level from R100-03
- Maintain framework of REESS type approval
- To be reasonable, effective and practicable
- Remain focusing on occupant protection

2. Rationale

- Thermal propagation test procedure - currently not adopted as a requirement
- Instead - manufacturers must demonstrate vehicle's ability to minimize the risk associated with single cell thermal runaway
- Significant divergence in the application of the existing documentation requirement by different technical services under the type approval system
- Improve regulatory certainty for economic operators

3. Key elements (1)

- Proposal from several Contracting parties participating actively in SIG
- Builds on GTR EVS Phase 2 discussion, followed by 3 meetings of experts in the framework of SIG TP EVS (Amsterdam, Stockholm, Aachen)
- Introduces the default initiation method → fast external heating
- Alternative methods, e.g. localized internal heater, nail penetration, laser-based trigger, may be used

3. Key elements (2)

- Tests conducted either with the vehicle or the complete REESS or with REESS subsystem(s)
- In case the component-based test - thermal propagation test shall be complemented by additional tests
- Subsystem(s) testing possible provided it is representative of the performance of the complete REESS with respect to its safety performance under the same conditions

3. Key elements (3)

- Risk management analysis remains the core of the proposal – from the initial assessment to an alternative method of performance assessment based on the documentation
- Only a 5-minute requirement retained in the physical test
- New requirements on confidentiality of information provisions regarding the protection of intellectual property

3. Key elements (4)

- Few exceptions
 - Vehicles with total electric energy of 2 kWh - only the risk management analysis
 - Existing types meeting a signal advance warning activation requirement allowing egress or 5 minutes prior to the presence of a hazardous situation inside the passenger compartment caused by thermal propagation

3. Other issues

✓ Transitional provisions

