



Summary of Proposed NHTSA Federal Motor Vehicle Safety Standard No. 305a for Electric-Powered Vehicles: Electric Powertrain Integrity Global Technical Regulation No.

20

Docket Number: NHTSA-2024-0012

Agency: National Highway Traffic Safety Administration, Department of Transportation

Action: Notice of Proposed Rulemaking

Comment Deadline: June 14, 2024

Federal Register Page: [Here](#)

Resources:

- [NPRM of FMVSS No. 305a](#)
- [FMVSS No. 305](#) (49 CFR § 571.305)
- [Global Technical Regulation No. 20: “Electric Vehicle Safety”](#)

Overview:

NHTSA has proposed changes to its regulation of electric vehicle safety under Federal Motor Vehicle Safety Standards (FMVSS) through this proposed rule, which is framed by the agency as an amendment to FMVSS No. 305 that achieves two goals. NHTSA is expanding the applicability to vehicles with over 10,000 lbs GVWR, as well as harmonizing federal regulations with Global Technical Regulation (GTR) No. 20, “Electric Vehicle Safety.” One of the proposed new requirements is meant to ensure that EV batteries operate within manufacturer-specified functional range. NHTSA does not foresee any notable compliance costs associated with the proposal due to the voluntary implementation of GTR No. 20 by domestic manufacturers.

Topline changes from FMVSS No. 305:

- The applicability of the FMVSS is expanded to vehicles with GVWR greater than 10,000 lb, though only school buses will be subject to post-crash requirements.
- Post-crash requirements apply to light vehicles and heavy school buses and include:
 - Electric shock protection (with the following four compliance pathways):
 - Low voltage
 - Electrical isolation
 - Protective barrier
 - Low energy for capacitors
 - REESS retention (enhanced from No. 305 to align with GTR)
 - Electrolyte leakage (enhanced from No. 305 to align with GTR)
- Comprehensive performance requirements and risk mitigation strategies for the REESS, applicable to all vehicles

- Notably, these requirements are meant to “ensure the REESS operations are within the manufacturer-specified functional range,” presumably related to battery health and range per single charge.
- Fire and explosions are now prohibited for one hour post crash test
- “Documentation measures” requirements: a list of information provided by manufacturers demonstrating they’ve considered, assessed, and mitigated identified risks related to:
 - Safety risk mitigation associated with charging during low temperature
 - Thermal propagation risks during single-cell thermal runaways
 - Warnings for malfunctions of vehicle controls that manage REESS safe operation
- Vehicle manufacturers are required to submit emergency response guides (ERGs) and rescue sheets for each vehicle make, model, and model year, to provide information to first and second responders on the safe handling of EVs in emergencies and towing operations.
- NHTSA “believes there are no notable costs associated with this NPRM” as it “closely mirrors... GTR No. 20, which have been voluntarily implemented by manufacturers in this country.”