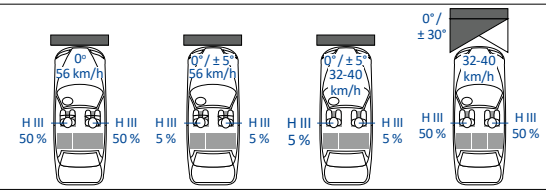
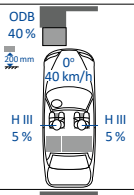
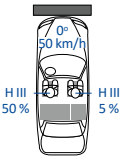
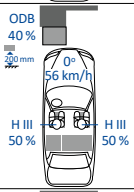
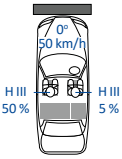
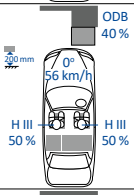
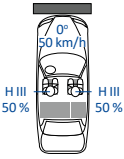
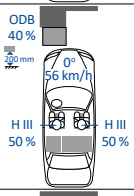
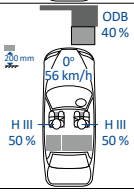
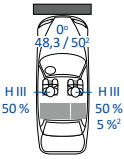
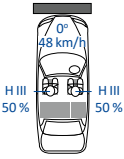
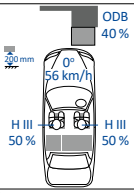
Rules and Regulations on Occupant Protection

	Full Width Frontal	Offset Frontal
USA	FMVSS 208 	FMVSS 208 
Europe	UN R137[1] 	UN R94 
Japan	Art. 18 	Art 18 
China	GB 11551-2014 	GB/T 20913-2007 
India		AIS-098 
South Korea	KMVSS 102-3 	
Australia	ADR 69/00 	ADR 73/00 

SafetyWissen by carhs

[1] Mandatory as part of the EU type approval for new types from July 6, 2022, for new registrations from July 7, 2024.
[2] From September 2020

FMVSS 305: Safety Requirements for Electric Vehicles

Scope:

Cars, busses, trucks with a GVWR of 4536 kg or less that use electrical components with working voltages higher than 60 volts direct current (VDC) or 30 volts alternating current (VAC), and whose speed attainable is more than 40 km/h.

Post-crash Requirements:

Under the test conditions described below (impact test and subsequent static rollover)

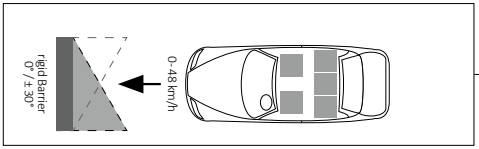
- max. 5 litres of electrolyte may spill from the batteries,
- there shall be no evidence of electrolyte leakage into the passenger compartments,
- all components of the electric energy storage / conversion system must be anchored to the vehicle,
- no battery system component that is located outside the passenger compartment shall enter the passenger compartment,
- each HV source in the vehicle must meet one of the 3 following **electrical safety requirements**
  - (1) **electrical isolation** must be greater than or equal to:
    - 500 ohms/V for an AC HV source,
    - 100 ohms/V for an AC HV source if it is conductively connected to a DC HV source, but only if the AC HV source meets the physical barrier protection requirements specified in the first 3 sub-items of (3)
    - 100 ohms/V for all DC HV sources,
  - (2) the **voltage level** of the HV source (Vb, V1, V2) must be ≤ 30 VAC for AC components or 60 VDC for DC components.
  - (3) **physical barrier protection** against electric shock shall be demonstrated by meeting the following conditions:
    - the HV source meets protection degree IPXXB
    - resistance between exposed conductive parts of the electrical protection barrier (EPB) of the HV source and the electrical chassis is < 0.1 ohms
    - resistance between an exposed conductive part of the EPB of the HV source and any other simultaneously reachable exposed conductive parts of EPBs within 2.5 meters of it must be < 0.2 ohms
    - voltage between exposed conductive parts of the EPB of the HV source and the electrical chassis is ≤ 30 VAC or 60 VDC
    - voltage between an exposed conductive part of the EPB of the HV source and any other simultaneously reachable exposed conductive parts of EPBs within 2.5 meters of it must be ≤ 30 VAC or 60 VDC

Test Conditions:

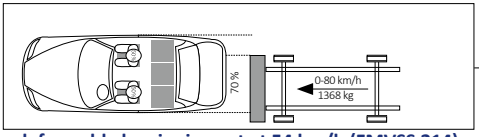
Docket No. NHTSA-2019-0009

TP-305-01

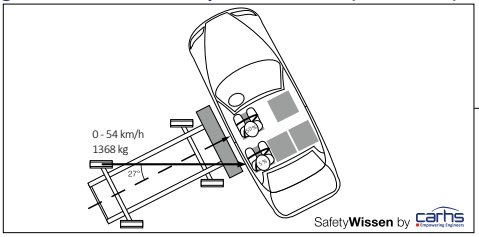
Frontal impact against a rigid barrier at 48 km/h



Rear moving barrier impact at 80 km/h (FMVSS 301)



Side moving deformable barrier impact at 54 km/h (FMVSS 214)



Post-impact test static rollover in 90 degree steps