Informal document GRSP-63-21 (63rd GRSP, 14 - 18 May 2018, agenda item 26 (a))

# Harmonization of Crash Regulations in Korea

14-18 May 2018

Republic of Korea





### **Purpose**

#### Harmonization with UN GTR and/or UN Regulations

- Occupant Protection
  - KMVSS article 102 is harmonized with UN Regulations (R94, R95, R135 and R137)
- Fuel System Integrity
  - KMVSS article 91 is harmonized with UN Regulations
     (UN R94, 95, 134, 135 and 137) about passenger vehicles
  - Side impact test, rear moving barrier test, and static rollover test are maintained

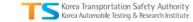




### **Timeline**

- Notice for Proposed of Rule Making
  - 26 April 2018 25 June 2018
- Implementation of the Amended Regulations
  - New types: 1 September 2020
  - All new vehicles: [31 December 2021]





#### Full Width Frontal Collision Test

	Current	NPRM
Scope	Passenger vehicle	<ul> <li>Passenger vehicle not exceeding</li> <li>3.5 ton</li> </ul>
Test Procedure	<ul> <li>Fixed rigid barrier</li> <li>Speed: 48 km/h</li> <li>Dummies: Driver &amp; Passenger (H3 50%ile M)</li> </ul>	<ul> <li>Fixed rigid barrier</li> <li>Speed: 50 km/h</li> <li>Dummies: Driver (H3 50%ile M), Passenger (H3 5%ile F)</li> </ul>
Requirements	Injury criteria	<ul> <li>Injury criteria, steering wheel displacement, door opening during/after impact, fuel leakage</li> <li>→ Harmonized with UN R 137</li> </ul>

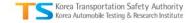




#### Offset Frontal Collision Test

	Current	NPRM
Scope	• None	<ul> <li>Passenger vehicle not exceeding</li> <li>2.5 ton</li> </ul>
Test Procedure	• None	<ul> <li>Deformable barrier(40% offset)</li> <li>Speed: 56 km/h</li> <li>Dummies: Driver &amp; Passenger (50%ile H3 M)</li> </ul>
Requirements	• None	<ul> <li>Injury criteria, steering wheel displacement, door opening during/after impact, fuel leakage</li> <li>→ Harmonized with UN R 94</li> </ul>

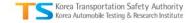




#### Side Impact Test

	Current	NPRM
Scope	<ul> <li>Passenger vehicle</li> </ul>	<ul> <li>Passenger vehicle and truck not exceeding 3.5 ton</li> </ul>
Test Procedure	<ul> <li>Moving deformable barrier (MDB, 950kg)</li> <li>Speed: 50 km/h</li> <li>Dummy: Driver (ES2)</li> </ul>	<ul> <li>Moving deformable barrier (MDB, 950kg)</li> <li>Speed: 50 km/h</li> <li>Dummy: Driver (ES2)</li> </ul>
Requirements	<ul> <li>Injury criteria, door opening during/after impact, fuel leakage</li> </ul>	<ul> <li>Injury criteria, door opening during/after impact, fuel leakage</li> <li>→ Harmonized with UN R 95</li> </ul>

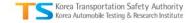




#### Pole Side Impact Test

	Current	NPRM
Scope	• None	<ul> <li>Passenger vehicle and truck not exceeding 3.5 ton</li> </ul>
Test Procedure	• None	<ul> <li>Fixed rigid pole</li> <li>Speed: 32 km/h (75 degree angle)</li> <li>Dummies: Driver (WorldSID 50%ile M)</li> </ul>
Requirements	• None	<ul> <li>Injury criteria, door opening during/after impact, fuel leakage</li> <li>→ Harmonized with GTR 14 and UN R 135</li> </ul>



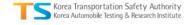


# **Fuel System Integrity (article 91)**

#### • Liquid Fuel Vehicle

	Current	NPRM
Scope	<ul> <li>Passenger vehicle and bus not exceeding 4.5 ton</li> </ul>	<ul> <li>Passenger vehicle</li> <li>(Bus not exceeding 4.5 ton: Maintain current requirements)</li> </ul>
Test Procedure	<ul> <li>Full width frontal collision test (48 km/h) with article 91</li> </ul>	<ul> <li>Revised tests: Harmonized 3 type crash tests with UN Regulations</li> <li>Full width frontal collision test</li> <li>Offset frontal collision test</li> <li>Pole side impact test</li> </ul>
	<ul> <li>Side impact test (50 km/h, 950 kg) with article 102</li> <li>Rear moving barrier impact test (48 km/h, 1,805 kg) with article 91</li> <li>Static rollover test with article 91</li> </ul>	Maintain current tests: Side impact test, rear moving barrier test, and static rollover test



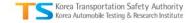


# Fuel System Integrity (article 91)

#### Hydrogen and Fuel Cell Vehicle

	Current	NPRM
Scope	<ul> <li>Passenger vehicle and bus not exceeding 4.5 ton</li> </ul>	<ul> <li>Passenger vehicle</li> <li>(Bus not exceeding 4.5 ton: Maintain current requirements)</li> </ul>
Test Procedure	<ul> <li>Full width frontal collision test (48 km/h) with article 91</li> </ul>	<ul> <li>Revised tests: Harmonized 2 type crash tests with UN Regulations</li> <li>Offset frontal collision test</li> <li>Pole side impact test</li> </ul>
	<ul> <li>Side impact test (50 km/h, 950 kg) with article 102</li> <li>Rear moving barrier impact test (48 km/h, 1,805kg) with article 91</li> </ul>	Maintain current tests: Side impact test, rear moving barrier test





# **Fuel System Integrity (article 91)**

#### • Electric Vehicle

	Current	NPRM
Scope	<ul> <li>Passenger vehicle and bus not exceeding 4.5 ton</li> </ul>	<ul> <li>Passenger vehicle</li> <li>(Bus not exceeding 4.5 ton: Maintain current requirements)</li> </ul>
Test Procedure	<ul> <li>Full width frontal collision test (48km/h) with article 91</li> </ul>	<ul> <li>Revised tests: Harmonized 2 type crash tests with UN Regulations</li> <li>Full width frontal collision test</li> <li>Offset frontal collision test</li> </ul>
	<ul> <li>Side impact test with article 102</li> <li>Rear moving barrier impact test (48km/h, 1,805kg) with article 91</li> <li>Static rollover test with article 91</li> </ul>	<ul> <li>Maintain current tests: Side impact test, rear moving barrier test, and static rollover test</li> </ul>



