2014 KNCAP Updated Status

Korea Ministry of Land, Infrastructure and Transport
Policy goals: Reduction of traffic accident fatalities by 30% during the period 2013~2017
Korean New Car Assessment Program (KNCAP)

Main Purpose of NCAP
- Promote the development of safer vehicles to automobile manufacturers
- Inform car buyers of vehicles’ comparative safety rating

Korean NCAP
- Since 1999
- Based on the law

<Results announcement>
- Publish booklet (Korean only)
- www.car.go.kr/kncap (website)
- m.car.go.kr/kncap (mobile)
### Progress of KNCAP

- **9 Items, total tested vehicles by 2013, 118 Vehicles:** Sedan 112, Bus 4, Small Truck 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Full frontal impact</th>
<th>Side impact</th>
<th>Dynamic rollover</th>
<th>Whiplash(08~)</th>
<th>H/Rest(05~)</th>
<th>Pedestrian: Head(07~)</th>
<th>Head &amp; Leg(08~)</th>
<th>Offset frontal</th>
<th>Pole side impact</th>
<th>Active safety sys.</th>
<th>Overall Rating</th>
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**Effects of KNCCAP: Full Frontal Impact Test**

- **Full Frontal Impact Test**
  - Impact Speed: 56 km/h
  - Driver: 50%ile Male
  - Passenger: 50%ile Male (~2012)
    - 5%ile Female (~2013)

- **Average Probability of Injury (AIS 4+)**
  - Average for first 3 years (1999-2001) vs. Average for recent 3 years (2010-2012)
  - Head injury: 12.2% vs. 4.7%
  - Chest injury: 10.8% vs. 11.0%
  - Combined injuries: 21.6% vs. 15.1%

※ Average for first 3 years (1999-2001) vs. Average for recent 3 years (2010-2012)
Side Impact Test

- Moving Barrier: 950 kg
- Impact Speed: 55 km/h
- Driver: 50%ile EuroSID II

Average Probability of Injury (AIS 3+)

Comparison of initial data and recent data

- Combined injuries: 11.3% ⇒ 3.0%
Effects of KNCAP: Pole Side Impact Test

- Impact Speed: 29 km/h
- Impact Angle: 90 degree
- Driver: 50%ile EuroSID II

Comparison of test data (AIS3+)

- Probability of combined injuries
  - 2009: 95.6% (No vehicles have curtain airbag)
  - 2010+: ≥10% (all vehicles with curtain airbag)
### KNCAP Roadmap (2014-2019)

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- AEBS: Advanced Emergency Braking System
- V2X: Vehicle to Everything
- DDS: Driver Distraction System
- DADSS: Driver Attention Detection System
- e-Call: Emergency Call System
Update Test Protocols (Current vs. Future)

Full Frontal Impact
- Test vehicle is crashed to the rigid barrier with 56 km/h velocity
- 50%ile male dummy (driver seat) and 5%ile female dummy (passenger seat)
- Evaluate passenger injuries (for example head, chest and upper legs)

Offset Impact
- Test vehicle is crashed to the 40% offset barrier with 64 km/h velocity
- 50%ile male dummies (driver and passenger seat)
- Evaluate passenger injuries (for example head, chest, upper and lower legs)
Update Test Protocols (Current vs. Future)

**Side Impact**
- The movable barrier crashes to test vehicle with 55 km/h velocity
- 50%ile EuroSID II dummy (driver seat)
- Evaluate passenger injuries (for example head, chest and pelvis).

**Pole Side Impact**
- Impact speed: 29 km/h
- 50%ile EuroSID II dummy (driver seat)
- Evaluate passenger head injury
### Update Test Protocols (Current vs. Future)

**Whiplash**
- This test is rear crash using sled equipment
- Test velocity is 16 km/h and dummy is BioRID II

**Pedestrian Protection**
- Head and leg form are impacted on vehicle hood and bumper with 40 km/h velocity
- Evaluate head and leg injuries

Add 2nd Row Seat Dynamic Tests

Active Hood or Pedestrian Airbag Test if avail.
Overall Rating Evaluation Procedures

<table>
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<th>Category</th>
<th>Weighting factor (%)</th>
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<td>Vehicle Crash Safety</td>
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<td>Pedestrian Protection</td>
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<td>Rollover prevention and Braking performance</td>
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</table>
New Overall Rating Scoring Display System

Overall Rating

Class

5 4 3 2 1

50 74.1 77.1 80.1 83.1 100

1st Class

Category

Passive Safety  Pedestrian  Driving Stability  Active Safety

93.8% (63.0점)  51.2% (12.0점)  90.0% (9.0점)  0.0점
Thank you for your attention!

www.car.go.kr/kncap (website)
m.car.go.kr/kncap (mobile)