

Recall System & Latest Issue in Korea

(Defect investigation on panoramic sunroof)

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I **MOLIT, Motor Vehicle Policy Bureau**

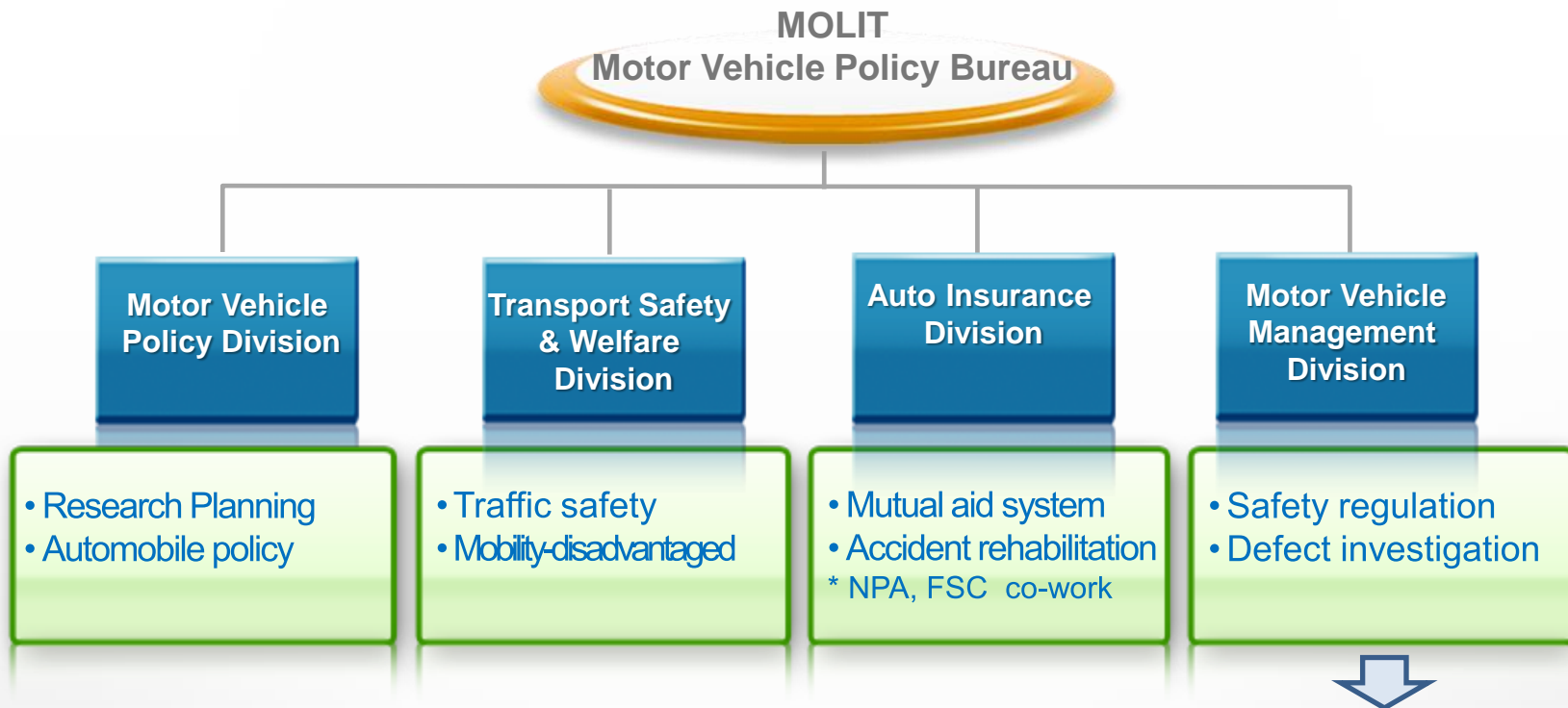
MOLIT is with you for your happiness



I. MOLIT, Motor Vehicle Policy Bureau

◆ Motor Vehicle Policy Bureau is part of MOLIT

◆ Motor Vehicle Policy Bureau has 4 Divisions



❖ **KATRI (Korea Automobile Testing & Research Institute)**
: Recall investigation under the supervision of the Motor Vehicle Management Division



Recall System in Korea

Your safety is our priority



II . Recall System in Korea

- **When sold automobiles are self-certified by the manufacturer**
 - **Self-Certification Compliance Investigation**
 - : confirms whether related regulations are observed
 - **Safety Defect Investigation**
 - : investigates whether safety-threatening defects are present
- **When a defect fails to observe standards or threatens safety**

Owners of the vehicle in question are notified and the vehicle is subjected to repair, exchange or refund

< Related Regulations >

- Article 30-3 of the Automobile Management Act
(Suspension of production or sale of automobiles or automotive parts)
- Article 31 of the Automobile Management Act
(Correction of manufacturing defects)

1. Self-Certification Compliance Investigation

Compliance test procedure

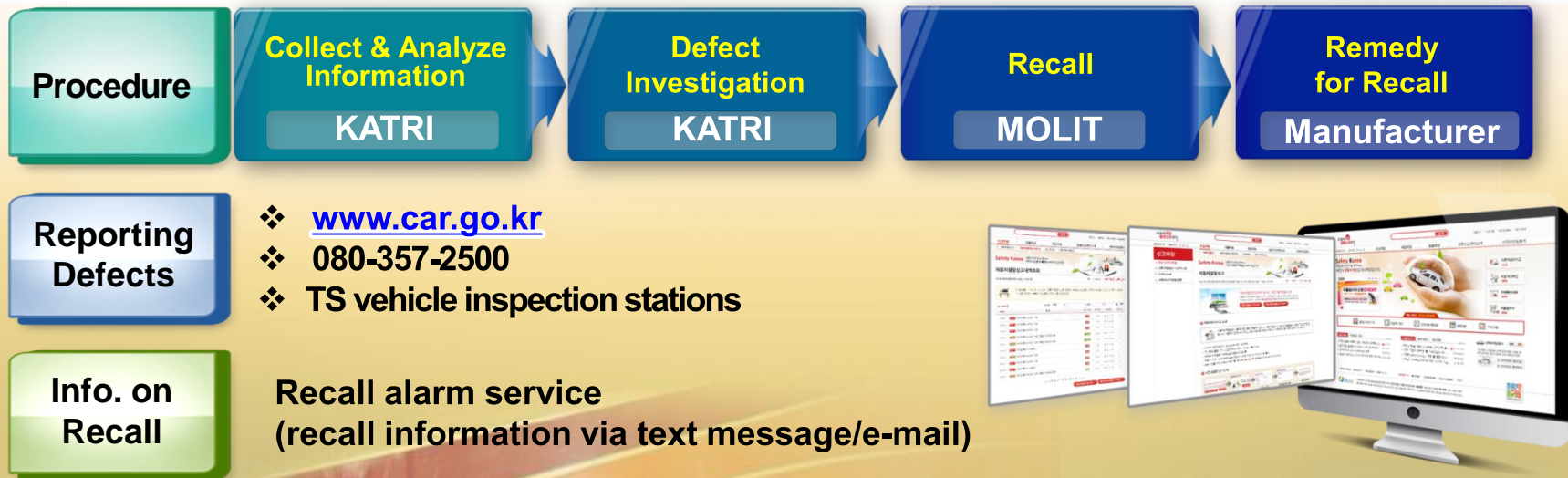
Checking whether sold automobiles meet vehicle safety standards through self-certification system



Samples are randomly selected by purchasing vehicles from the market
Test performed to check whether samples comply with vehicle safety standards and results are made public

2. Defect Investigation

Defect information is collected through the Internet, telephone, media and 57 inspection stations. Upon confirmation of the defect being a serious issue, a defect investigation is launched. If the defect is identified as safety-threatening, all affected models are recalled





KATRI, Defect Investigation Agency

The world's best and most trusted Vehicle safety agency



III. KATRI, Defect Investigation Agency

History

1980s

May 1987 Established KATRI (Korea Automobile Testing & Research Institute)
Sep. 1987 Appointed as a Vehicle Safety Testing Institute (by MOLIT)

1990s

Jan. 1994 Extended test items of vehicle safety test (6→38 items)
Nov. 1996 Completed construction of 7 Indoor Testing Institute Facilities

2000s

Dec. 2002 Completed phase 1 of Proving Ground
Jan. 2003 Appointed as a Performance Test Institute (MOLIT)

2010s

May. 2013 Hosted the 23rd ESV International Conference
Nov. 2013 Construction of 4 advanced test tracks

Staff

- ❖ Staff of KATRI: 128 persons (Master's degree or higher: 76 persons)
- ❖ TS vehicle inspection stations: 57 locations (525 persons)

III. KATRI, Defect Investigation Agency

Facility Layout

Total area: 2,146,383m²

- 7 test buildings: 29,464m²
(108 evaluation equipment)
- Proving ground: 1,650,000m²
(14 test tracks)

Proving ground

Noise/EMC test building

Driving & rollover test buildings

Future vehicle test building

Environment test building

Crash test building

General test building

Impact test building

Main building

IV

Latest Issue (panoramic sunroof)

We have state-of-the-art facilities
as well as the best engineers



IV. Latest Issue (panoramic sunroof)

- **Sharp increase in consumer complaints of panoramic sunroof**
 - 2011: 2 cases
 - 2013: 33 cases (5 cases of imported models)
- **Details of consumer complaints**
 - **Sudden shattering of panoramic sunroof while driving the car with the driver unaware**
 - **Driver may suffer abrasions due to shattered glass and encounter risk of secondary accidents**



IV. Latest Issue (panoramic sunroof)

Images of panoramic sunroof damages






IV. Latest Issue (panoramic sunroof)

Characteristics of panoramic sunroofs

- ◆ The use of panoramic sunroofs has been increasing since 2007
- ◆ The ceramic print area was small in conventional sunroofs, but, with the introduction of panoramic sunroofs the ceramic print area has increased
 - Ceramic print area of panoramic sunroofs is **50% on average**, and **90% maximum**.
- ◆ Black enamel, the paint used for ceramic print area of automobile toughened glass, is **produced by 2 companies** and is distributed throughout the world
 - Components of black enamel thought to be adulterant in toughened glass – impairs sunroof strength

IV. Latest Issue (panoramic sunroof)

Results of 227g ball drop test

- ◆ **Toughened Glass (Area without ceramic print)**
: No shattering even at drop height of 10 meters 
- ◆ **Toughened Glass (Ceramic print area)**
: Shattered at average height of 1.4 meters 
- ◆ **Original Glass (prior to toughened)**
: Shattered at average drop height of 3 meters 

❖ Complaint Manufacturers' Opinion

- Not require a ball drop test for ceramic print area
- Point of impact: geometric center (UN R43), support center (GTR 6)

A decorative graphic on the left side of the slide, featuring a blue and yellow curved shape. Below it is a landscape image with a road, trees, and mountains under a blue sky with white clouds. A network of white lines is overlaid on the sky, suggesting connectivity or data flow.

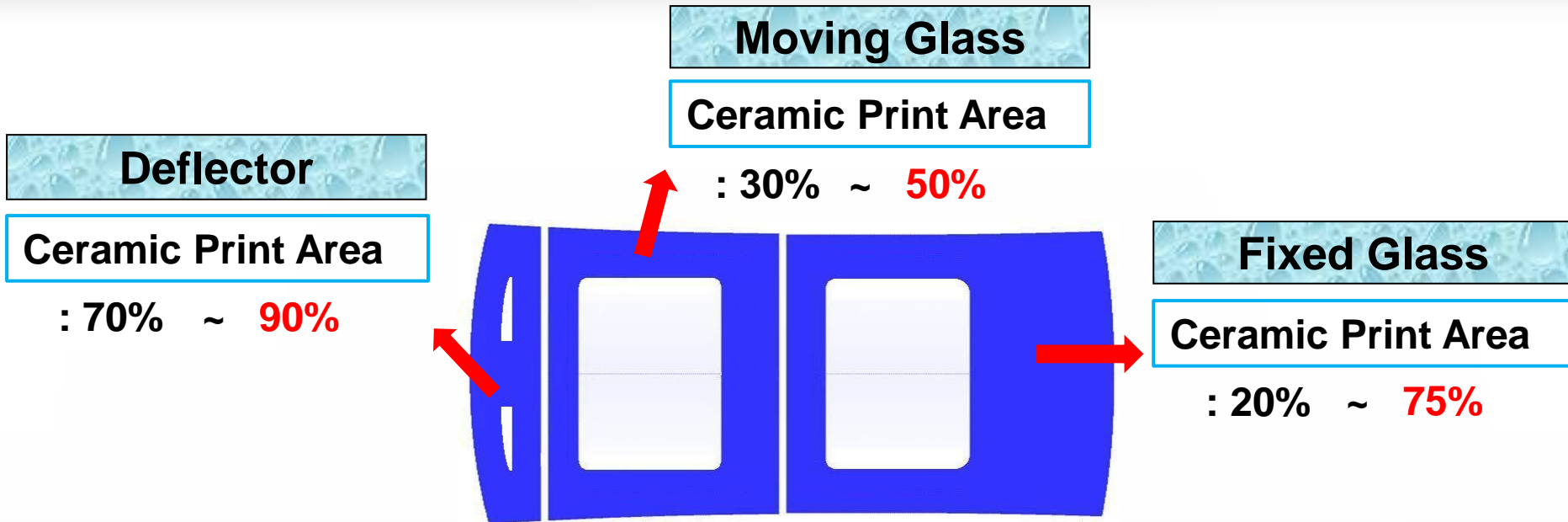
V

Conclusion & Discussion

**We will become the world's most trusted
vehicle safety organization**



V. Conclusion & Discussion



Ceramic printed toughened glass cannot be considered toughened glass as its strength is poorer than to original glass

- Ceramic printed toughened glass: approx. 1.4 m
- Original glass prior to toughened: approx. 3.0 m

- **Proposed an discussion of vulnerability of ceramic print area of toughened glass**
 - **Whether it is safe for toughened glass for automobiles?**
 - **Determined that there is no safety issue - Closing discussion**
 - **Determined that the safety problems - Requires discussion**
 - * **Amendment for UN R 43 & GTR 6**
 - **Safety concerns, Sales for the panoramic sunroof of automobile is determined by the range should be recalled**
 - ❖ **Manufacturers need to take the initiative in developing ways to improve the strength of ceramic print area**

Thank you very much!!



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