

Effect Evaluation on the Implemented Full-Width Frontal Impact Standard for Reduction of Fatalities as well as the Number of the Seriously-Injured in Japan

(2009 statistics by the Ministry of Land, Infrastructure, Transport and Tourism)

Effect of the Standardization (2009):

1,271 deaths prevented and 5905 cases reduced from serious to minor injury

Calculation Method:

The numbers of deaths as well as the seriously injured and those of the respective accidents are calculated for the cases where the full-width frontal impact standard is assumed not to have been implemented, and the worked-out result as difference between the calculated numbers for all those cases and ones from actual records is taken as the effect.

○The fatality rate is calculated for non-compliant vehicles involved in the target accidents.

Fatality rate: $\text{fatalities} / (\text{fatalities} + \text{number of the seriously, slightly injured and not-injured})$

Serious injury rate: $\text{number of the seriously injured} / (\text{fatalities} + \text{number of the seriously, slightly injured and not-injured})$

Target accidents: vehicle-to-vehicle accidents with four-wheeled vehicles or single vehicle accidents, where the crash takes place at the frontal or oblique frontal area.

○The number of deaths and the seriously injured is calculated for the case where all vehicles subject to the evaluation are assumed non-compliant.

Assumed number of deaths: fatality rate for non-compliant vehicles x total number of occupants for all vehicles in the evaluation.

Assumed number of the seriously injured: serious injury rate for non-compliant vehicles x total number of occupants for all vehicles in the evaluation.

○The effect (the number of deaths prevented and cases with reduced serious injury) is calculated.

Number of deaths prevented: assumed number of deaths – actual number of deaths

Number of cases

with reduced serious injury: assumed number of the seriously injured – actual number of the seriously injured