

**The Partial Amendment of the Safety Regulations for Road Vehicles, the Type Designation Regulations for Devices and the related announcement**

October 2006

Ministry of Land, Infrastructure and Transport

1. Background

The Ministry of Land, Infrastructure and Transport (MLIT) is proceeding with the expansion and toughening of safety regulations for road vehicles for the purpose of reducing traffic fatalities.

The automobile industry is globalizing at a rapid pace and interest is rising in promoting the international harmonization of automobile regulations. The MLIT is working to improve the level of Japan's safety and environmental regulations and proceeding with the international harmonization of automobile regulations on a step-by-step basis considering various effects of harmonization, including the economic effects.

2. Matters to be Amended

For the harmonization with ECE Regulations, MLIT plans to amend the Safety Regulations for Road Vehicles (Ministry of Transport Ordinance No. 67, 1951), the Type Designation Regulations for Devices (Ministry of Transport Ordinance No. 66, 1998), and the Announcement that prescribes details of Safety Regulations for Road Vehicles (MLIT Announcement No. 619, 2002) as follows:

- (1) Establishing regulation for Front Underrun Protective Device  
(harmonizing with ECE Regulation No. 93)
- (2) Amending regulation for Rear Marking Plates for Heavy and Long Vehicles  
(harmonizing with ECE Regulation No. 70)

## **Establishment of regulations for Front Underrun Protection (FUP) and Front Underrun Protection Devices (FUPD)**

### **1. Background**

When a large-sized vehicle with large ground clearance and a small-sized vehicle with short ground clearance collide, occupants of small-sized vehicle are at risk of serious injury because of high probability that it will underrun the front of large-sized vehicle. Aiming for mitigation of injuries and damage in such accidents, Ministry of Land, Infrastructure, and Transport (MLIT) plans to mandate FUPD for large-sized vehicles. To that aim, MLIT will establish a regulation for FUPD that will be harmonized with UN/ECE Regulation No.93.

Introduction of this regulation has been decided on the basis of the recommendation which was examined by the Accident Analysis Task Force and Safety Regulation Task Force Committee and presented at the 4th Automotive Safety Symposium held in Tokyo in October 2003.

### **2. Summary of the Regulation**

#### ① Scope

The regulation requiring FUPD will apply to all vehicles used for the carriage of goods and having a maximum mass over 3.5 tons, excluding trailers and three-wheeled vehicles with a wheel at the front axle, and other vehicles with design that is incompatible with the requirements of FUP.<sup>[1]</sup>

In addition, the requirements of this Regulation will not apply to all-wheel drive motor vehicles. However, dump trucks and concrete mixer trucks are not excluded because significant accident reduction benefit is anticipated<sup>[2]</sup>, even if their ability to run on bad road may be limited. Instead, relaxed height requirement will be applied to these vehicles.

#### ② Requirements

The maximum ground clearance with respect to the underside of the FUP shall be no more than 400 mm and the horizontal distance measured in the rearward direction from

---

<sup>[1]</sup> Ministry of Land, Infrastructure and Transport determines that “vehicles such that their use is incompatible with the provisions of front underun protection” are motor vehicles used for snow removal, rail/road combined truck, a sprinkler truck, a cleaning truck, etc.

<sup>[2]</sup> About 15% of the whole of a standard introduction effect is estimated.

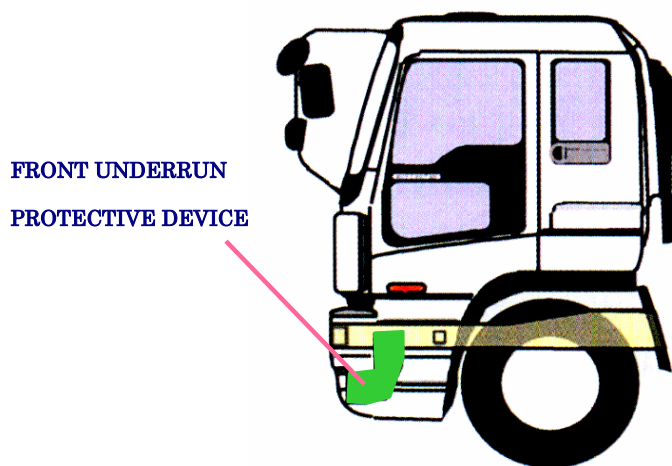
the foremost part of the vehicle to the front of the FUPD shall not exceed 400 mm.

Additionally, in a case of a vehicle with maximum mass exceeding 7.5 tons, the horizontal distance measured in the rearward direction from the foremost part of the vehicle to the front of the FUPD shall not exceed 400 mm diminished by the recorded deformation measured at any of the points where the test forces have been applied.

However, in the case when design of the vehicles for special utilization<sup>[3]</sup> and having a maximum mass exceeding 7.5 tons does not allow for the 400mm upper edge of FUPD, the maximum ground clearance with respect to the underside of the FUPD shall be no more than 450 mm.

In measuring distances from foremost part, any part of the vehicle which is higher than 1.8 m above the ground shall be excluded.

Specific requirements will apply to FUPD to prevent or minimize the probability of underrun in terms of dimensions and strength. These requirements will be applied to the Vehicles having a maximum mass exceeding 7.5 tons. (harmonizing with ECE Regulation No.93)



### ③Lead time

This regulation will be applied to the vehicles manufactured on or after September 1, 2011

### 3.Schedule

This regulation is scheduled to be promulgated by the end of December 2006.

---

<sup>[3]</sup> e.g. dump trucks and concrete mixer trucks

## **Amendment of regulation for Rear Marking Plates for Heavy and Long Vehicles**

### **1.background**

Heavy and long vehicles shall be equipped with rear marking plates to prevent collision at night. This time, the rule of property and position will be revised because of adjustment with ECE Regulation No.70

### **2.Summary of amendment**

#### ①Scope

- Vehicles used for the carriage of goods and having a maximum mass exceeding 7 tons.(not change with the old requirement under the Act)

#### ②Main requirements

Amendment of shape,dimensions,photometric characteristics and resistance to heat, etc.

- Number

The number is changed to ‘one, two or four’ from ‘less than 4’

- Material

In red parts of rearmarking plates, fluorescent materials are changed to fluorescent materials or retro-reflective materials.

- Pattern

For mounting on trailers and semi-trailers, the plates shall have a yellow retro-reflective background with a red fluorescent or retro-reflective border;  
For mounting on non-articulated vehicles (tractors or trucks), the plates shall be of the chevron type with alternate, oblique stripes of yellow retro-reflective and red fluorescent or retro-reflective materials or devices.

- Dimensions

(requirement before amendment)

The shape shall be a rectangle that each side is more than 130mm.

The area of retro-reflective shall be more than 800cm<sup>2</sup>.

The area of fluorescent materials shall be more than 400cm<sup>2</sup>.

(requirement after amendment)

The minimum total summarized length of a set of rear marking plates consisting only of one, two or four marking plates with retro-reflective and fluorescent materials shall be 1,130 mm, the maximum total length shall be 2,300 mm.

For trucks and tractors ;

The width of a rear marking plate shall be 140mm +/- 10 mm.

The width of the stripes shall be 100 mm +/- 2.5 mm.

For trailers and semi-trailers ;

The width of a rear marking plate shall be 200 mm +/- 5 mm.

The width of the red fluorescent border of the rear marking plates for trailers and semi-trailers shall be 40 mm +/- 1 mm.

➤ Position

The height shall be changed from 'under 1.5m' to 'Above the ground, not less than 250 mm (lower edge), nor more than 1,500 mm (upper edge), however nor more than 2100 mm (upper edge) in case the design of the vehicle does not allow for the 1,500mm upper edge installation.'

➤ Photometric Property

Coefficient of retro-reflection shall be changed to '300cd/m<sup>2</sup>/lx' from '122cd/m<sup>2</sup>/lx'. (About 2.5 times brightness of the old requirement under the Act)

➤ Geometric visibility

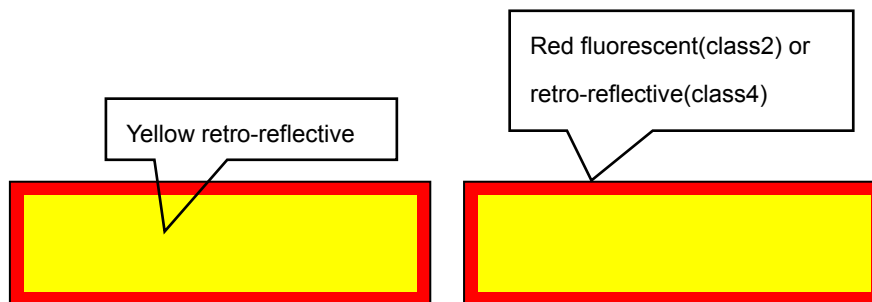
Horizontal angle shall be 30 degrees inwards and outwards.

Vertical angle shall be 15 degrees above and below the horizontal.

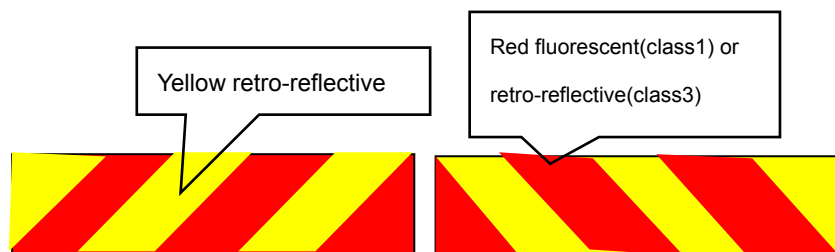
However if the plates are not able to be seen from all positions because of the vehicle design, they shall be installed at position where they shall be visible as much as possible.

➤ Resistance test

Resistance test to weathering will be changed and then harmonized with ECE Regulation No.70.



REAR MARKING PLATES FOR TRAILERS AND SEMI-TRAILERS



REAR MARKING PLATES FOR TRUCKS AND TRACTORS

③Lead time

This regulation will be applied to the vehicles manufactured on or after September 1, 2011

**3.Schedule**

This regulation is scheduled to be promulgated by the end of December 2006.