講演番号 | 356

文献番号 | 20225356

Ministry of the Environment's measures for motor vehicle noise reduction

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KEY WORDS: **Vibration, noise, and ride comfort, Exterior noise/Noise regulation (B3)**

To reduce vehicle traffic noise, measures for traffic flow and measures for road structures have been taken with the consideration of the traffic situation and roadside circumstances which vary from region to region. However, it is difficult to comply with the environmental quality standards and to reduce the number of complaints about roadside noise with such measures alone. Comprehensive measures, including motor vehicle noise reduction measures, should continue to be taken.On June 29 2005, inquiry concerning the "Future Policy for Motor Vehicle Noise Reduction" was submitted to the Central Environment Council by the Minister of the Environment, and the Central Environment Council took the inquiry to the Atmosphere, Noise, and Vibration Committee of the Council. The Atmosphere, Noise, and Vibration Committee set up the Expert Committee on Motor Vehicle Noise. In terms of motor vehicle noise reduction measures, the Committee has discussed measures to reduce noise which are constantly emitted from traffic flow. The Third Report on "Future Policy for Motor Vehicle Noise Reduction" raised issues requiring further consideration, including reviewing the acceleration noise regulations on the four-wheeled vehicles and pending issues concerning the tire noise regulations.

Regarding the acceleration noise regulations on the four-wheeled, the third report indicated that the harmonization with the limit values of phase 3 of R 51-03 and the timing of their adoption should be discussed considering the technical prospect in our country as well as the future examination in UN-ECE/WP29. To examine the introduction of the limit values of phase 3, the committee investigated the detailed situation, through the hearing to the industry group, about 1) issues at the time of the third report, 2) noise reduction countermeasure technology introduced or planned to be introduced for the solution, and 3) whether the technical prospect can be made. As a result, it was confirmed that it is technically possible to comply with phase 3 limit values, so the committee decided to harmonize the acceleration running noise at the time of a new vehicle with the limit values (Table 1) of Phase 3 of R51-03 and the timing of their adoption.

Regarding the pending issues concerning the tire noise regulations, the third report indicated that the timing of enforcement of targeted tire noise limits on in-use vehicles, etc. should be examined after information is obtained on tires' period of use and progress of replacement with R117-02 compliant tires in the market, and it is necessary to discuss measures to disclose tire noise information, such as tire noise labeling The committee considered about future measures while grasping the actual situation of tires' period of use and progress of replacement with R117-02 compliant tires in the market, and the prevalent situation and the tire noise level through the hearing to the industry group. As a result, it was found that by promoting R117-02 compliant tires for new vehicles, the latest technology will be introduced to tires for in-use vehicles, and an increase in the noise performance conformance rate can be expected. Therefore, cooperation with the tire industry is proceeding in a direction to pushing forward a policy to promote the early introduction and substitute to the market of the R117-02 noise requirements conformity tire and a policy of the tire noise labeling releasing information of the tire noise.

For further improvement of vehicle noise measures, it will be necessary to push forward examination about vehicle noise reduction measures with the consideration of environmental changes surrounding vehicles such as electrification of vehicles for the carbon neutral. In addition, it is necessary to consider about the further enhancement of information gathering and studies that can contributing to future effective vehicle noise reduction measures.

Table1 Targeted Permissible Limits

(dB)

Category	Motor vehicles that are designed for transportation of passengers and have at least four wheels	Phase 1	Phase 2	Phase 3
Category M1 Motor vehicles that are designed for transportation of passengers and have nine or fewer seats, including the driver's seat	PMR ≤ 120	72	70	68
	120 < PMR ≤ 160	73	71	69
	PMR > 160	75	73	71
	PMR > 200, seating capacity ≤ 4 people, and seat height from ground < 450 mm	75	74	72
Category M2 Motor vehicles that are designed for transportation of passengers, have at least ten seats, including the driver's seat, and have a technically permissible maximum laden mass of 5 t or less	Technically permissible maximum laden mass ≤ 2.5 t	72	70	69
	2.5 t < technically permissible maximum laden mass ≤ 3.5 t	74	72	71
	Technically permissible maximum laden mass > 3.5 t, and maximum power ≤ 135 kW	75	73	72
	Technically permissible maximum laden mass > 3.5 t, and maximum power > 135 kW	75	74	72
Category M3 Motor vehicles that are designed for transportation of passengers, have at least ten seats, including the driver's seat, and have a technically permissible maximum laden mass exceeding 5 t	Maximum power ≤ 150 kW	76	74	73
	150 kW < maximum power ≤ 250 kW	78	77	76
	Maximum power > 250 kW	80	78	77
Category	Motor vehicles that are designed for transportation of goods and have at least four wheels	Phase 1	Phase 2	Phase 3
Category N1 Motor vehicles that are designed for transportation of goods and have a technically permissible maximum laden mass of 3.5 t or less	Technically permissible maximum laden mass ≤ 2.5 t	72	71	69
	Technically permissible maximum laden mass > 2.5 t	74	73	71
Category N2 Motor vehicles that are designed for transportation of goods and have a technically permissible maximum laden mass exceeding 3.5 t but not exceeding 12 t	Maximum power ≤ 135 kW	77	75	74
	Maximum power > 135 kW	78	76	75
Category N3 Motor vehicles that are designed for transportation of goods and have a technically permissible maximum laden mass exceeding 12 t	Maximum power ≤ 150 kW	79	77	76
	150 kW < maximum power ≤ 250 kW	81	79	77
	Maximum power > 250 kW	82	81	79