ECE No. 28.00: Audible Warning Devices (Horns) Technical requirement

The 61th Asia Expert meeting

5th - 6th Feb. 2020

JAPAN AUTOMOBILE STANDARDS INTERNATIONALIZATION CENTER

ECE No. 28.00: Audible Warning Devices (Horns)

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ECE No. 28.00: Audible Warning Devices (Horns)

1. The main purpose of this regulation
   a. When horn is “ON”, to recognize clearly for road user that the warning is from “Vehicle”.
   b. When horn is “ON”, the sound can be heard for road user.
   c. The device have sufficient durability.

2. Scope: L3 – L5, M, N

3. Summary

	Class	Sound pressure	Measurement conditions	Durability
For devices	Class I	95 - 115 dB(A)	Height(From ground): 1.2 m Distance: 2 m	10,000 times (1s-On & 4s-Off)
	Class II	105 - 118 dB(A)		50,000 times (1s-On & 4s-Off)
For vehicles	Class I	83 - 112 dB(A)	Height(From ground): 0.5 - 1.5 m Distance: 7 m	-
	Class II	87 - 112 dB(A)		

Class I: Motorcycles with a power less than or equal to 7 kW
Class II: Motorcycles and vehicles with a power greater than 7 kW

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4. Overview of requirement for Devices

	Class	Sound pressure	Measurement conditions	Durability
For devices	Class I	95 - 115 dB(A)	Height(From ground): 1.2 m Distance: 2 m	10,000 times (1s-On & 4s-Off)
	Class II	105 - 118 dB(A)		50,000 times (1s-On & 4s-Off)

Type of horn (for reference):
As an overall trend, Flat(Disc) horns are mounted on motorcycles and low-grade vehicle and Trumpet horns are mounted on high-grade cars.

Flat(Disc) horn

Trumpet horn

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4. Overview of characteristics requirement for Devices

		Requirement	Regulation text
Sound	1	The level weighted with “curve A” shall not exceed the following values: Class I: 115 dB(A), Class II: 118 dB(A)	6.3.7.
Sound	2	The sum of level at 1800-3550Hz shall be greater than that above 3550Hz.	6.3.7.1.
Sound	3	The sum of level at 1800 - 3550Hz shall be equal to or greater than: Class I: 95 dB(A), Class II: 105 dB(A)	6.3.7.1.
Sound	4	The time required for reaching the minimum sound pressure (see above) shall be 0.2s or less.	6.3.9.
Durability		Class I: 10,000 times, Class II: 50,000 times	6.4.1.

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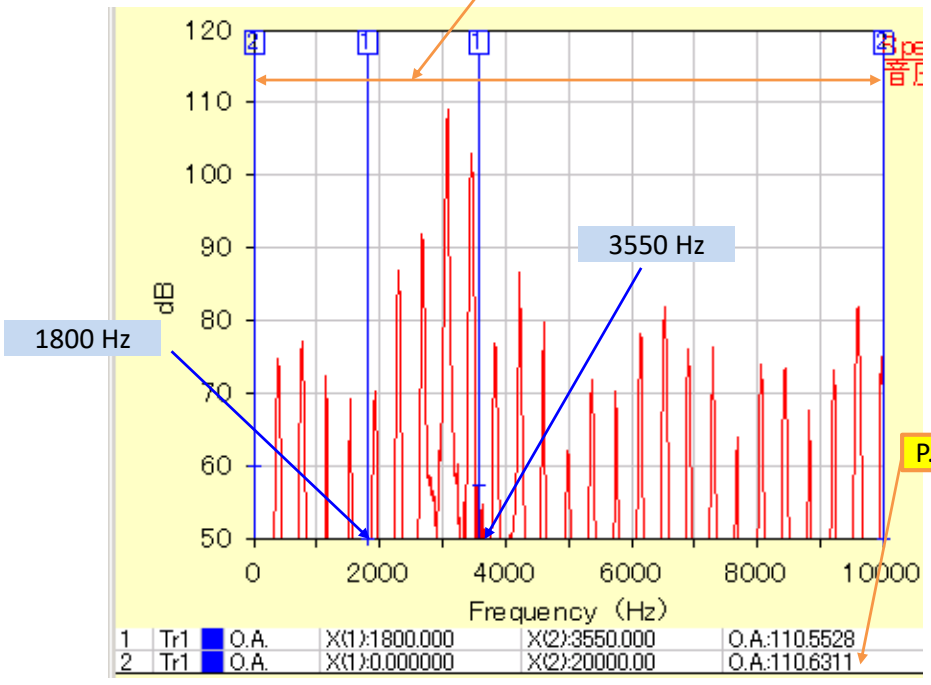
5. Detail of characteristics requirement for Devices (1/5)

[Details of horn sound requirement -1]

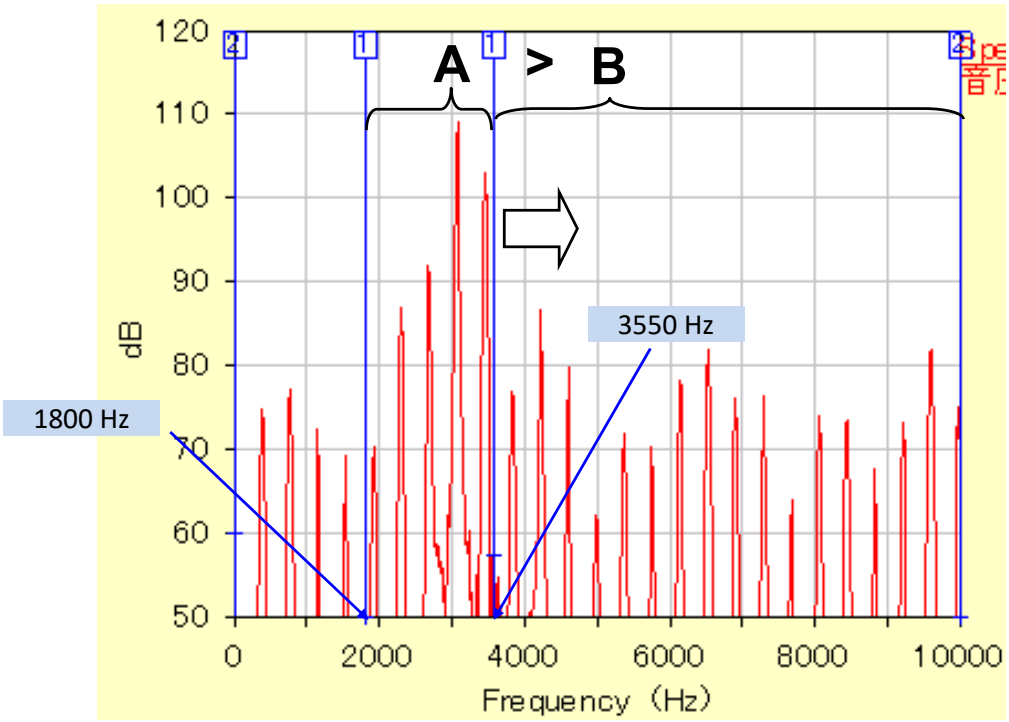
The level weighted with “curve A” shall not exceed the following values:
Class I: 115 dB(A), Class II: 118 dB(A)



5. Detail of characteristics requirement for Devices (2/5)

[Details of horn sound requirement -2]

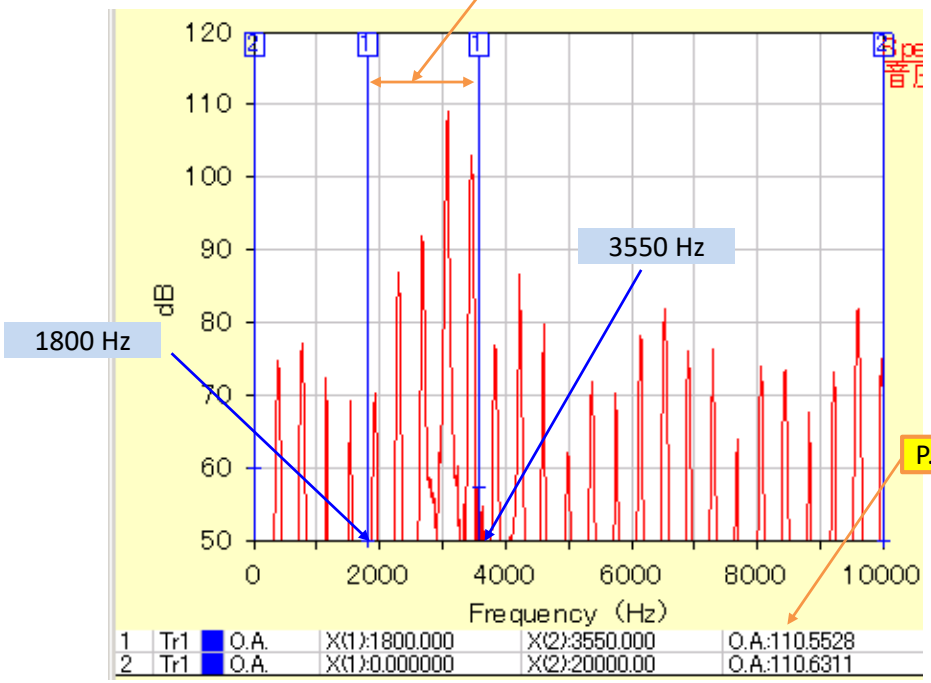
The sum of level at 1800-3550Hz shall be greater than that above 3550Hz.



5. Detail of characteristics requirement for Devices (3/5)

[Details of horn sound requirement -3]

The sum of level at 1800 - 3550Hz shall be equal to or greater than:
Class I: 95 dB(A), Class II: 105 dB(A)



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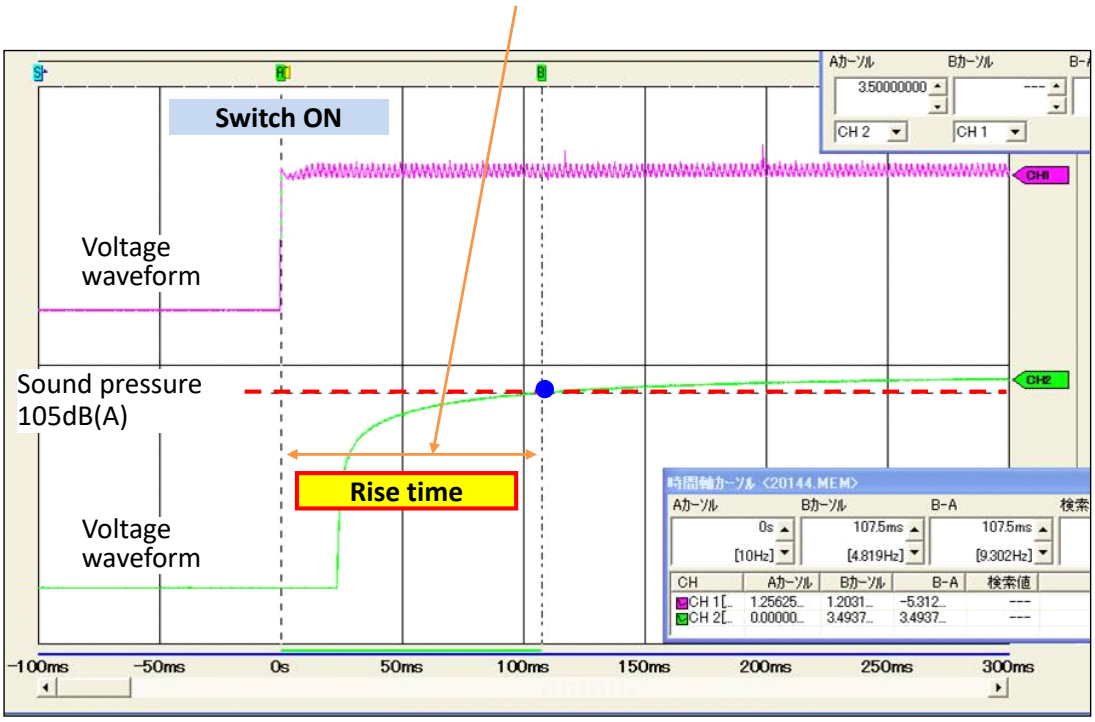
5. Detail of characteristics requirement for Devices (4/5)

[Details of horn sound requirement -4]

The time required for reaching the minimum sound pressure shall be 0.2s or less.



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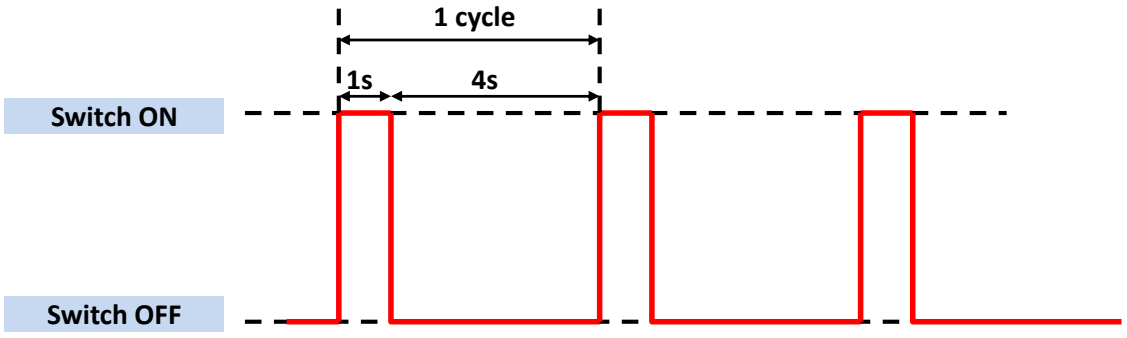
5. Detail of characteristics requirement for Devices (5/5)

[Details Durability]

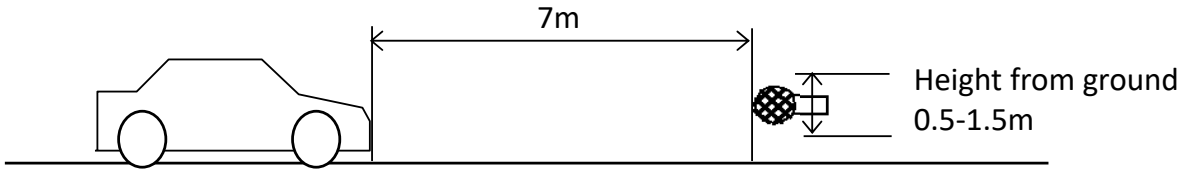
Class I: 10,000 times, Class II: 50,000 times



6. Overview of characteristics requirement for vehicles

	Class	Sound pressure	Measurement conditions	Durability
For vehicles	Class I	83 - 112 dB(A)	Height(From ground): 0.5 - 1.5 m Distance: 7 m	-
	Class II	87 - 112 dB(A)		

Measurement place: Outdoor space or semi-anechoic chamber
Background noise: Lower than the measured sound pressure by 10[dB(A)]
Measurement conditions: Height 0.5-1.5m Distance 7m
Measurement voltage: 13+/-0.1V (Harness resistance: 0.1 ohm)



Thank you!