

ITALIAN LEGISLATION AND THE DIFFERENT NOISE SOURCES: ROAD AND RAILWAY

**Mr. Salvatore Curcuruto, Mr. Giuseppe Marsico,
Ms. Francesca Sacchetti**

APAT

Agency for Environmental Protection and Technical Services

Index

1. **L. 26 October 1995 n. 447** “Framework Law on noise pollution”
2. **DM 16 March 1998** “Noise pollution measurement methods”
3. **DPR 18 November 1998 n. 459** “Regulation about noise pollution from railway traffic”
4. **DPR 30 March 2004 n. 142** “Provisions for the containment and prevention of noise pollution from roadway traffic”
5. **DM 29 November 2000** “Criteria for the arrangement of noise reduction plans by Public Transport Authority”

1 – L. 26 October 1995 n. 447 “Framework Law on noise pollution”(1)

- ❖ The Framework Law n. 447/1995 deals with the measures for prevention, control and containment produced by noise traffic
- ❖ Road and railway infrastructures are considered as fixed acoustic sources and specific limit values are established, through operative regulations, for the receivers inside acoustic pertinence areas
- ❖ Differential limits are not applicable for traffic noise

1 – L. 26 October 1995 n. 447 “Framework Law on noise pollution”(2)

- ❖ Public transport and management companies of road and railway infrastructures have to prepare noise abatement plans when acoustic problems are found out
- ❖ The projects of new infrastructures or modification of existing infrastructures have to include a report about noise impact
- ❖ Management companies have to set apart a 5% fixed quote of their budget for execution of the noise abatement measures

2 – DM 16 March 1998 “Noise pollution measurement methods”

This decree establishes *measurement criteria* for road and railway noise:

- The noise descriptors;
- The measurement timing;
- The measurement point locations;
- The measurement meteo conditions.

3 – DPR 18 November 1998 n. 459 “Regulation about noise pollution from railway traffic (1)”

This decree introduces the “*railway acoustic pertinence area*”

Regarding to the *immission limit values*:

- ❑ inside the acoustic pertinence area, the railway noise has to respect its immission limits, defined for existing and new railways.
- ❑ outside the acoustic pertinence area, the railway noise has to respect the immission limit of the acoustic class defined by acoustic zoning

3 – DPR 18 November 1998 n. 459 “Regulation about noise pollution from railway traffic” (2)

- For *existing railways and new railways with speed project lower than 200 km/h*:
 - ✓ **Fascia A**: extended from rail alignment for 100 m
 - ✓ **Fascia B**: extended from the end of Fascia A for 150 m

- *New railways with speed project higher than 200 km/h (High Speed)*
 - ✓ **Acoustic pertinence area**: extended from rail alignment for 250 m;

this “*acoustic pertinence area*” is extendible up to 500 m if there are sensitive receivers (schools, hospitals, rest homes).

3 – DPR 18 November 1998 n. 459 “Regulation about noise pollution from railway traffic” (3)

□ Immission limit values for *existing railways and new railways with speed project lower than 200 km/h*:

a) Sensitive receivers

$$L_{Aeqday} = 50 \text{ dB(A)}, L_{Aeqnight} = 40 \text{ dB(A)}$$

b) All other receivers inside **Fascia A**

$$L_{Aeqday} = 70 \text{ dB(A)}, L_{Aeqnight} = 60 \text{ dB(A)}$$

c) All other receivers inside **Fascia B**

$$L_{Aeqday} = 65 \text{ dB(A)}, L_{Aeqnight} = 55 \text{ dB(A)}$$

3 – DPR 18 November 1998 n. 459 “Regulation about noise pollution from railway traffic” (4)

- Immission limit values for *new railways with speed project higher than 200 km/h* :

Acoustic pertinence area

- a) Sensitive receivers:

$$L_{Aeqday} = 50 \text{ dB(A)}, L_{Aeqnight} = 40 \text{ dB(A)}$$

- b) All other receivers:

$$L_{Aeqday} = 65 \text{ dB(A)}, L_{Aeqnight} = 55 \text{ dB(A)}$$

3 – DPR 18 November 1998 n. 459 “Regulation about noise pollution from railway traffic” (5)

- If it is not technically possible to respect the immission limit values, it is necessary to intervene with direct measures on receivers, ensuring these limits:
 - $L_{Aeqnight} = 35 \text{ dB(A)}$ for hospitals and rest homes
 - $L_{Aeqnight} = 40 \text{ dB(A)}$ for all other receivers
 - $L_{Aeqday} = 45 \text{ dB(A)}$ for schools
- These measurements must be executed inside the buildings, in the middle of the more noise exposed room, with the microphone at 1,5 m height from floor level
- The respect of immission limit values can be obtained by measures for noise abatement at the sources, during propagation and directly at the receivers

4 – DPR 30 March 2004 n. 142 “Provisions for the containment and prevention of noise pollution from road traffic” (1)

- This decree introduces the “*roadway acoustic pertinence areas*” whose extensions depend on the roadway classification

- *Roadway classification:*

A – Highways

B – Main extra urban roadways

C – Secondary extra urban roadways

D – Main urban roadways

E – Secondary urban roadways

F – Local roadways

4 – DPR 30 March 2004 n. 142 “Provisions for the containment and prevention of noise pollution from road traffic” (2)

Regarding to the *immission limit values*:

- ✓ inside the acoustic pertinence area, the roadway noise has to respect its immission limits, defined for existing and new roadways
- ✓ outside the acoustic pertinence area, the roadway noise has to respect the immission limits of the acoustic class defined by acoustic zoning

The next tables show the different immission limit values for *existing and new roadways*

4 – DPR 30 March 2004 n. 142 “Provisions for the containment and prevention of noise pollution from road traffic” (3)

**Table 1
NEW ROADS**

| ROADS CLASSIFICATION | | Acoustic pertinence area Extension (m) | Sensitive receivers* | | All the others receivers | |
|---|-----|--|----------------------------|----------------------|--------------------------|----------------------|
| | | | L_{Aeqday} dB(A) | $L_{Aeqnight}$ dB(A) | L_{Aeqday} dB(A) | $L_{Aeqnight}$ dB(A) |
| A – Highways | | 250 | 50 | 40 | 65 | 55 |
| B – Main extra urban roadways | | 250 | 50 | 40 | 65 | 55 |
| C – Secondary extra urban roadways | C 1 | 250 | 50 | 40 | 65 | 55 |
| | C 2 | 150 | 50 | 40 | 65 | 55 |
| D – Main urban roadways | | 100 | 50 | 40 | 65 | 55 |
| E – Secondary urban roadways | | 30 | Defined by acoustic zoning | | | |
| F – Local roadways | | 30 | | | | |

* For schools only L_{Aeqday}

4 – DPR 30 March 2004 n. 142 (4)

Table 2
EXISTING ROADS

| ROADS CLASSIFICATION | | Acoustic pertinence area Extension (m) | Sensitive receivers* | | All the others receivers | |
|--|----|---|----------------------------|-------------------------|--------------------------|-------------------------|
| | | | L_{Aeqday} dB(A) | $L_{Aeqnight}$ dB(A) | L_{Aeqday} dB(A) | $L_{Aeqnight}$ dB(A) |
| A – Highways | | 100 (fascia A) | 50 | 40 | 70 | 60 |
| | | 150 (fascia B) | | | 65 | 55 |
| B – Main extraurban roadways | | 100 (fascia A) | 50 | 40 | 70 | 60 |
| | | 150 (fascia B) | | | 65 | 55 |
| C – Secondary extraurban roadways | Ca | 100 (fascia A) | 50 | 40 | 70 | 60 |
| | | 150 (fascia B) | | | 85 | 55 |
| | Cb | 100 (fascia A) | 50 | 40 | 70 | 60 |
| | | 50 (fascia B) | | | 65 | 55 |
| D – Main urban roadways | Da | 100 | 50 | 40 | 70 | 80 |
| | Db | 100 | 50 | 40 | 65 | 55 |
| E – Secondary urban roadways | | 30 | Defined by acoustic zoning | | | |
| F – local roadways | | 30 | | | | |

* For schools only L_{Aeqday}

4 – DPR 30 March 2004 n. 142 “Provisions for the containment and prevention of noise pollution from road traffic” (5)

➤ If it is not technically possible to respect the immission limit values, it is necessary to intervene with direct measures on receivers, ensuring these limits:

- $L_{Aeqnight} = 35$ dB(A) for hospitals and rest homes
- $L_{Aeqnight} = 40$ dB(A) for all other receivers
- $L_{Aeqday} = 45$ dB(A) for schools

➤ These measurements must be executed inside the buildings, in the middle of the more noise exposed room, with the microphone at 1,5 m height from floor level

➤ The respect of immission limit values can be obtained by measures for noise abatement at the sources, during propagation and directly at the receivers

4 – DPR 30 March 2004 n. 142 “Provisions for the containment and prevention of noise pollution from road traffic” (6)

- The verification of the immission values and the noise abatement activities must be executed inside all the acoustic pertinence areas for sensitive receivers, and for all the other receivers giving priority inside nearest acoustic pertinence area (Fascia A)
- Outside nearest acoustic pertinence area, the noise abatement activities must be in accordance to the noise abatement plans of Municipalities

5 – DM 29 November 2000 “Criteria for the arrangement of noise reduction plans by Public Transport Authority” (1)

- ✓ The decree establishes the criteria for the predisposition, by the public transport and management companies of road and railway infrastructures, of the traffic noise abatement and reclamation plans
- ✓ It fixes the modality and the presentation terms of the plans to the involved Municipalities, Regions and to the Ministry of the Environment
- ✓ It indicates the *target of the reclamation* to obtain the immission limit values within the acoustic pertinence area of the single infrastructure (defined by DPR 459/1998 for railway infrastructures and DPR 142/2004 for roadway infrastructures)

5 – DM 29 November 2000 “Criteria for the arrangement of noise reduction plans by Public Transport Authority” (2)

- The decree establishes that the noise abatement measures have to be executed in accordance to this priority order:
 1. directly on noise source;
 2. during the propagation direction from source to receiver;
 3. directly on receiver

- The direct measures on receiver must be adopted if it is not technically possible to respect the immission limit values or as a consequence of technical, economic and environmental evaluations.

5 – DM 29 November 2000 “Criteria for the arrangement of noise reduction plans by Public Transport Authority” (3)

The decree also fixes:

- the acoustic planning criteria of measures for reducing traffic noise, defining the requirements of the mathematic models suitable for acoustic simulation and barriers dimensioning.
- the criteria for the choice of products for the traffic noise abatement measures.

5 – DM 29 November 2000 “Criteria for the arrangement of noise reduction plans by Public Transport Authority” (4)

The Plan have to include:

- ✓ the acoustic critical areas, defined as the zones where noise levels exceed the immission limit values.
- ✓ the traffic noise contribution to the overcoming the realization modality of reclamation measures
- ✓ the Priority index, which depends on overcoming of the immission limit value and type of receiver
- ✓ the execution timing and costs