

**inter.noise 2000**

The 29th International Congress and Exhibition on Noise Control Engineering  
27-30 August 2000, Nice, FRANCE

---

I-INCE Classification: 0.0

## THE ITALIAN LEGISLATION ON ENVIRONMENTAL NOISE

G.M. Mattia

Brüel Acoustics, Viale Cesare Pavese 304, 00144, Roma, Italy

Tel.: +39065020212 / Fax: +390650510797 / Email: bruel@mclink.it

**Keywords:**

ENVIRONMENTAL NOISE, ITALIAN LEGISLATION, NOISE POLLUTION, ANNOYANCE

**ABSTRACT**

Italian legislation on environmental noise and effect on population. In Italy we have the first general law on environmental noise, the law n. 447/1995, followed by many norms ("decreti applicativi") to cover the complex problem of the noise pollution. The author empathize the difference of a national law with the rule of political planning of the noise activities in the country (statistical effects on population reaction) and the annoyance on the single person.

**1 - PAPER**

I want to inform about the important progress of the Italian legislation on the environmental noise and effects on population.

We get knowledge of the social and medical problems coming from the noise pollution and on the 1<sup>st</sup> of march 1991 the Italian President of the Cabinet approved the law "**DPCM 1/3/91**" on noise limits: "*Limiti massimi di esposizione al rumore negli ambienti abitativi e nell'ambiente esterno*", with index, evaluation procedures and land planning and after in Italy we had the first general law on environmental noise, the law n. 447/1995, "**LEGGE 26 ottobre 1994, n. 447, Legge quadro sull'inquinamento acustico**" as a "guide line" against the noise pollution, followed by many norms ("decreti applicativi") to cover the complex problem of the noise pollution:

1. "**Decreto Ministeriale (DM) del 11/12/1996**, *Applicazione del criterio differenziale per gli impianti a ciclo produttivo continuo.*"  
(Industrial noise with uninterrupted operating cycle).
2. "**Decreto del Presidente del Consiglio dei Ministri (DPCM) del 14/11/1997**, *Determinazione dei valori limite delle sorgenti sonore.*"  
(Subdivision of the territory in 6 areas, index definition:  $L_{Aeq,T}$  and limits for day and night period, differential limit in building (indoor) of 5 dB in day time 06-22 and 3 dB for night time 22-06).
3. "**Decreto del Presidente del Consiglio dei Ministri (DPCM) del 05/12/1997**, *Determinazione dei requisiti acustici passivi degli edifici.*"  
(Minimum dwelling insulation inside the buildings (EN ISO 140 and EN ISO 717)).
4. "**Decreto Ministeriale (DM) del 16/03/1998**, *Tecniche di rilevamento e di misurazione dell'inquinamento acustico.*"  
(Instruments, index and methods to evaluate the noise pollution indoor and outdoor, day and night).
5. "**Decreto del Presidente del Consiglio dei Ministri (DPCM) del 31/03/1998**, *Atto di indirizzo e coordinamento recante criteri generali per l'esercizio dell'attività del tecnico competente in acustica, ai sensi dell'art. 3, comma 1, lettera b), e dell'art. 2, commi 6, 7 e 8, della legge 26 ottobre 1995, n. 447 "Legge quadro sull'inquinamento acustico".*  
(Qualifications to be a "registered" acoustical engineer for the law 447/95).

6. **"Decreto Ministeriale (DM) del 26/06/1998, n. 308, Regolamento recante norme di attuazione della direttiva 95/27/CE in materia di limitazione del rumore prodotto da escavatori idraulici, a funi, apripista e pale cariatrici"**:  
(Max acoustical power level  $L_{AW}$  and noise source certification).

## ON RAILWAY NOISE:

1. **"Decreto del Presidente della Repubblica (DPR) n° 459 del 18/11/1998, Regolamento recante norme di esecuzione dell'articolo 11 della legge 26 ottobre 1995, n. 447, in materia di inquinamento acustico derivante da traffico ferroviario"**:  
(Railway noise limitation, index ( $L_{Aeq}$  and  $L_{AFmax}$ ) and land planning).

## ON INTERNAL SOUND LEVEL IN DISCOTEQUES, PUBS AND SHOPS WITH ELECTROACUSTIC AMPLIFICATION:

1. **"Decreto del Presidente del Consiglio dei Ministri (DPCM) n° 215 del 16/04/1999, Regolamento recante norme per la determinazione dei requisiti acustici delle sorgenti sonore nei luoghi di intrattenimento danzante e di pubblico spettacolo e nei pubblici esercizi"**:  
(Indoor and outdoor sound level limitation ( $L_{Aeq}$  and  $L_{ASmax}$ ) for amplified acoustic).

## ON AERONAUTIC NOISE:

1. **"Decreto Ministeriale (DM) del 31/10/1997, Metodologia di misura del rumore aeroportuale"**:  
(Airport land planning, noise limits, index  $L_{VA}$ , instruments and methods to evaluate the aircraft noise pollution).
2. **"Decreto del Presidente della Repubblica (DPR) n° 496 del 11/12/1997, Regolamento recante norme per la riduzione dell'inquinamento acustico prodotto dagli aeromobili civili"**:  
(Noise abatement procedure).
3. **"Decreto Ministeriale del 20/05/1999, Criteri per la progettazione dei sistemi di monitoraggio per il controllo dei livelli di inquinamento acustico in prossimità degli aeroporti nonché criteri per la classificazione degli aeroporti in relazione al livello di inquinamento acustico"**:  
(Airport noise monitoring systems and airport classification).
4. **"Decreto del Presidente della Repubblica (DPR) n° 476 del 09/11/1999, Regolamento recante modificazioni al decreto del Presidente della Repubblica 11 dicembre 1997, n. 496, concernente il divieto di voli notturni"**:  
(Restrictions on night flights).
5. **"Decreto Ministeriale del 03/12/1999, Procedure antirumore e zone di rispetto negli aeroporti"**:  
(Noise abatement procedure and land planning).

The text of some of these laws is on INTERNET at <http://www.bruel-ac.com/>

These national laws have the rule of political land planning of the noise coming from activities in the country as a noise mitigation method (statistical reaction, effect and annoyance on the population): but also respecting the noise limits we cannot avoid complains and annoyances from a single man.

However the Italian laws are well aligned with the work on Framework Directive for the Assessment and Reduction of Environmental Noise Exposure and the EU noise emission related policy, (DG XI environment); for example, on the aircraft noise law (on which I'm been working) we have a noise indicator equivalent to the  $L_{DN}$  (the  $L_{VA}$ ) based on the single event level SEL in dB(A); such index can easily be converted to another based on the  $L_{DEN}$  if the UE policy decide so.

About the dose/effect relationships I have seen a strong correlation to reaction:

- when the short  $L_{Aeq,1s}$  noise level interferes with speech communication (low STI, Speech Transmission Index) or with sleep disturbance (interference with the REM phase) and
- when the level variation  $L_{AI}$  or  $L_{AF}$  has a strong gradient in a short time (10-20 dB in 1-10 s) especially during the sleep.

## **2 - CONCLUSION**

The general laws on noise must be understood as a political tool for the community life, activity, traffic and land planning but we cannot forget some other rules coming from the Civil Law and the Constitution where health and life quality are involved (fundamental right).

The application of the laws against the noise pollution can be enforced for a better quality of life only if the political authorities decide to organize an advertising campaign followed by a well planned inspection.