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SOUND PRESSURE LEVEL AND ENVIRONMENTAL NOISE: A NATIONAL REGULATION FOR NIGHTCLUBS AND CONCERT HALLS

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ABSTRACT

Since the end of 1999, a new regulation has come into effect in France. It concerns concert halls, nightclubs and any closed place where loud music is usually played. This new regulation aims to protect the hearing of the audience as well as the environment of these halls, while keeping in with the general pattern of the French government policy regarding noisy leisure and entertainment activities, such as motorcar races or shooting ranges. The sound pressure level inside nightclubs and concerts halls is limited to 105 dB L_{Aeq} (measured on a period of 15 minutes) in every place where the audience can stand. In addition, the owners must make a complete noise impact study of their establishment, in order to ensure that the noise annoyance for the environment is reduced to the minimum.

1 - INTRODUCTION

On the 31st December 1992, the French parliament brought in a general law related to noise policy in various fields such as ground and air transportation, leisure and sport activities, neighbourhood noise, etc... This law has a general purpose, aiming to " prevent, remove or limit the emission or the propagation of sound without necessity or by lack of precaution, of noises or vibrations that could be dangerous or annoying for either health or environment ". It needs specific application texts in order to be effective. In 1995, a decree was made to apply this law, dealing with environment and leisure activities noise, including nightclubs and concerts. But being a general regulation, this decree was not well adapted to this particular issue. That is the reason why the French Ministry of environment decided, in 1994, to make technical studies and start discussions with the various people involved in these activities, including sound engineers, club owners, Disc Jockeys, concert promoters, and hearing specialists. The aim of these studies and discussions was to define how to protect the health of the audience and the environment without putting an end to the establishments activities. The decree n° 98-1143, which was signed by 6 ministers on the 15th December 1998 was the result of these 4 years of work. This new regulation concerns concert halls, nightclubs and every closed place where loud music is usually played. It took effect from the 16th december 1999.

2 - WHAT PLACES ARE AFFECTED BY THE REGULATION?

All establishments and buildings open to the public and where loud music is usually played, except the places reserved for the learning of music and dance. Thus, nightclubs and concert halls are evidently concerned, even if they are not opened every day. Bars where live bands play or which have karaoke and every hall where loud – whether it is recorded or live- music is played more than 12 times a year are subject to the clauses of this regulation.

However, film theatres, and practice rooms which are not opened to the public, are not concerned.

3 - WHAT ARE THE PROVISIONS OF THE DECREE?

1-a The sound pressure level inside nightclubs and concert halls is limited to 105 dB L_{Aeq} (measured on a period of 15 minutes) in every place where the audience can stand. The owner must use every possible means to insure that this level is not exceeded. The use of a sound level limiter is recommended, but it

is not obligatory. In the case where the owner chooses to not use this kind of material, the instant sound pressure level must be always displayed to the people in charge of sound levels (Disc Jockey or sound engineer).

1-b When the venue shares a walls, a cellar or a roof (ie. any kind of structural connection), with a building or a house with inhabitants, the sound insulation between the venue and the most exposed neighbour must be superior or equal to the following values:

Octave band	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Emission reference level	99 dB	99 dB	99 dB	99 dB	99 dB	99 dB
Minimal sound insulation value (DnT)	66 dB	75 dB	82 dB	86 dB	89 dB	91 dB

Table 1: Sound insulation values.

If it is not possible to obtain this sound insulation, a sound level limiter must be used. The maximum authorized sound level will be defined in order to guarantee that the difference between the background noise when the venue is closed and the ambient noise when it's open, measured in the most exposed neighbouring house, remains both under 3 dB(A) in L_{Aeq} and under 3 dB in each octave band between 125 Hz and 4 kHz.

2- In addition, the owners must make a complete noise impact study of their establishment, in order to ensure that the noise pollution for the environment is reduced to the absolute minimum. This impact study is specific to each place, but must at least contain the following items:

- general information about the venue and the owner,
- acoustical characteristics of the venue, including a map and a description of the PA system,
- background noise measurement in the most exposed neighbouring house,
- the usual maximum sound pressure level inside the hall.

And, depending on the result of the above measurements:

- maximum authorized sound pressure level, or definition of the aimed sound insulation improvement,
- description of the inside sound level control system or procedure,
- certificate of sound insulation, if it is equal or superior to the values given in 1-b.

4 - CONTROL AND PENALTIES

When the maximum level of 105 dB(A) is exceeded, the owner of the venue, or the promoter of the event, is subject to a penalty of 1 500 EURO, or 7 500 EURO for a company. This amount can be doubled in case of repetition of the offence. The same penalty is applicable if the owner is unable to show its study impact to those in charge of control. A penalty of 2 years of imprisonment can also be added.

In addition, the sound system and sound equipment may be confiscated.

Finally, in the case where the owner willfully disregards the law the prefect can close the venue down until it attains regulation specifications.

To coincide with this, the Ministry of Environment decided to carry out the following:

- to edit the guidelines on the making of the impact study, in order to help the acoustic engineers, the people in charge of the control of this regulation, and also the owners of clubs to understand what this impact study must contain and how acoustics issues should be approached,
- to support an information campaign in schools, on loud music and the risks it poses to hearing,
- making sure that sound engineers and Disc Jockeys have access to professional training related to the sound levels and hearing.

5 - CONCLUSION

This regulation is a real step forward in the fight against hearing damage and noise pollution in the areas surrounding nightclubs and concert halls. At the same time, this will help the club and concert hall owners to make sure that their venues are well designed for their activity, and that they are not at risk of being closed down for noise pollution related issues.

As a result of this regulation, some venues may be closed, mainly because it is impossible (for technical or economical reasons) to reach the sound level insulation values given in table 1, or because the level they are limited to, due to lack of insulation, is not adapted to the playing of loud music. Thus however is only the case when this activity is obviously not adapted to the building where it takes place.