

Geom. Manuel FAGGIN

Via Molinrotto 23
35037 VILLA di TEOLO ó PD

Cell. 339-1724626
E-mail: manuefaggin@yahoo.it

MEASUREMENTS AND REPORT
OF THE SOUND TESTING OF THE FILTERING STATION
mod. CITTAø

Measurements performed:
in Prato della Valle,
on behalf of the company systemlife s.r.l.
Via M. Visentin 14/A
35012 Camposampiero

On: 10 and 11 January 2008

SOUND REPORT OF THE DISTURBANCE
ASSESSMENT OF THE FILTERING STATION

This study was done by the undersigned surveyor, Faggin Manuel, a Competent Technician for Environmental Sound according to the provisions of the law no. 447/1995, registered in the regional list of Competent Technicians of the Veneto Region at no. 111, in performing the job allocated by the company systemlife s.r.l., with registered address in Camposampiero, Via M. Visentin 14/A.

The aim of this sound level survey is to assess and check any sound pollution produced by the Filtering Station òmod. Cittàö.

Legal references

Checking the absolute input limit.

Definition: as given in Art.2, paragraph 1, letter f of the framework law no. 447/95

input limit values: the maximum noise value that can be inputted by one or more sources of sound in the residential environment or the external environment, measured in proximity of the receivers.

The Decree 16 March 1998 "Survey and measurement techniques of the sound pollution" at point 11 of the appendix A establishes that the environmental sound level in the instance of the absolute limits is measured with measurement times referring to the reference time (TR).

For the daytime period the reference time is from 06:00 to 22:00 (16 hours). For the night-time period, the reference time is from 22:00 to 6:00 (8 hours).

Point 2 in Appendix B of the afore-stated Decree establishes that the measurement referring to the reference time (TR) can be performed:

a) with continual integration;

b) with a sampling technique.

In the case of b) the Laeq value, TR is calculated as an average of the values of the continual level that is an equivalent of the sound pressure assessed \bar{p} related to the intervals of the observation time (T0).

D.P.C.M. 14/11/97 calculation of the limit values of the sources of sound to Art. 4 application of the differential criterion.

Given the Decree 11 December 1996 application of the differential criterion for the continual production cycle plants:

1. The provisions of this decree apply to continual production cycle plants located in areas that are different than those which are solely industrial, as defined in the Decree of the President of the Republic 1 March 1991, Art. 6, paragraph 1, and Appendix B, table 2, or whose activity deploys its effects in areas different than those which are solely industrial.

Art. 2.

Definitions.

For the purposes of the application of this decree, the following are intended for:

continual production cycle plants:

a) whose activity can't be interrupted without causing damages to the plant itself, danger of accidents or changes to the product or for the need of continuity aimed at guaranteeing the supply of an essential public service;

b) whose operation is regulated by Italian national collective work contracts or the legal provisions on twenty-four hours for weekly cycles, apart from the maintenance requirements; the existing continual production cycle plant, those in operation or licensed for operation or for which the licence application was presented for operation before this decree came into force;

residential environment as defined in Art. 2, paragraph 1, letter b) of the law 26 October 1995, n. 447.

Art. 3.

Criteria for the application of the differential criterion.

1. The obligation to observe the limits of the fixed area remains the same following the adoption of the municipal measures in Art. 6, paragraph 1, letter a), of the law 26 October 1995, no. 447, the existing continual production cycle plants are subject to the provisions in Art. 2, paragraph 2, of the Decree of the President of the Republic 1 March 1991 (differential criterion) when the absolute input values are not observed, as defined by Art. 2, paragraph 1, letter f) of the law 26 January 1995, no. 447.

2. The provision of Art. 6, paragraph 1, letter d) and Art. 8, paragraph 4 of the law 26 October 1995, no. 447 remains the same for the continual production cycle plants, done after this decree came into force, the observance of the differential criterion is the necessary condition for the issuing of the relative concession.

3. Until the issuing of the ministerial decree in Art. 3, paragraph 1, letter c) of the law 26 October 1995, no. 447, for the verification of the observance of the differential criterion, the instrumentation and the measurement means are those set out in Appendix B of the Decree of the President of the Republic 1 March 1991.

Measurement conditions:

The measurements were taken with the microphone protected by a suitable windproof filter at a height of 1.5 metres from the ground at distances greater than one metre from the walls or obstacles in general. The preferred measurement equipment consists of a 1st class integrator sound meter according to the standards EN 60651/1994 and EN 60804/1994 NORSONIC:

Type: 110, serial: 24710, including suitable microphone

Norsonic type 1220 serial: 24857, suitable for the survey of values of the equivalent level of Leq expressed in dB(A), in real time, according to the standards IEC 1260, EN 61094 - 1/1994, EN 61094-2/1993, EN61094- 3/1995, EN61094 - 4/1995. The calibration was performed at the start and end of the measurements with the Bruel & Kjaer calibrator type 4230 according to the standard IEC 942/1998, calibration certificate no. 24902 dated 15/11/2007.

The exact positions of the measurement points are indicated in the photography attached to this report.



The weather conditions were normal: there was no atmospheric precipitation or wind. The air humidity level was 62 %, measured with a portable hygrometer. Considering the lack of particular or extraordinary events, the time of measurement was chosen at a level equivalent Leq equal to 5 minutes, with continual measurements for the whole of the observation period described.

Description of measurement points

- Date of execution of the surveys

The surveys were performed during the day on Thursday 10 and Friday 11 January 2008.

- Reference time

Daytime period (06:00-22:00)

Night-time period (22:00-06:00)

- Observation time

From 15:30 to 16:00 daytime period on 10/01/2008

From 22:15 to 22:45 night-time period on 11/01/2008

The surveys were performed in three mobile stations:

The first at 3 m, the second at 6 m and the third at 9 m around the filtering station, indicated in the photography illustrating the territory.

MEASUREMENT STATION

Point A distance of 3 m from the Filtering Station in the daytime and night-time period.

Sound survey measurement in order to survey the levels of Sound Pressureö decibel dB(A), with reference to the efficient pressure of 20×10^{-6} Newton/m² (Pascal).

To proceed to the measurement of the Equivalent Sound levels with measurement in frequency A, the sound meter was set up in the following way:

- Time measurement: Fast;

- Measurement in Frequency: A

- Type of Sound Field; Frontal (in free field)

- Background Scale: Regulated appropriately from case to case

Point B distance of 6 m from the Filtering Station in the daytime and night-time period

Point C distance of 9 m from the Filtering Station in the daytime and night-time period

The survey must be performed both with windows open and closed in order to identify the most serious situation.

The differential noise level is the difference between the environmental noise level (that is to say, what is present when the source of noise is in operation that causes disturbance) and the level of residual noise (that is to say, background noise).

The differential noise level must not exceed the following values of differential input levels (Art. 4 paragraph 1 of the DPCM 14/11/97).

5 dB(A) for the daytime period

3 dB(A) for the night-time period

The differential limit values do not apply in the following cases as every effect of noise disturbance is to be deemed unimportant (art. 4, paragraph 2 of the DPCM 14/11/97):

a) if the measured noise with the windows open is less than 50 dB(A) during the daytime period and 40 dB(A) during the night-time period;

b) if the environmental noise level measured with the windows closed is less than 35 dB(A) during the daytime period and 25 dB(A) during the night-time period.

In this case, the identification of the most serious situation is intended as being with the windows open.

DIFFERENTIAL CRITERION

Application of the differential criterion on Thursday 10/01/08 in the daytime period

ENVIRONMENT NOISE

Main sources: Filtering Station

Environment noise level at 3 m. Point A

Leq in dB(A) from 15:30 to 15:35

Value measured 58.5 dB(A)

Environment noise level at 6 m. Point B

Leq in dB(A) from 15:40 to 15:45

Value measured 57.5 dB(A)

Environmental noise level at 9 m. Point C

Leq in dB(A) from 15:50 to 15:55

Value measured 56.0 dB(A)

RESIDUAL NOISE

Residual noise level (background) daytime

Value measured 54.5 dB(A)

APPLICATION OF THE DIFFERENTIAL CRITERION

Environmental noise	Residual noise	Difference
Leq in dB(A)	Leq in dB(A)	dB(A)
Point A 58.5		4.0
Point B 57.5	54.5	3.0
Point C 56.0		2.5

The maximum differential limit: 5 dB in the daytime period

It is observed that the differential limit is respected for the daytime period.

Application of the differential criterion on Friday 11/01/08 in the night-time period

ENVIRONMENTAL NOISE

Main sources: Filtering Station

Environmental noise level at 3 m. Point A

Leq in dB(A) from 22:15 to 22:20

Value measured 49.5 dB(A)

Environmental noise level at 6 m. Point B

Leq in dB(A) from 22:25 to 22:30

Value measured 49.0 dB(A)

Environmental noise level at 9 m. Point C

Leq in dB(A) from 22:35 to 22:40

Value measured 48.5 dB(A)

RESIDUAL NOISE

Residual noise level (background) daytime

Value measured 46.5 dB(A)

APPLICATION OF THE DIFFERENTIAL CRITERION

Environmental noise	Residual noise	Difference
Leq in dB(A)	Leq in dB(A)	dB(A)
Point A 49.5		3.0
Point B 49.0	46.5	2.5
Point C 48.5		2.0

The maximum differential limit: 3 dB in the night-time period

It is observed that the differential limit is respected for the night-time period.

OBSERVATIONS AND CONCLUSIONS

The sound climate of the area concerned is NOT influenced by the noise generated by the FILTERING STATIONS.

The noise level measured (in the various distances) is lower than the limit set by the differential criterion both during the daytime and night-time periods.

Teolo, 14 January 08

Environmental Sound Technician

Geom. Manuel Faggin