REPORTE TÉCNICO DECRETO SUPREMO N°38/11 DEL MINISTERIO DEL MEDIO AMBIENTE

Norma de Emisión de Ruidos Generados por Fuentes que Indica

FICHA DE EVALUACIÓN DE NIVELES DE RUIDO

IDENTIFICACIÓN DE LA FUENTE EMISORA DE RUIDO

Nombre Fuente Emisora	EDIFICIO PAUL CLAUDEL		
Nombre o Razón Social	Constructora Inarco		
RUT	96513310-0		
Dirección	Avenida Vitacura 3435	Comuna	Vitacura
Tipo de Fuente	Faena Constructiva	Subtipo Fuente	Construcción

RESUMEN DE EVALUACIÓN

Punto de medición	NPC [dBA]	Zona D.S. 38/11 MMA	Período (Diurno/Nocturno)	Límite [dBA]	Estado (Supera/No supera)
EPC - 1	75	Zona III	Diurno	65	Supera en 10 dBA

OBSERVACIONES DEL PROCESO DE MEDICIÓN

Sin observaciones

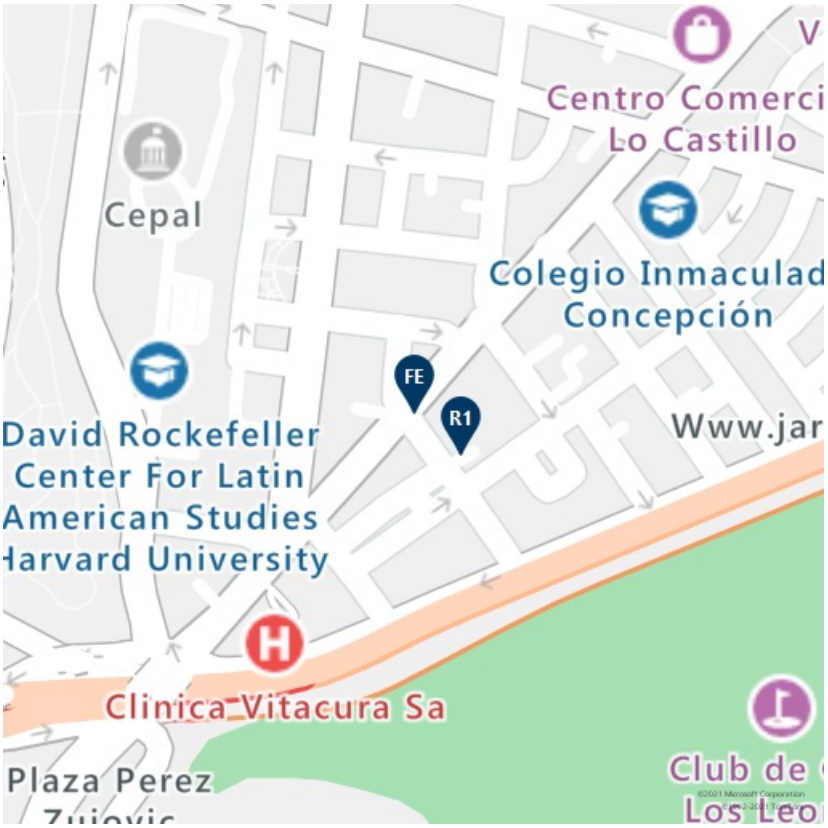
IDENTIFICACIÓN DEL INFORME TÉCNICO

Fecha de emisión	18/11/2021
Nombre encargado medición	Matias Tapia
Institución o empresa	SMA

REPORTE TÉCNICO DECRETO SUPREMO N°38/11 DEL MINISTERIO DEL MEDIO AMBIENTE

Norma de Emisión de Ruidos Generados por Fuentes que Indica

FICHA DE GEORREFERENCIACIÓN DE MEDICIÓN DE RUIDO



LEYENDA DE CROQUIS O IMAGEN UTILIZADA

DATUM	WGS84	Huso	19S	
Fuente	Símbolo	Nombre	Coordenadas	
	FE	Constructora Inarco	N	6302664
			E	351473

RECEPTORES

Símbolo	Nombre	Coordenadas	
R1	EPC	N	6302614
		E	351532

REPORTE TÉCNICO DECRETO SUPREMO N°38/11 DEL MINISTERIO DEL MEDIO AMBIENTE

Norma de Emisión de Ruidos Generados por Fuentes que Indica

FICHA DE INFORMACIÓN DE MEDICIÓN DE RUIDO

IDENTIFICACIÓN DE RECEPTORES

Nombre o Razón Social	EPC		
Dirección	Paul Claudel 1501 Depto 602	Comuna	Vitacura
Zona IPT	U-V	Homologación	Zona III
Descripción del Receptor	Departamento de edificio, en cara norte.		

REPORTE TÉCNICO DECRETO SUPREMO N°38/11 DEL MINISTERIO DEL MEDIO AMBIENTE

Norma de Emisión de Ruidos Generados por Fuentes que Indica

FICHA DE MEDICIÓN DE NIVELES DE RUIDO

Nombre o Razón Social Receptor	EPC	Número Medición	1
Fecha de medición	26/08/2021	Perido de medición	Diurno
Hora inicio de medición	09:39	Hora término de medición	09:49
Condición de medición	Interna	Condición ventana	Abierta
Descripción lugar de medición	Balcón de departamento, dirección noreste.		
Identificación del ruido de fondo	Tráfico por Av. Vitacura. No se percibe al momento de la medición.		

INSTRUMENTAL DE MEDICIÓN

CARACTERÍSTICA	SONÓMETRO	CALIBRADOR ACÚSTICO
Marca	01 DB	01 DB
Modelo	FUSION 40CD	CAL31
N° de serie	12223	88150
Fecha certificado de calibración	04/10/2019	04/10/2019
Código certificado de calibración	TR-DTE-L-19-PVE-71342	CE-DTE-L-19-PVE-71342

FICHA DE EVALUACIÓN DE NIVELES DE RUIDO

Descriptor	MEDICIÓN 1			MEDICIÓN 2			MEDICIÓN 3		
N° de medición	1	2	3	4	5	6	7	8	9
NPSeq	67.3	64.8	69.0	64.5	70.9	70.1	70.2	70.0	70.2
NPSmáx	67.5	68.7	75.7	69.8	77.0	75.6	73.0	79.5	80.0
NPSmin	58.0	58.2	58.7	59.9	65.0	65.5	63.2	63.6	61.5

REGISTRO RUIDO DE FONDO

Afecta medición	No	Fecha	No Aplica	Hora	No Aplica

	5'	10'	15'	20'	25'	30'
NPSeq	-	-	-	-	-	-

Medición realizada en punto receptor
No Aplica

RESULTADO DE MEDICIÓN

RUIDO DE FONDO
No Aplica

NPC
75

OBSERVACIONES

FUSION Smart Sound & Vibration Analyzer

Tests report, according to the IEC 61672-3 : 2013

01dB

ACOEM Group

01dB.com

01dB-Metravib

cofrac ESSAIS
Accreditation
No. 1-6469
Scope available on
www.cofrac.fr

Tests report

TR-DTE-L-19-PVE-71342

ISSUED FOR :

SPEVI LTDA

Malaquias Concha 086
PROVIDENCIA

750-1552 SANTIAGO
Chile

Name and location of the laboratory of tests:
01 dB-Metravib - 200, Chemin des Ormeaux 69578 Limonest
Accredited for compliance with ISO/IEC 17025.

TESTED INSTRUMENT
Designation : Integrator Sound Level Meter

Manufacturer : 01dB

Type : FUSION 40CD

Serial number : 12223

Identification number :

Date of issue : 04/10/2019

This report includes 7 pages

The measurements are performed according to the IEC 61672-3 : 2013, Electroacoustics, - Sound level meters – Part 3: Periodic tests.

HEAD OF THE METROLOGY LAB
François MAGAND

04/10/2019

X

Signé par : MAGAND Francois

Identification :

	Sound level meter	Microphone	Accessories
Manufacturer	01dB	GRAS	
Type	FUSION 40CD	40CD	Windscreen
Serial number	12223	367026	
Firmware version	Application: 2,47 Metrology: 2,12		
Calibrator	**01dB CAL31 N° 88150 +**		

Program:

The Sound level meter has been tested on the following characteristics:

- Self-generated noise*
- Acoustical signal tests of a frequency weightings
- Electrical signal tests of frequency weightings
- Frequency and time weightings at 1 kHz*
- Long-term stability*
- Level linearity*
- Toneburst response*
- C-weighted peak sound level*
- Overload indication*
- High-level stability*

* Tests not covered by the COFRAC accreditation

Method:

The instrument is tested in an air conditioned room. The other characteristics are verified with multimeter and generator calibrated in amplitude and in frequency. Some manufacturer's corrections have been applied to account the acoustical effect from the case of the sound level meter and his accessories (IEC 61672-3 : 2013). These corrections are available in the sound level meter user manual.
The reference frequency of the sound level meter is 1000 Hz. The reference sound pressure level of the sound level meter is 94 dB. The sound level meter possesses a single level range.

Tests conditions:

Date of tests	04/10/2019
Operator Name	04/10/2019 X Signé par : LEROY Bertrand
Tests instruction	MET.18.INS.083
Static pressure	>95,5 ; <105 kPa
Temperature	23 ± 3 °C
Relative humidity	>25 ; <70 %HR

Instruments used for tests:

Designation	Manufacturer	Type	Serial number	Identification number
Waveform generator	Hewlett-Packard	33120A	US36028927	APM 1153
Progammable Attenuator	01dB-Metravib	OUT1694	17-10-207	APM 5955
Electrostatic actuator	Gras	14AA+RA0014	181068	APM 5423
Thermometer, hygrometer, barometer	COMET	T7511	18960232	APM 5858

All the measuring instruments are calibrated to national standards with COFRAC certificate of calibration.

Results:

Mentioned expanded uncertainties correspond to two standard uncertainty types (k=2). The measurement value and the associated expanded uncertainty represent the interval which contains the value of measured quantity with a probability of approximately 95 %.
Standard uncertainties are calculated including different uncertainty components, reference standards, instruments used, environmental conditions, calibrated instrument contribution, repeatability, according to ISO/IEC Guide 98-3 (GUM).

Mentioned Maximum Permissible Errors (M.P.E.) are the ones defined in the IEC 61672-1 : 2013 for a class 1 sound level meter.

Associated calibrator

See the calibration certificate n°CE-DTE-L-19-PVE-71342

Indication at the calibration check frequency*

Initial indication (dB)	Correction (dB)	Adjusted indication (dB)	Tolerance (dB)
93,4	-0,5	93,3	+/- 1,0

Self-generated noise*

0° + windscreen

Microphone replaced by the electrical input-signal device	Nominal value (dB)	Displayed value (dB)
Leq dBA	< 18	9,0
Leq dBB	< 18	8,2
Leq dBC	< 19	9,1
Leq dBZ	< 22	12,8

Microphone installed	Nominal value (dB)	Displayed value (dB)
Leq dBA	< 21	17,8

Acoustical signal tests of a frequency weightings

0° + windscreen	Measurement error C (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
125 Hz	-0,2	0,3	+/- 1,0
1000 Hz	0,0	0,3	+/- 0,7
8000 Hz	-0,6	0,5	-2,5 ; +1,5

Electrical signal tests of frequency weightings

0° + windscreen	Measurement error Z (dB)	A (dB)	C (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
63 Hz	-0,3	-0,3	-0,3	0,4	+/- 1,0
125 Hz	-0,2	-0,4	-0,2	0,4	+/- 1,0
250 Hz	-0,2	-0,3	-0,2	0,4	+/- 1,0
500 Hz	0,0	-0,1	0,0	0,4	+/- 1,0
1000 Hz	0,0	0,0	0,0	0,4	+/- 0,7
2000 Hz	0,3	0,4	0,4	0,4	+/- 1,0
4000 Hz	0,4	0,4	0,4	0,4	+/- 1,0
8000 Hz	0,3	-0,2	-0,2	0,7	-2,5 ; +1,5
16000 Hz	-1,1	-6,5	-6,5	0,7	-16,0 ; +2,5

Frequency and time weightings at 1 kHz*

0° + windscreen	Displayed value (dB)	Measurement error (dB)	Uncertainty (dB)	M.P.E. (dB)
Lp 94 dBA / 1000 Hz	93,8	Reference		
Lp 94 dBA / 1000 Hz	93,8	0,0	0,1	+/- 0,2
LEQ 94 dBA / 1000 Hz	93,8	0,0	0,1	+/- 0,2
Lp 94 dBC / 1000 Hz	93,8	0,0	0,1	+/- 0,2
Lp 94 dBZ / 1000 Hz	93,8	0,0	0,1	+/- 0,2

Long-term stability*

0° + windscreen

Displayed value (dB) Initial indication	Final indication	Measured deviation (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
93,9	93,9	0,0	0,1	+/- 0,1

Tests report:
TR-DTE-L-19-PVE-71342

Level linearity*

0° + windscreen

Nominal value (dB)	Displayed value (dB)	Measurement error (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
94,0	94,0	0,0	0,3	+/- 0,8
99,0	99,1	0,1	0,3	+/- 0,8
104,0	104,0	0,0	0,3	+/- 0,8
109,0	109,0	0,0	0,3	+/- 0,8
114,0	113,9	-0,1	0,3	+/- 0,8
119,0	118,9	-0,1	0,3	+/- 0,8
124,0	123,8	-0,2	0,3	+/- 0,8
129,0	128,8	-0,2	0,3	+/- 0,8
130,0	129,8	-0,2	0,3	+/- 0,8
131,0	130,9	-0,1	0,3	+/- 0,8
132,0	131,8	-0,2	0,3	+/- 0,8
133,0	132,8	-0,2	0,3	+/- 0,8
134,0	133,9	-0,1	0,3	+/- 0,8
94,0	94,0	0,0	0,3	+/- 0,8
89,0	89,1	0,1	0,3	+/- 0,8
84,0	84,1	0,1	0,3	+/- 0,8
79,0	79,1	0,1	0,3	+/- 0,8
74,0	74,0	0,0	0,3	+/- 0,8
69,0	69,1	0,0	0,3	+/- 0,8
64,0	64,1	0,1	0,3	+/- 0,8
59,0	59,1	0,1	0,3	+/- 0,8
54,0	54,0	0,0	0,3	+/- 0,8
49,0	49,1	0,0	0,3	+/- 0,8
44,0	44,1	0,1	0,3	+/- 0,8
39,0	39,1	0,1	0,3	+/- 0,8
34,0	34,0	0,0	0,3	+/- 0,8
29,0	29,1	0,1	0,3	+/- 0,8
27,0	27,1	0,1	0,3	+/- 0,8
26,0	26,2	0,2	0,3	+/- 0,8
25,0	25,2	0,2	0,3	+/- 0,8
24,0	24,2	0,2	0,3	+/- 0,8
23,0	23,3	0,3	0,3	+/- 0,8

Toneburst response*

0° + windscreen

Description	Displayed value (dB)	Measurement error (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
135 dB 4000 Hz A Slow 200 ms	127,6	0	0,1	+/- 0,5
135 dB 4000 Hz A Slow 2 ms	108	0	0,1	-3,0 ; +1,0
135 dB 4000 Hz A fast 200 ms	134	0	0,1	+/- 0,5
135 dB 4000 Hz A fast 2 ms	117	0	0,1	-1,5 ; +1,0
135 dB 4000 Hz A fast 0,25 ms	107,9	-0,1	0,1	-3,0 ; +1,0
135 dB 4000 Hz A 1000 200 ms	128	0	0,1	+/- 0,5
135 dB 4000 Hz A 1000 2 ms	108	0	0,1	-1,5 ; +1,0
135 dB 4000 Hz A 1000 0,25 ms	98,9	-0,1	0,1	-3,0 ; +1,0

C-weighted peak sound level*

0° + windscreen

Description	Displayed value (dB)	Measurement error (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
8000 Hz Complete cycle	135,9	0,5	0,1	+/- 2,0
500 Hz Positive one-half-cycle	135,4	0,0	0,1	+/- 1,0
500 Hz Negative one-half-cycle	135,4	0,0	0,1	+/- 1,0

Overload indication*

0° + windscreen

Displayed value (dB)		Measured deviation (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
Positive one-half-cycle	Negative one-half-cycle			
106,1	106,2	0,0	0,2	+/- 1,5

High-level stability*

0° + windscreen

Displayed value (dB)		Measured deviation (dB)	Uncertainty (dB)	Maximum Permissible Error (dB)
Initial indication	Final indication			
136,6	136,6	0,0	0,1	+/- 0,1

Conclusion

IEC 61672-3 : 2013 Chapter:	Tests	Results
10	Indication at the calibration check frequency*	Compliant
11	Self-generated noise*	Compliant
12	Acoustical signal tests of a frequency weighting	Compliant
13	Electrical signal tests of frequency weightings	Compliant
14	Frequency and time weightings at 1 kHz*	Compliant
15	Long-term stability*	Compliant
16	Level linearity on the reference level range*	Compliant
18	Toneburst response*	Compliant
19	C-weighted peak sound level*	Compliant
20	Overload indication*	Compliant
21	High-level stability*	Compliant

* Tests and declarations of compliance not covered by the COFRAC accreditation

FUSION user manual	DOC1131 version K August 2017
Type-approval certificate	France: LNE-27092 revision 2 dated 04/04/2017 Deutschland: DE-16-M-PTB-0006 dated 09/28/2016

End of tests report

01dB-Metravib

cofrac ETALONNAGE Accreditation No. 2-6372 Scope available on www.cofrac.fr

Calibration Certificate

CE-DTE-L-19-PVE-71342

ISSUED FOR : SPEVI LTDA
Malaquias Concha 086
PROVIDENCIA

750-1552 SANTIAGO
Chile

Name and location of the laboratory of calibration:
01 dB-Metravib - 200, Chemin des Ormeaux 69578 Limonest
Accredited for compliance with ISO/IEC 17025.

TESTED INSTRUMENT
Designation : Sound calibrator

Manufacturer : 01dB

Type : CAL31 Serial number : 88150

Identification number :

Date of issue : 04/10/2019

This certificate includes 3 pages

The measurements are performed according to the IEC 60942, Electroacoustics, - Sound calibrators.

HEAD OF THE METROLOGY LAB
François MAGAND

04/10/2019

X

Signé par : MAGAND Francois

THIS CERTIFICATE is compliant with THE FD X 07-012 STANDARD DOCUMENTATION

Identification :

	Sound calibrator
Manufacturer	01dB
Type	CAL31
Serial number	88150
Adaptor	

Calibration Program:

The calibrator has been calibrated on different characteristics:
- Acoustic pressure level
- Acoustic signal frequency
- Total distortion + noise

Calibration Method:
The instrument has been calibrated in a air conditioning room. The characteristics are measured on a measuring chain which used a calibrated acoustic calibrator as reference.
The total distortion + noise is measured using a rejection filter device (distortion factor meter).

Calibration conditions:

Date of calibration	04/10/2019
Operator Name	X
Calibration instruction	MET.18.INS.084
Static pressure	>95,5 ; <105 kPa
Temperature	23 ± 3 °C
Relative humidity	>25 ; <70 %HR

Instruments used for calibration:

Designation	Manufacturer	Type	Serial number	Identification number
Multimeter	Helwet-Packard	34401A	US36016215	APM 5420
Distortion meter	Helwet-Packard	8903E	3514A01314	APM 5427
Conditioner	GRAS	12 AK	193470	APM 5426
Calibrator	GRAS	42AP	82065	APM 1470
Microphone	GRAS	40AP	340589	APM 6041
Preamplifier	01dB	PRE21A	20931	APM 5889
Thermometer, hygrometer, barometer	COMET	T7511	18960232	APM 5858

All the measuring instruments are calibrated to national standards with COFRAC certificate of calibration.

Results:

Mentioned expanded uncertainties correspond to two standard uncertainty types (k=2). The measurement value ar associated expanded uncertainty represent the interval which contains the value of measured quantity with a probab approximately 95 %.
Standard uncertainties are calculated including different uncertainty components, reference standards, instruments environmental conditions, calibrated instrument contribution, repeatability, according to ISO/IEC Guide 98-3 (GUM).

This calibration certificate guarantees the traceability of calibration measurements to the International System of Uni

Cofrac is signatory of the European co-operation for Accreditation (EA) and of International Laboratory Accreditation Cooperation (Ilac) multilateral agreement. EA signatories recognise the equivalence of calibration certificates issued agreement signatories.

	Nominal value	Displayed value	Measurement error	Expanded uncertainty	Max permiss cla
Frequency (Hz)	1000,0	1000,4	0,4	0,1	±
Level (dB)	94,00	93,81	-0,19	0,15	±
Total distortion + noise (%)		0,5		0,3	

Calibrator user manual	NOT1406 September 2016 G - CAL21 CAL02 User Manual FR_EN
Type-approval certificate	France: LNE-30010 rev. 0 01 Sept. 2015 Deutschland: PTB 21.51 03.01 27 Jan. 2003

Conclusion:

The sound calibrator was shown in compliance with the requirements of periodic tests described to the appendix B c 60942: 2017 standard, for the sound calibrator of class 1, concerning the level of acoustic pressure, the frequency a distortion, specified for the conditions of environment in which the tests were realized.

This declaration of compliance isn't covered by the COFRAC accreditation.

End of calibration certificate