

Report VA6527.260903.NIA

98 Winchester Road, Chandler's Ford

Noise Impact Assessment

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Contents

1.	Introduction	1
2.	Guidance and Legislation.....	1
2.1	Eastleigh Borough Council Requirements.....	1
2.2	Permitted Development – Class MA.....	2
2.3	The National Planning Policy Framework (2026)	3
2.4	Noise Policy Statement for England (2010).....	5
2.5	BS4142:2014+A1:2019	6
2.6	WHO Guidelines for Community Noise (1999).....	6
2.7	BS8233:2014	7
3.	Site Description	7
4.	Environmental Noise Survey	7
4.1	Survey Procedure & Equipment	8
4.2	Results	8
5.	BS4142 Noise Impact Assessment	9
5.1	Source Noise Levels	9
5.2	Acoustic Character Correction	9
5.3	Rating Level and Assessment	10
5.4	Context	10
5.5	Uncertainty	11
6.	Internal Noise Assessment	11
6.1	Sound Reduction Performances of Building Elements	12
6.2	Sound Reduction Performance of Windowsets and Vents	12
6.3	Windowset Performances	12
7.	Sound Insulation to Ground Floor.....	13
7.2	Test Results	14
7.3	Discussion	14
8.	Conclusion.....	14

Attachments

VA6527/SP1	Indicative Site Plan
VA6527/TH1-TH9	Environmental Noise Time Histories
VA6527/AB1	Sound Insulation Test Result
Appendix A	Acoustic Terminology

Report Version	Author	Approved	Changes	Date
NIA	Jamie Duncan	Ben Alexander	-	4/9/26

The interpretations and conclusions summarised in this report represent Venta Acoustics' best technical interpretation of the data available to us at the time of assessment. Any information provided by third parties and referred to in this report has not been checked or verified by Venta Acoustics, unless otherwise expressly stated in the document. Venta Acoustics cannot accept any liability for the correctness or validity of the information provided. Due to a degree of uncertainty inherent in the prediction of all parameters, we cannot, and do not guarantee the accuracy or correctness of any interpretation and we shall not, except in the case of gross or wilful negligence on our part, be liable for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretations, predictions or conclusions made by the company or employees. The findings and conclusions are relevant to the period of the site survey works, and should not be relied upon to represent site conditions at later dates. Where additional information becomes available which may affect the findings of our assessment, the author reserves the right to review the information, reassess the findings and modify the conclusions accordingly.

1. Introduction

An application is to be submitted for the conversion of the first floor of 98 Winchester Road, Chandler's Ford from commercial to residential use under Class MA of the General Permitted Development Order.

Venta Acoustics has been commissioned by RS Studio to undertake an assessment of the current environmental noise impact on the site and provide recommendations of acoustic mitigation, where required, in support of an application for planning permission.

An environmental noise survey has been undertaken to determine the noise levels incident on the site. These levels are then used to undertake an assessment of the likely impact in accordance with the National Planning Policy Framework with reference to relevant standards, guidance and the planning requirements of Eastleigh Borough Council.

Outline mitigation measures are considered and an appraisal of the requirements of external building fabric elements is provided.

2. Guidance and Legislation

2.1 Eastleigh Borough Council Requirements

The following comment has been provided by the Environmental Health Officer on the application.

Thanks for consulting the Pollution Team on the planning application PN/26/101739 for the Prior Notification for the creation of 1no. 2-bedroom flat from Class E with the retention of Class E at the ground floor (Permitted Development) at 98 WINCHESTER ROAD, CHANDLER'S FORD, EASTLEIGH, SO53 2GJ.

I reviewed the proposed plans and RS Studio Covering Letter reference 1964 L01 Rev 0 dated 01 June 2026.

The proposed bedrooms will be facing WINCHESTER ROAD. The back of the property gives access to the access road for the neighbouring commercial units and existing plant can be a noise risk.

A noise assessment is required to determine the glazing and ventilation specifications necessary to mitigate external noise impacts on the proposed residential unit. The assessment should include noise monitoring at both façades over a representative survey period, including at least one weekend, and follow BS 8233 criteria.

In addition, the noise report should assess whether the separating party floor between the ground-floor Class E commercial unit and the first-floor residential accommodation meets the airborne and impact sound insulation requirements set out in Part E of the Building Regulations.

2.2 Permitted Development – Class MA

Class MA of the General Permitted Development Order provides the following requirements.

Conditions

MA.2. (1) *Development under Class MA is permitted subject to the conditions*

(2) *Before beginning development under Class MA, the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to—*

- (a) transport impacts of the development, particularly to ensure safe site access;*
- (b) contamination risks in relation to the building;*
- (c) flooding risks in relation to the building;*
- (d) impacts of noise from commercial premises on the intended occupiers of the development;*
- (e) where—*
 - (i) the building is located in a conservation area, and*
 - (ii) the development involves a change of use of the whole or part of the ground floor,*

the impact of that change of use on the character or sustainability of the conservation area;

- (f) the provision of adequate natural light in all habitable rooms of the dwellinghouses;*
- (g) the impact on intended occupiers of the development of the introduction of residential use in an area the authority considers to be important for general or heavy industry, waste management, storage and distribution, or a mix of such uses; and*
- (h) where the development involves the loss of services provided by—*
 - (i) a registered nursery, or*
 - (ii) a health centre maintained under section 2 or 3 of the National Health Service Act 2006(4), the impact on the local provision of the type of services lost.*

(3) *An application for prior approval for development under Class MA may not be made before 1 August 2021.*

(4) *The provisions of paragraph W (prior approval) of this Part apply in relation to an application under this paragraph as if in the introductory words in sub-paragraph (5), for “and highways impacts of the development” there were substituted “impacts of the development, particularly to ensure safe site access”.*

(5) Development must be completed within a period of 3 years starting with the prior approval date.

(6) Any building permitted to be used as a dwellinghouse by virtue of Class MA is to remain in use as a dwellinghouse within the meaning of Class C3 of Schedule 1 to the Use Classes Order and for no other purpose, except to the extent that the other purpose is ancillary to the use as a dwellinghouse.”.

Part 3, paragraph W(10)(b) of the GPDO states that the local planning authority must, when determining an application, have regard to the National Planning Policy Framework so far as relevant to the subject matter of the prior approval as if the application were a planning application.

2.3 The National Planning Policy Framework (2026)

The *National Planning Policy Framework* (NPPF), published in August 2026, sets out the Government’s planning policies for England, superseding all previous planning policy statements and guidance.

The NPPF addresses noise through policies focused on public protection, planning design, transport, and minerals development.

P1: Planning for clean and safe places

1. *To support efforts to avoid and mitigate risks from natural and man-made hazards, minimise levels of pollution and create clean, liveable and safe places for people to live, work and visit, development plans should:*
 - b. *Consider any wider opportunities to reduce air, water, soil, noise or other forms of pollution, and contribute to compliance with national and local environmental targets and objectives, through the spatial strategy and policies for specific parts of the plan area (such as by identifying opportunities for strategic nature-based solutions);*

P3: Living conditions and pollution

2. *Development proposals should be appropriate for their location, taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, whether these effects are on or off-site; and whether this is as a result of the development itself or the product of preexisting conditions in its vicinity. In assessing the potential effects of pollution, consideration should be given to the potential sensitivity of the site, and its intended occupiers and users, as well as that of the environment and population in the surrounding area (including where certain groups could be particularly vulnerable to its effects, such as children and older people).*

Within this context development proposals should:

- a. *Provide healthy living conditions for occupiers and users in terms of adequate access to light and avoiding exposure to levels of air, noise, artificial light or other sources of*

pollution which could have an unacceptable adverse effect on health and the quality of life. Where necessary suitable mitigation measures should be incorporated to secure acceptable living conditions;

- b. Not give rise to, or contribute to, an unacceptable level of access to daylight and sunlight for neighbouring residents and occupiers, or unacceptable levels of air, noise, artificial light, water, soil or other forms of pollution on or beyond the site. Adverse impacts of this nature should be avoided where possible, or else mitigated to an acceptable degree. Where possible, opportunities should be taken to reduce pollution affecting the wider area (such as through traffic and travel management or improved external lighting);*
- d. Mitigate and reduce to a minimum potential adverse impacts resulting from noise, not result in levels of noise exposure which would have a significant observed adverse effect, and maintain the character of tranquil areas (those areas that have remained relatively undisturbed by noise from human sources and are prized for their recreational and amenity value for this reason);*

P4: Impact of development on existing activities

- 1. Existing businesses, community facilities, public services and defence and security activities should not have unreasonable restrictions placed on their current or permitted operation as a result of development being approved after they were established. This means that development proposals should be capable of being integrated effectively with existing business, community and public service activities and infrastructure in their vicinity (including, but not limited to, uses such as pubs, music venues, places of worship, sports clubs, blue light services, defence, electricity network infrastructure and industrial and waste sites).*
- 2. Where the operation of an existing activity could have a significant adverse effect on a proposed new development in its vicinity, development proposals should:*
 - a. Identify the nature of the potential impacts, informed where necessary by early discussions between the applicant (i.e. the 'agent of change') and those existing uses which could be affected by the proposal to inform the scope for mitigation; and*
 - b. Be able to demonstrate that suitable mitigation can be provided before first occupation of the development, if it is to be acceptable. Planning conditions or obligations should be used to secure agreed mitigation measures.*
- 3. This policy applies to new development involving changes of use of land and property, as well as to new construction, and includes situations where new development may interfere with the operation of electronic communications networks. Both lawful current and*

permitted levels of operation of existing activities should be taken into account when applying this policy.

P6: Land and operations for defence and public safety

4. *Substantial weight should be attached to the importance of sites, activities, facilities and infrastructure required to maintain and enhance defence capability, or whose primary purpose is public safety (including uses such as coastal protection works, coastguard and lifeboat facilities and emergency services telecommunications infrastructure), when considering:*
 - b. *Proposals which could affect their operational activity and capability, including situations where other development should only proceed where it can make alternative or replacement provision for defence or public safety operations which would otherwise be affected, or where noise from operational activities could affect the proposed development (in which case policy P4 should also be applied).*

With regard to the term adverse impact, this concept is introduced in the Noise Policy for England.

2.4 Noise Policy Statement for England (2010)

The Noise Policy Statement for England (NPSE) sets out the long term vision of Government noise policy: to promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

This vision is supported by the following aims:

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life.*

The terms “significant adverse” and “adverse” are related to the following concepts:

No Observed Effect Level (NOEL) - *the level below which no effect on health and quality of life can be detected.*

Lowest Observed Adverse Effect Level (LOAEL) - *the level above which adverse effects on health and quality of life can be detected.*

Significant Observed Adverse Effect Level (SOAEL) - *the level above which significant adverse effects on health and quality of life occur.*

The guidance acknowledges that it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations, but will be different for different noise sources, receptors and times.

In order to enable assessment of impacts in line with these requirements, reference should be made to other currently available guidance.

2.5 BS4142:2014+A1:2019

British Standard BS4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* describes a method for rating and assessing sound of an industrial and/or commercial nature, which includes sound from fixed installations comprising mechanical and/or electrical plant and equipment;

The assessment methodology considers the Specific Sound Level, as measured or calculated at a potential noise sensitive receptor, due to the source under investigation. A correction factor is added to this level to account for the acoustic character of the sound as follows:

Tonality – A correction of up to 6dB depending on the prominence of tones;

Impulsivity - A correction of up to 9dB depending on the prominence of impulsivity;

Other sound characteristics - A 3dB correction may be applied where a distinctive acoustic character is present that is neither tonal nor impulsive;

Intermittency - A 3dB correction may be applied where the specific sound has identifiable on/off conditions.

An estimate of the impact of the source is obtained by subtracting the typical background noise level from the corrected Specific Sound Level.

- Typically, the greater this difference, the greater the magnitude of the impact.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB could be an indication of an adverse impact, depending on the context.

The lower the rating level is relative to the measured background sound level, the less likely it is that there will be an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound having a low impact, depending on the context.

2.6 WHO Guidelines for Community Noise (1999)

The guidance in this document details suitable noise levels for various activities within residential and commercial buildings.

The relevant sections of this document are shown in Table 2.1.

Criterion	Environment	Design range $L_{Aeq,T}$ dB
Maintain speech intelligibility and avoid moderate annoyance, daytime and evening	Living Room	35 dB
Prevent sleep disturbance, night time	Bedrooms	30 dB

Table 2.1 – Excerpt from WHO

[dB ref. 20μPa]

This guidance also states:

For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45dB L_{Amax} more than 10-15 times a night (Vallet & Vernet 1991).

For sleep disturbance, i.e. in bedrooms at night, the NOEL can, therefore, be taken as anything below 30dB(A), whilst the onset of the LOAEL occurs at 30dB(A) and above. The SOAEL cannot be inferred from this information.

2.7 BS8233:2014

BS8233 *Guidance on sound insulation and noise reduction for buildings* provides guidance as to desirable internal ambient noise levels for different areas within residential buildings.

The relevant section of the standard is shown below in Table 2.2.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 dB $L_{Aeq, 16 \text{ hour}}$	-
Dining	Dining Room	40 dB $L_{Aeq, 16 \text{ hour}}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq, 16 \text{ hour}}$	30 dB $L_{Aeq, 8 \text{ hour}}$

Table 2.2 – Excerpt from BS8233:2014 - Indoor ambient noise levels for dwellings

[dB ref. 20μPa]

3. Site Description

As illustrated on attached site plan VA6527/SP1, the first floor is located above a vacant retail unit, with offices at first floor to either side, and estate agents in both of the adjacent retail units.

The dominant noise sources expected to affect the site are road traffic noise to the front of the site, and delivery noise to the Waitrose store to the rear of the building.

4. Environmental Noise Survey

An initial survey was undertaken over between Tuesday 25th and Friday 28th August 2026, with equipment reinstalled on the afternoon of Friday 28th and retrieved on Tuesday 1st September, with one meter installed on the front façade and one to the rear. Unfortunately, the rear sound level meter developed a problem for the weekend survey. For the purposes of the assessment, the noise data for the first survey has been reported for the rear monitoring location, but it is intended to undertake another survey to the rear of the building between Friday 4th and Monday 7th September to verify the noise levels over the weekend to the rear of the building, as requested by EBC Environmental Health.

4.1 Survey Procedure & Equipment

Monitoring was carried out at the locations shown in site plan VA6527/SP1. These locations were chosen to be representative of the noise levels incident upon the new residential dwelling.

Continuous 5-minute samples of the L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} sound pressure levels were undertaken at each of the measurement locations.

The weather during the survey period was generally dry with light winds, with some period of rain, which have been excluded from the analysis.

Measurements were made generally in accordance with ISO 1996 2:2017 *Acoustics - Description, measurement and assessment of environmental noise – Part 2: Determination of sound pressure levels*.

The following equipment was used in the course of the survey:

Manufacturer	Model Type	Serial No	Calibration	
			Certificate No.	Date
Svante Class 1 SLM	971A	162020	1517067-1	12/3/26
Svante Class 1 SLM	958A	59177	1511238-3S	19/2/25
Larson Davis calibrator	CAL200	22561	1516263-1	6/2/26

Table 4.1 – Equipment used for the survey

The calibration of the sound level meters was verified before and after use with no significant calibration drift observed.

4.2 Results

The measured sound levels are shown as time-history plots on the attached charts VA6527/TH1-4 for position 1 (rear) and VA6527/TH5-9 for position 2 (front).

The average façade noise levels for the Daytime and Night-time periods, as measured at the automated monitoring position were:

Monitoring Period	$L_{Aeq, T}$ – façade		Typical ¹ $L_{A90, 5min}$	
	Position 1	Position 2	Position 1	Position 2
07:00 – 23:00	58 dB	71 dB	45 dB	44 dB
23:00 – 07:00	56 dB	61 dB	40 dB	34 dB
08:00 – 21:00 (Waitrose hours)	-	-	47 dB	-

Table 4.2 – Average ambient and typical background noise levels

¹ The typical L_{A90} value is taken as the 10th percentile of all L_{A90} values measured during the relevant period.

The typical night time façade L_{Amax} events were recorded to be in the order of 83 dB $L_{Amax, fast}$ to the front of the building and 78 dB $L_{Amax, fast}$ to the rear.

5. BS4142 Noise Impact Assessment

There is an air conditioning unit serving the ground floor retail unit at 98 Winchester Road located directly outside the proposed new first floor bathroom and kitchen windows. Due to the proximity to the kitchen window (approximately 0.2m), it would not be possible to control noise to acceptable levels from this equipment. However, the ground floor of the premises is under the same ownership as the first floor, so it is recommended that this unit is either removed or relocated to the ground floor level under the retail unit kitchen window, where it will be well screened from the new dwelling.

Observations on site confirmed that noise from plant to the rear of Waitrose is quiet enough that it was not audible and did not control the background noise levels at the receiver. However, the proposed kitchen window to the rear of the building overlooks the Waitrose delivery yard, where lorries manoeuvre and reverse up to the loading dock for unloading of produce.

In addition to the above, there is car parking for the adjacent retail units to the rear of the premises. There are a low number of vehicle movements associated with this, and these are during the daytime, and so the impact on the new dwelling would be expected to be low.

5.1 Source Noise Levels

An assessment of deliveries has been undertaken, which are based upon library data measured at other, similar sites. These are summarised in Table 5.1.

Noise Source	Measurement Distance	Measured L _{Aeq}	Notes
Lorry manoeuvring	8m	73 dB	Assessed to kitchen window, during daytime hours only
Lorry loading/ unloading	5m	61 dB	

Table 5.1 – Measured and library data noise sources used for assessment

5.2 Acoustic Character Correction

The subjective method of allocating corrections to the sound source has been used following the methodology provided in BS4142:2014 and summarised in section 2.5.

Noise Source	Subjective Description	Allocated Corrections
Lorry Manoeuvring	Intermittent deliveries, diesel engine broadband, tonal reversing alarm	Tonality: +2 dB Impulsivity: 0 dB Intermittency: +3 dB
Lorry unloading/loading	Impulsive noise from occasional bangs, clatters, from loading. Intermittent nature of deliveries.	Tonality: 0 dB Impulsivity: +3 dB Intermittency: +3 dB

Table 5.2 – Acoustic character corrections

These penalties are applied to the specific noise level in section 5.3 to obtain the rating level.

5.3 Rating Level and Assessment

The rating levels at the assessment location are compared against the relevant background noise levels to assess the notional significance of the noise impact as follows. Operations are adjusted to the appropriate on times.

Table 5.3 shows the assessment for the manoeuvring on the most affected façade of the new dwellings.

Results		Relevant Clause	Commentary
Source Sound Levels	73 dB @ 8m	7.3.4	HGV manoeuvring
Distance Loss (30m)	-11 dB	7.3.5	Assumed a point source
Specific Sound Level	L _{Aeq} 62 dB		
1 minute per hour	-18 dB	7.2	
Acoustic feature correction	+5 dB	9.2	+2 dB for tonality, +3dB for intermittency
Rating level	L _{Ar} 49 dB	9.2	
Day time background sound level	L _{A90} 45 dB	8	
Excess of rating over background sound level	+4 dB	11	
Assessment indicates less than an adverse impact		11	Depending on context

Table 5.3 – BS4142 Assessment – HGV manoeuvring

Table 5.4 shows the assessment for deliveries on the most affected façade of the new dwellings.

Results		Relevant Clause	Commentary
Source Sound Levels	61 dB @ 5m	7.3.4	Unloading
Distance Loss (40m)	-18 dB	7.3.5	Assumed a point source
Specific Sound Level	L _{Aeq} 43 dB		
30 minutes per hour	-3 dB	7.2	
Acoustic feature correction	+6 dB	9.2	+3 dB for impulsivity, +3dB for intermittency
Rating level	L _{Ar} 46 dB	9.2	
Day time background sound level	L _{A90} 45 dB	8	
Excess of rating over background sound level	+1 dB	11	
Assessment indicates low/less than an adverse impact		11	Depending on context

Table 5.4 – BS4142 Assessment – Deliveries

5.4 Context

The site is located in an existing mixed commercial and residential area.

Within this context, the estimated impact of the sound sources is expected to remain valid or be slightly reduced.

The BS4142 standard aims to cover a wide variety of situations under the same base assessment methodology and so has some inherent shortcomings. To allow for this, the guidance encourages consideration of the site context as a means of adapting the base assessment to specific scenarios.

The base assessment methodology is considered to be weighted towards the more sensitive case of assessing industrial noise upon an existing residential receiver. The introduction of a new residential use to an area with existing sources of commercial noise provides an opportunity to provide appropriate mitigation against the noise sources.

The redevelopment of the site provides an opportunity to provide mitigation in the form of appropriately specified external building fabric elements. This would allow appropriate internal noise levels to be achieved such that the commercial noise source is not considered to be disruptive.

This allows the impact to be significantly reduced for occupants within the dwellings and is considered in section 6. The new dwellings are not proposed to have any external amenity areas and hence internal noise levels are how future residents would experience the noise.

5.5 Uncertainty

This section considers the variable in the assessment that may cause variations within the final results and describes how these have been addressed.

- Use of a Class 1 sound level meter is considered to reduce instrument error to insignificant levels as compared with environmental variations. The calibration of the instrumentation was confirmed before and after the noise surveys.
- The background measurements were undertaken under suitable weather conditions over a period designed to include reasonable temporal variations in background noise levels, including a weekend period. Two monitoring locations were selected to minimise local acoustic phenomenon that may affect a single measurement location, including the noise from the nearby road site. These measurement locations were selected to be representative of the background noise levels expected to be experienced by the proposed dwellings without being unduly influenced by extraneous noise sources.
- Where library data has been used, propagation calculations have been used to correct noise levels to the relevant distance at the receiver.

Overall, the uncertainty is considered to have been minimised to a suitable range so as not to risk significant variations in the impact assessment of typical operations.

6. Internal Noise Assessment

To control sound from the commercial uses, the sound insulation performance of the building glazing will be specified to control the Rating noise level (including BS4142 penalties) to below the recommended values in BS8233. This hybrid approach of assessing commercial noise with a BS4142 penalty against the BS8233 criteria (over a shortened assessment period) is endorsed in the ProPG

(Professional Practice Guidance on Planning and Noise prepared by the Institute of Acoustics, the Chartered Institute of Environmental Health and the Association of Noise Consultants).

Although Class MA of the GPDO only considers commercial noise impacts, the following includes the glazing requirement to control external noise levels, including traffic, to BS8233 levels internally as an informative.

A review of the drawings for the proposed scheme has been undertaken with the intent of achieving the internal noise levels from average and maximum noise levels stated in BS8233 and the WHO Guidelines.

6.1 Sound Reduction Performances of Building Elements

It has been assumed that all the non-glazed elements, i.e. walls and roof systems, will be capable of providing the following minimum sound insulation performance, when tested in accordance with BS EN ISO 10140-2:2021 *Acoustics - Laboratory measurement of sound insulation of building elements – Part 2: Measurement of airborne sound insulation*.

Building Element	Single figure weighted sound reduction index, dB
Masonry	R _w 51

Table 6.1 – Assumed sound reductions performances of non-glazed elements

6.2 Sound Reduction Performance of Windowsets and Vents

The monitoring data along with the architectural drawings have been used to calculate the required sound insulation performance for the windowsets (glazing and frame combination) and open ventilators for the building. These are summarised in Table 6.2 below.

Glazing Reference	Required Glazing SRI, dB	Ventilator Performance, dB
Front – Bedrooms	R _w 38	D _{n,e,w} 41
Rear – Living/Kitchen	R _w 27	D _{n,e,w} 27

Table 6.2 – Required minimum sound reduction indices for glazing and ventilators

In order that windows may remain closed to maintain the internal noise levels, it is expected that attenuated means of background ventilation will be required. If trickle vents are used the performance shown in Table 6.2 will be required. The figures stated are for a single vent per room. If multiple vents are required, then the performance requirement shown in Table 6.2 will increase by a value equal to $+10\log(N)$, with N being the total number of vents serving the room. It should be noted that there is no reason why windows could not be opened as a matter of personal preference or for purge ventilation.

6.3 Windowset Performances

It is important that the performance shown in Table 6.2 are achieved by the entire windowset including frames, ventilators, seals, etc.

Glass performance alone would not be likely to show compliance with the specification as the other elements typically provide the weakest noise transmission path.

The ventilator performances provided would need to be achieved with the vents open. Should this performance not be achievable, a mechanical ventilation solution may be required.

The ventilation scheme for the dwellings should ensure that the appropriate air changes can be achieved, in line with Part F of the building regulations and with consideration of summer overheating, without reliance on windows being open.

With the above recommendations implemented, the noise levels within the proposed dwellings would be expected to be in line with recommendations given in the WHO 1999 and BS8233:2014 guidance. Internal noise levels can therefore be considered to be between the NOEL the LOAEL levels.

7. Sound Insulation to Ground Floor

The development includes a vacant commercial space at ground floor level.

Investigative sound insulation tests were undertaken on 28th August 2026 in general accordance with BS EN ISO 140 *Acoustics – Measurement of sound insulation in buildings and of building elements Part 4: Field measurements of airborne sound insulation between rooms* as required by Approved Document E (2003) of the current Building Regulations.

High volume 'pink' noise was generated from a loudspeaker in the source room, positioned so as to obtain a diffuse sound field within the spaces. A spatial average of the resulting one-third octave band noise levels was obtained within both the source and the receive rooms.

In order to correct for room reverberant characteristics, the reverberation time (RT) was measured in the receive rooms using an interrupted broadband noise source and the RT function of the NTi XL2 sound level meter. Six microphone positions and two loudspeaker positions were used to obtain average results.

Background noise levels were measured in the receive rooms in order to correct the received noise measurements for the influence of the prevailing noise climate as in accordance with BS EN 140 part 4.

The prevailing background noise in the building was due to traffic on the nearby roads.

The following equipment was used for the sound insulation tests.

Manufacturer	Model Type	Serial No	Calibration	
			Certificate No.	Date
NTi Class 1 Integrating SLM	XL2	A2A-11461-E0	1518310-4	9/7/26
Larson Davis calibrator	CAL200	22561	1516263-1	6/2/26
Electro Voice	ZLX-12P-EX	095208361761760076	-	-
Electro Voice	ZLX-12P-EX	095208361761760087	-	-
NTi Audio Signal Generator	Minirator MR2	G2L-RACYB-G1	-	-
NTi Audio Signal Generator	Minirator MR2	G2L-RACZE-G1	-	-

Table 7.1 – Equipment used for the tests

7.2 Test Results

The results of the test are presented in the attached figure VA6527/AB1 as summarised in the tables below.

Source Room	Receive Room	Partition Type	Test Type	Measured Performance
Ground floor	First floor	Floor	Airborne	$D_{nT,w} + C_{tr}$ 46 dB

Table 7.2 – Airborne Sound Insulation Test Results.

N.B Higher values of $D_{nT,w} + C_{tr}$ represent a better performance.

For comparative purposes, Table 7.3 shows the current sound insulation requirements for converted dwellings.

Test Type	Test Element	Minimum ADE Requirement
Airborne Sound Insulation	Walls and Floors	$D_{nT,w} + C_{tr} \geq 43$ dB

Table 7.3 – ADE 2003 and design values for airborne and impact sound insulation (conversion)

NB Higher values of $D_{nT,w} + C_{tr}$ represent better airborne sound insulation.

7.3 Discussion

The current airborne sound insulation of the floor provides a performance 3dB better than the Building Regulation requirements for converted dwellings. This would be expected to provide sufficient sound reduction between an apartment and a typical shop or office setting, such as the adjacent estate agents.

8. Conclusion

A baseline noise survey has been undertaken by Venta Acoustics to establish the prevailing noise climate in the locality of 98 Winchester Road, Chandler's Ford in support of a planning application for the proposed development of new residential dwellings.

The measured levels have been assessed against the National Planning Policy Framework and currently available standards and guidance documents including World Health Organisation *Guidelines for Community Noise* (1999) and BS8233:2014 *Guidance on sound Insulation and noise*.

When assessed using BS4142, noise from activities at the adjacent site have been shown to have a less than adverse to low impact.

Although not required under a class MA application, for advisory purposes appropriate external and internal noise criteria have been considered to minimise adverse impacts on health and quality of life as a result of the new development. Appropriate mitigation measures have been outlined including proprietary thermal double-glazing and trickle vents.

The proposed scheme is not expected to experience a significant adverse noise impact, and the site is considered acceptable for the proposed residential use.

The sound insulation of the floor between the ground and first floor has been tested and meets the requirements for converted dwellings. The level of sound reduction performance measured is expected to be sufficient to suitably protect future residents from normal retail or office use at ground floor level.

Jamie Duncan MIOA



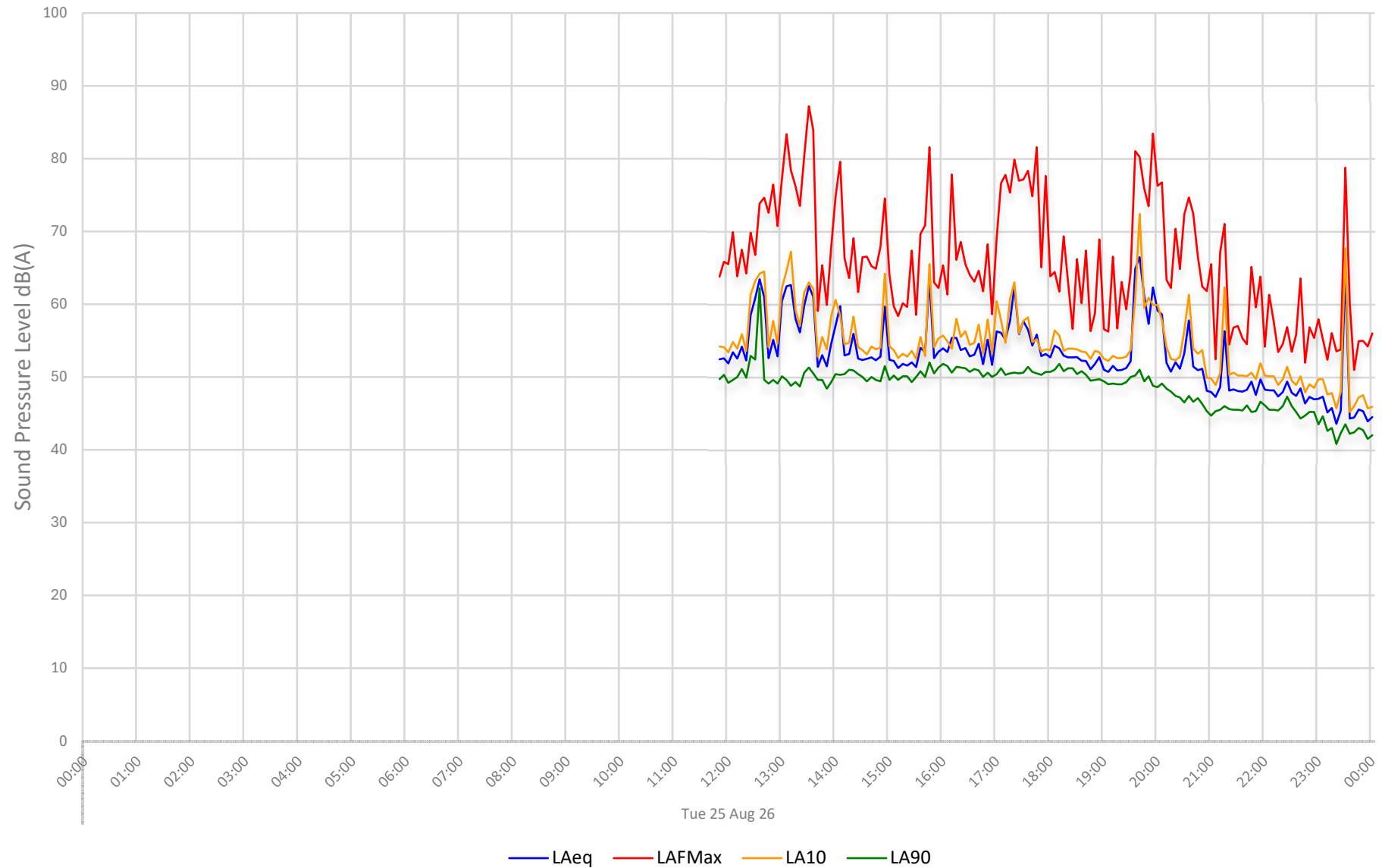
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 1

Position 1 - Rear



Figure VA6527/TH1



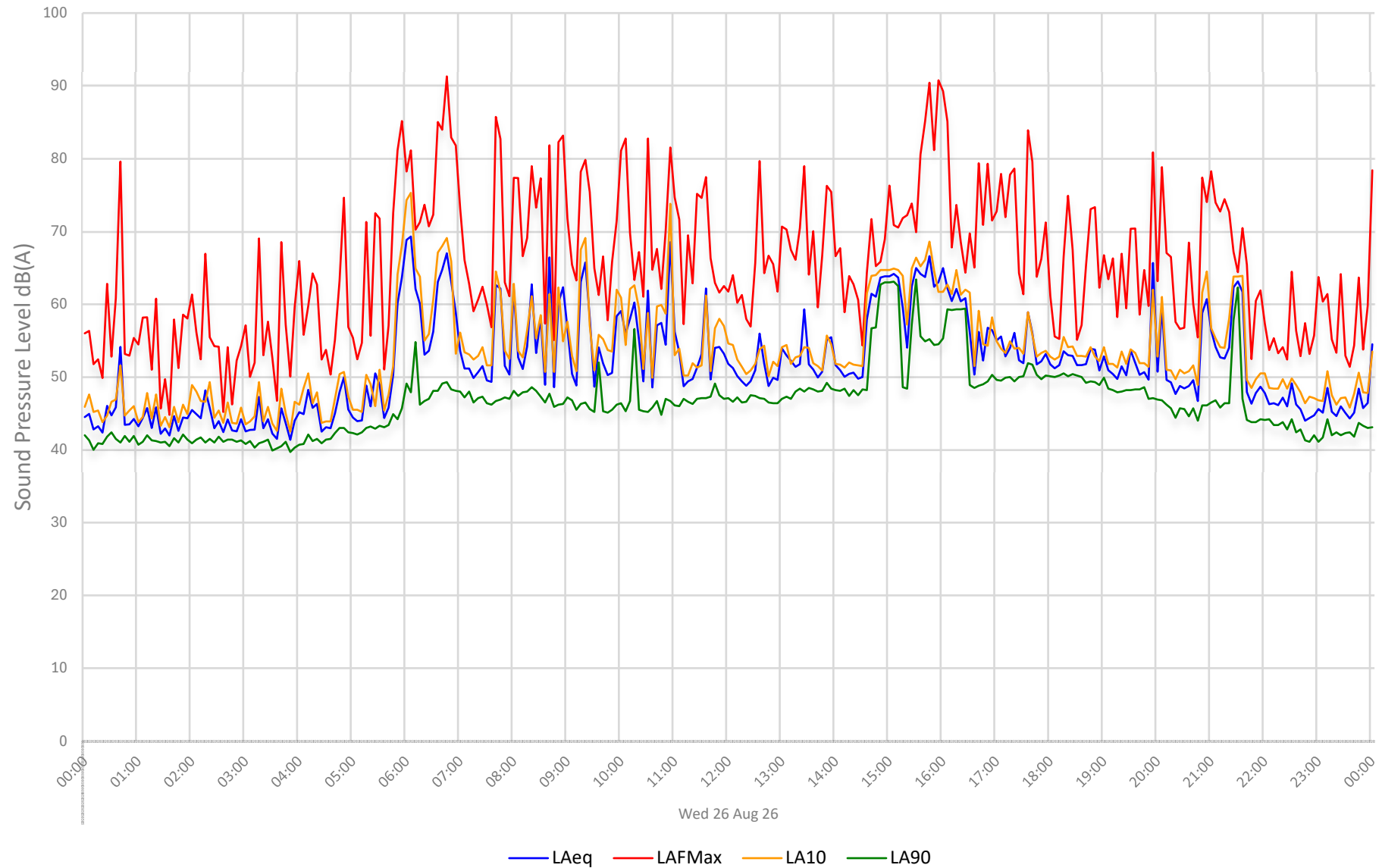
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 2

Position 1 - Rear



Figure VA6527/TH2



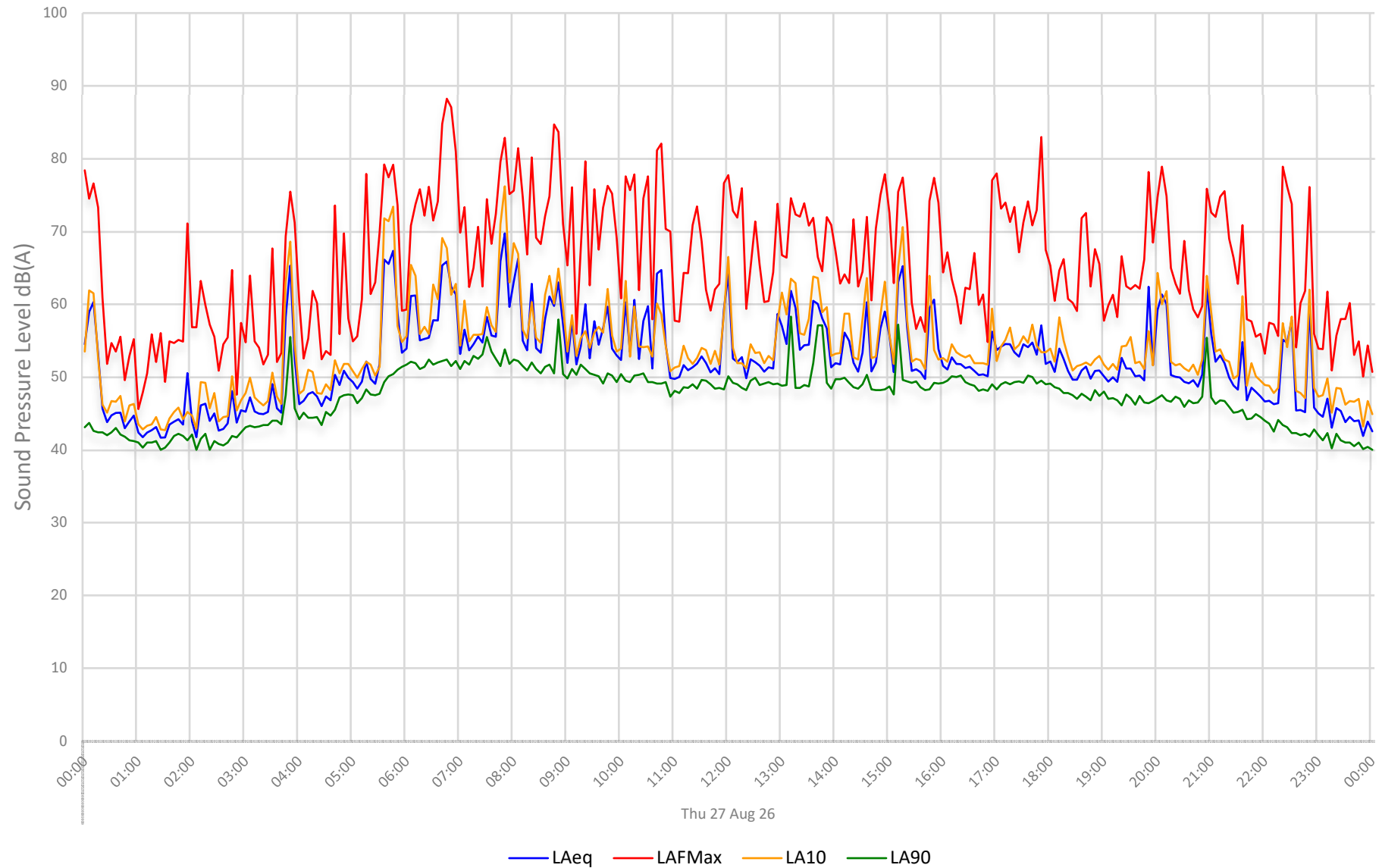
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 3

Position 1 - Rear



Figure VA6527/TH3



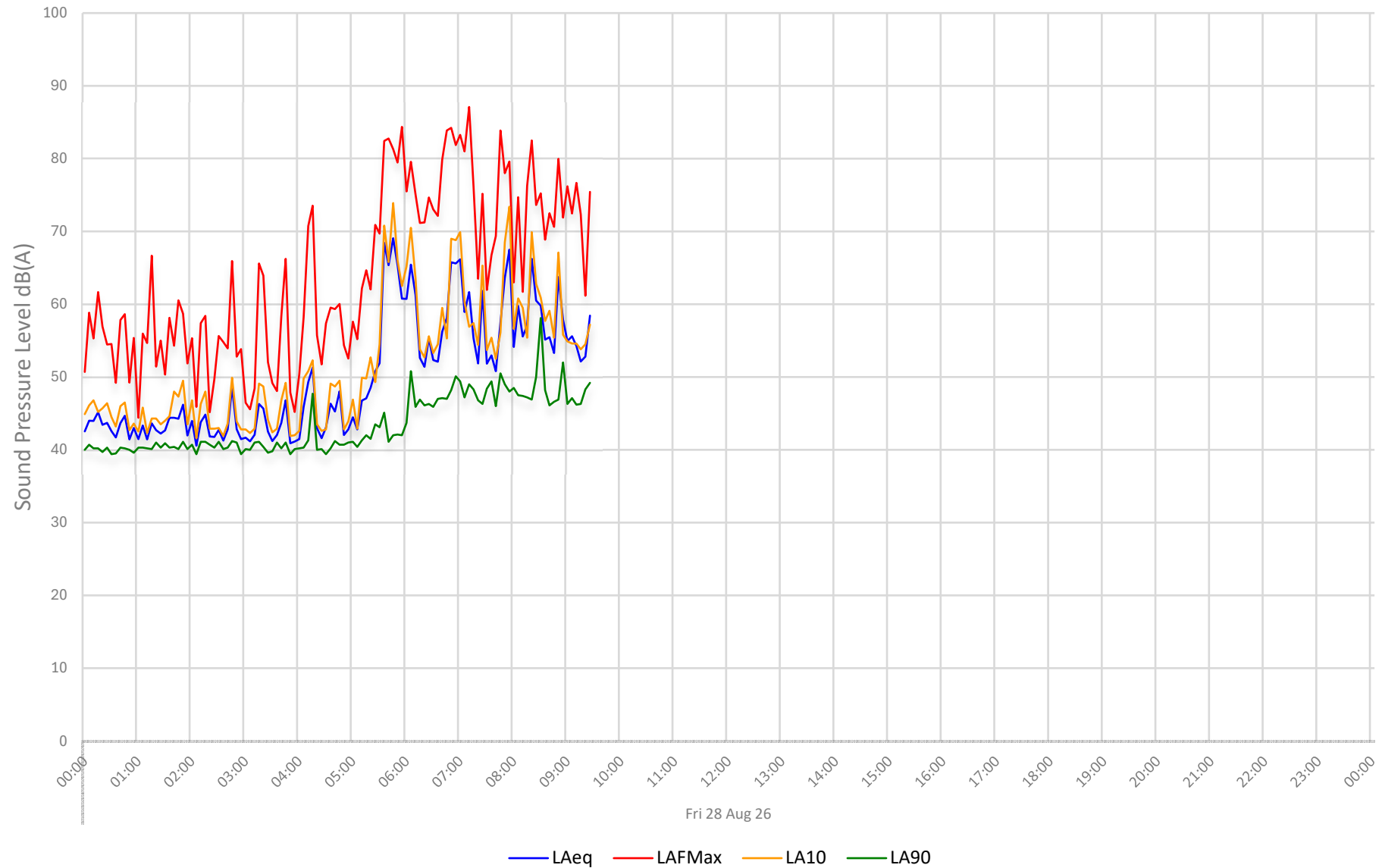
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 4

Position 1 - Rear



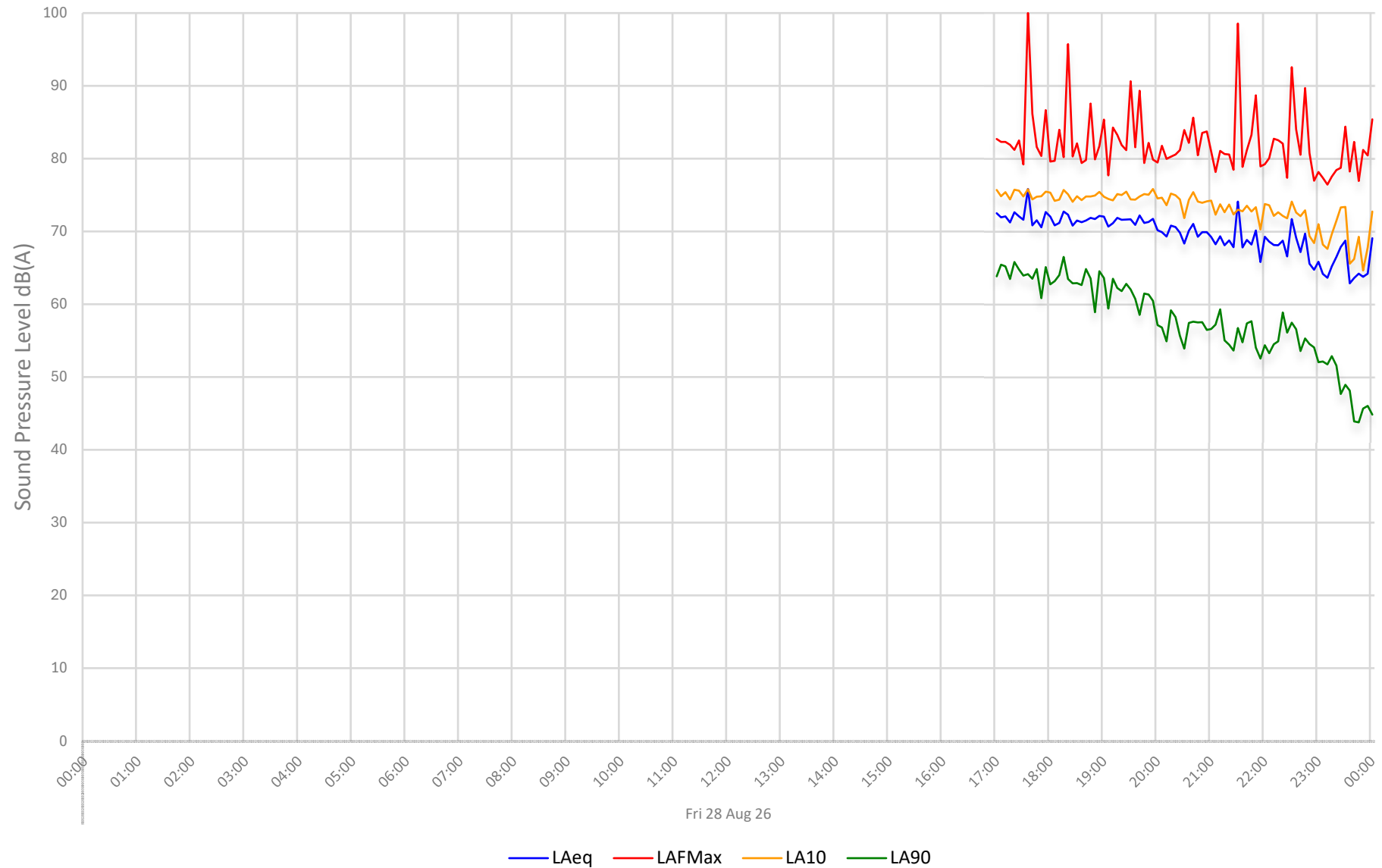
Figure VA6527/TH4



98 Winchester Road, Chandler's Ford
Environmental Noise Time History: 5
Position 2 - Front



Figure VA6527/TH5



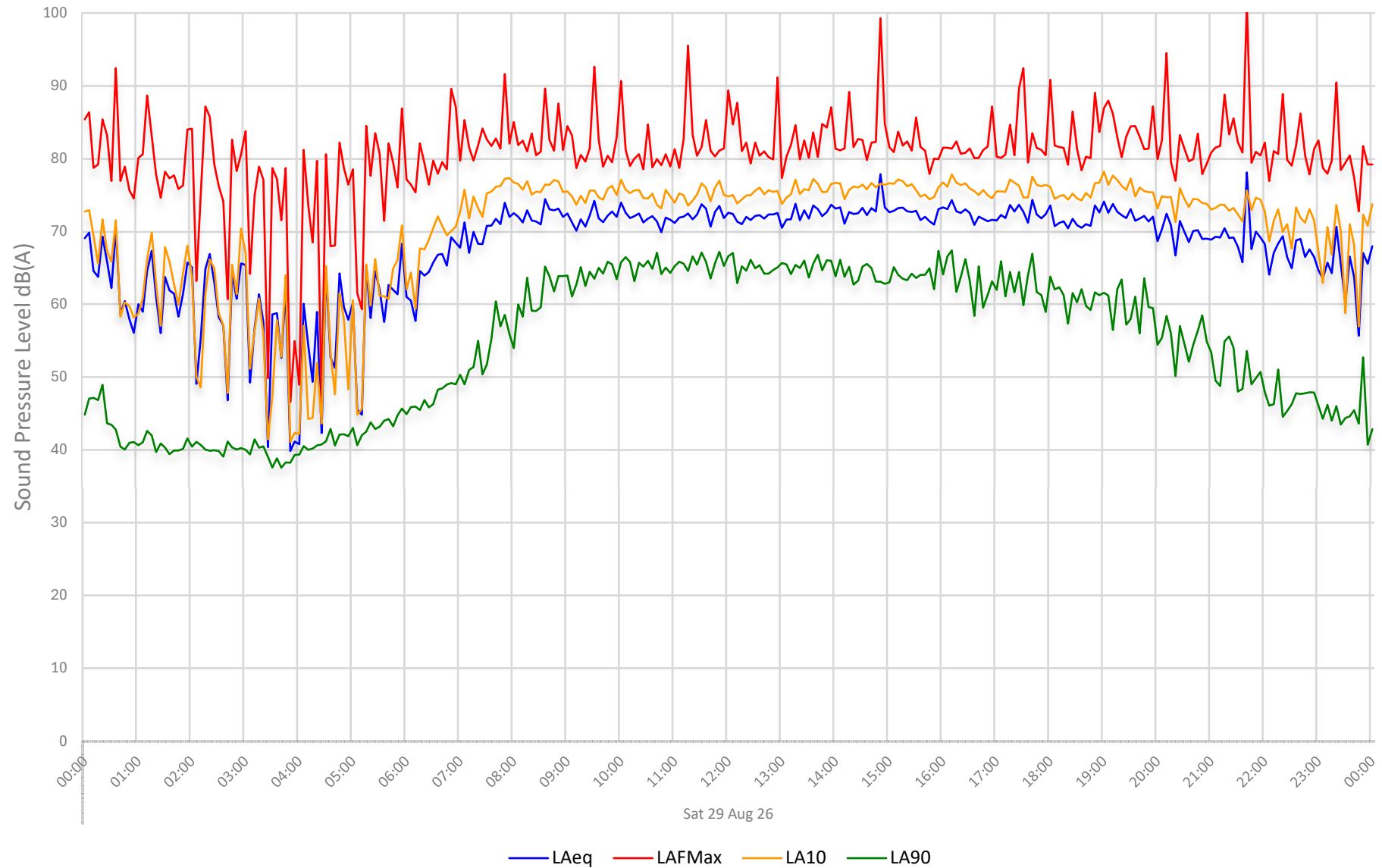
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 6

Position 2 - Front



Figure VA6527/TH6



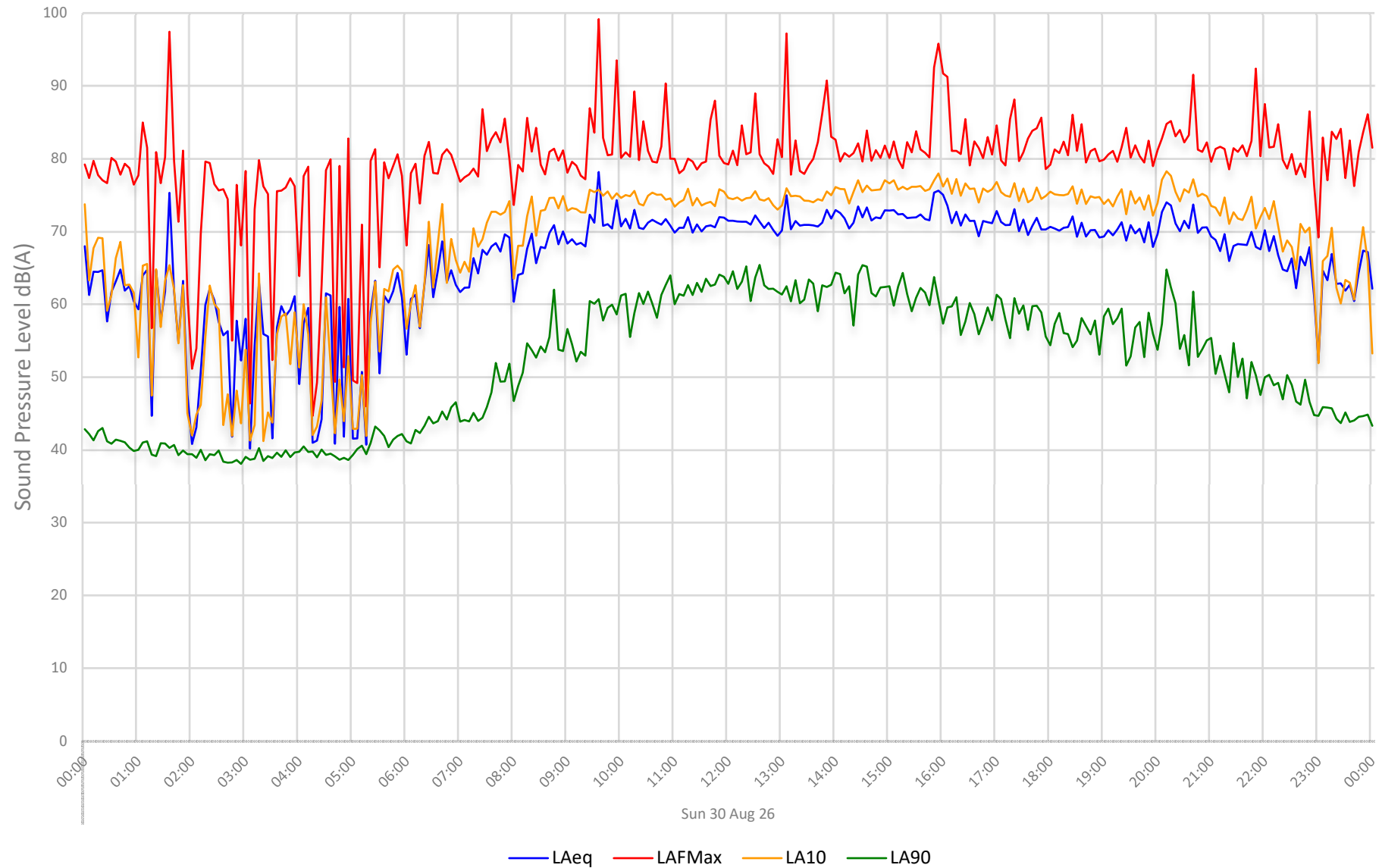
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 7

Position 2 - Front



Figure VA6527/TH7



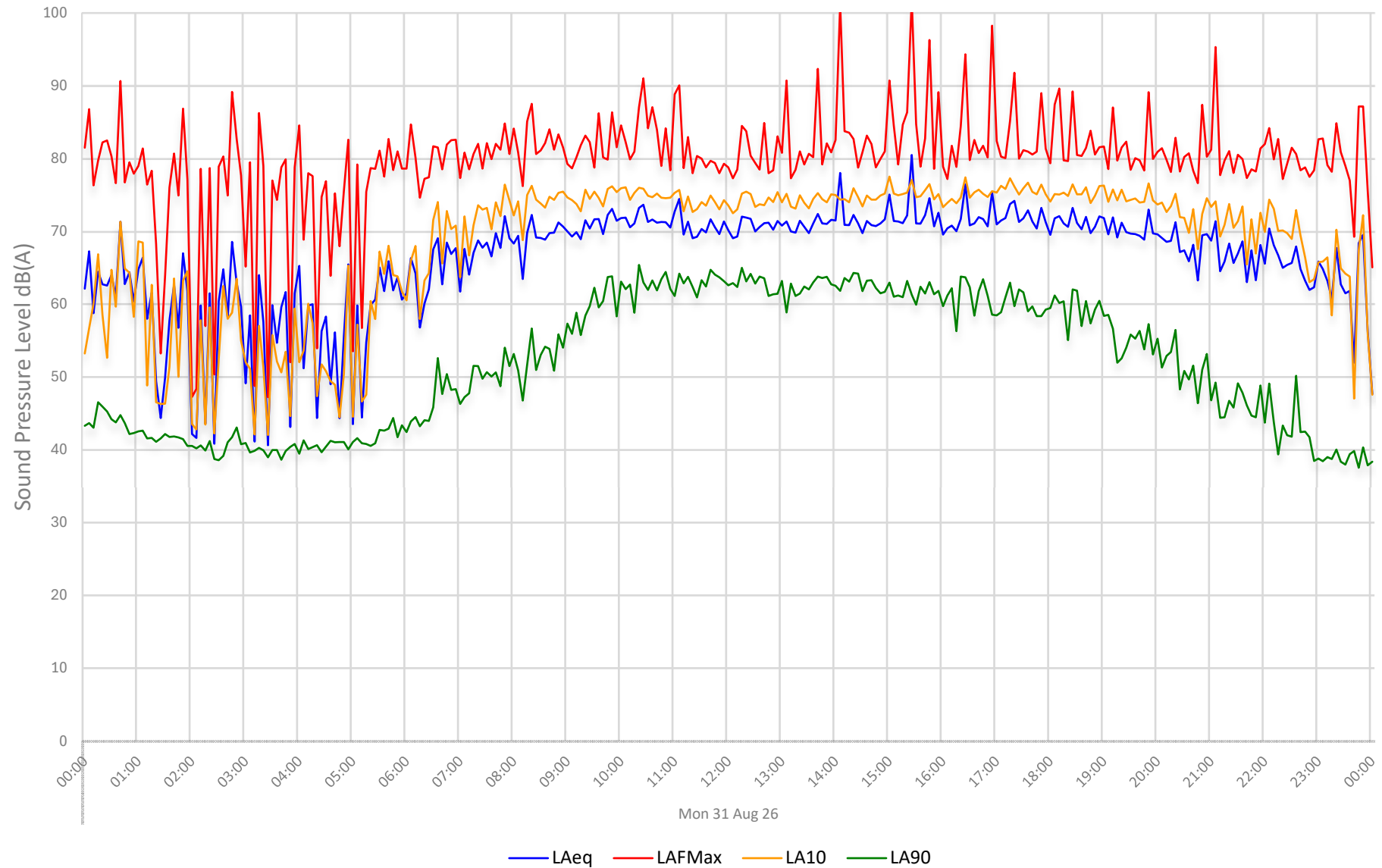
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 8

Position 2 - Front



Figure VA6527/TH8



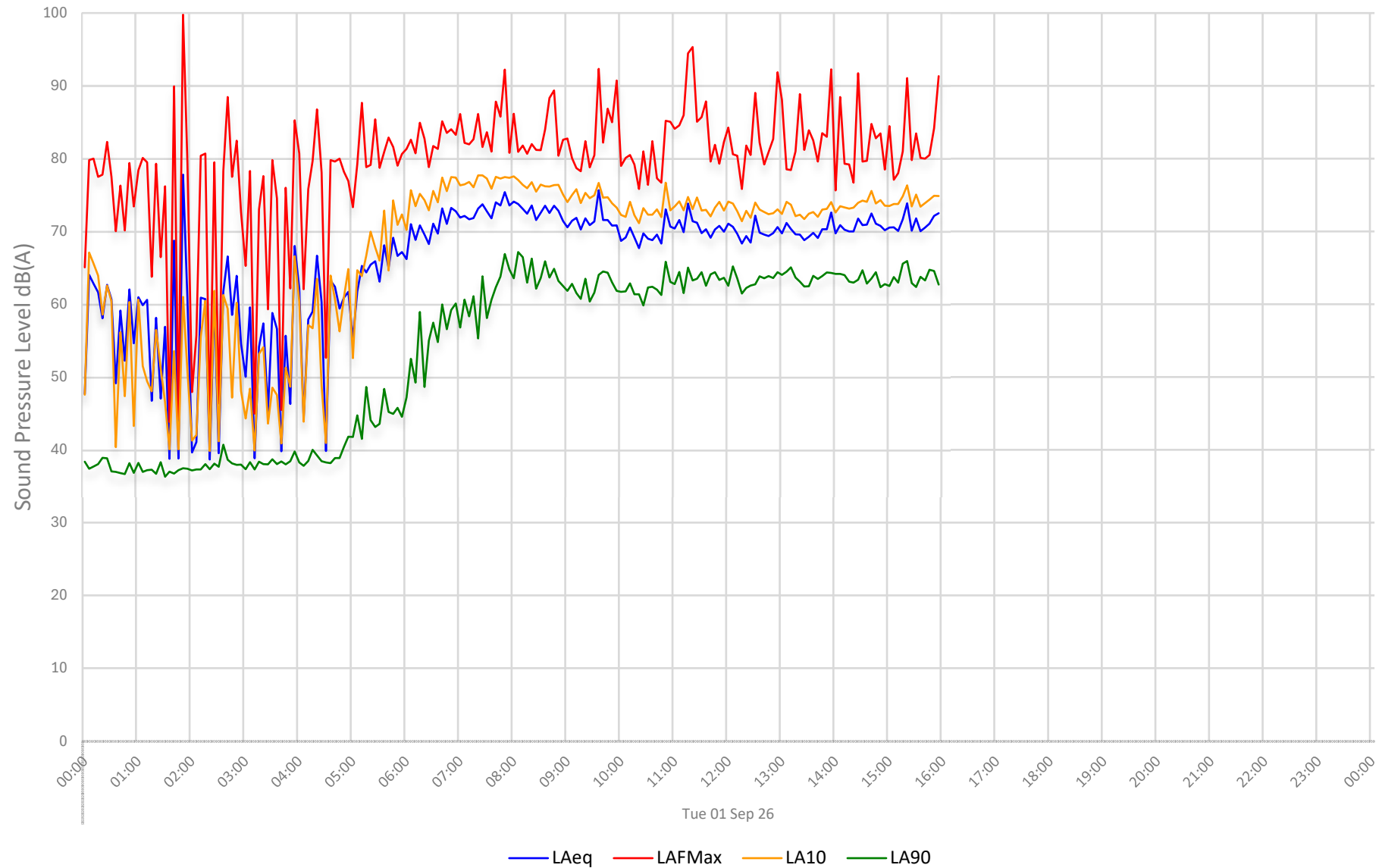
98 Winchester Road, Chandler's Ford

Environmental Noise Time History: 9

Position 2 - Front



Figure VA6527/TH9



Airborne Sound Insulation Test

Figure : VA6257/AB1

Standardised level difference according to ISO 140-4

Field measurements of airborne sound insulation between rooms

(NB Higher $D_{nT,w} + C_{tr}$ figures denote better sound insulation performance)

Construction Tested:

Type

Rooms Tested

From : **Ground**

To : **Small Room**

Frequency Hz	D_{nT} dB
100	33.6
125	34.2
160	33.7
200	38.0
250	41.2
315	47.1
400	51.3
500	57.0
630	58.4
800	62.7
1k	64.5
1.25k	63.9
1.6k	65.6
2k	66.7
2.5k	68.6
3.15k	69.2

Limit of measurement, $D_{nT} \geq 64.5$

Limit of measurement, $D_{nT} \geq 63.9$

Limit of measurement, $D_{nT} \geq 65.6$

Limit of measurement, $D_{nT} \geq 66.7$

Limit of measurement, $D_{nT} \geq 68.6$

Limit of measurement, $D_{nT} \geq 69.2$

Shift Curve By: 2 dB

Sum of Adverse Deviations = 28.9 dB

C_{tr} = -8 dB

$D_{nT,w}$ = 54 dB

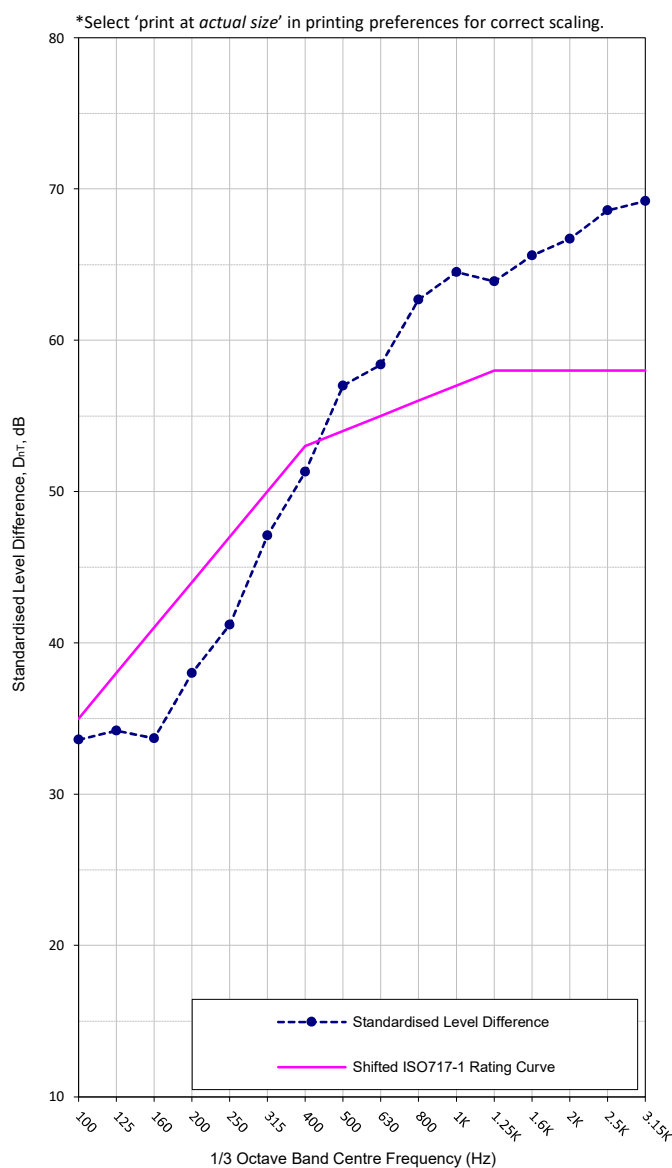
$$D_{nT,w} + C_{tr} = 46 \text{ dB}$$

Evaluation based on field measurement results obtained in one-third octave bands by an engineering method.

Test Standard: BS EN ISO 140-4

Rating Standard: BS EN ISO 717-1

Test Date: 28/08/2026



VA Project Number: VA6257

VENTA ACOUSTICS

Client: Lizzy Clark

Site: 98 Winchester Road, Chandler's Ford

APPENDIX A

Acoustic Terminology & Human Response to Broadband Sound

1.1 Acoustic Terminology

The human impact of sounds is dependent upon many complex interrelated factors such as 'loudness', its frequency (or pitch) and variation in level. In order to have some objective measure of the annoyance, scales have been derived to allow for these subjective factors.

Sound	Vibrations propagating through a medium (air, water, etc.) that are detectable by the auditory system.
Noise	Sound that is unwanted by or disturbing to the perceiver.
Frequency	The rate per second of vibration constituting a wave, measured in Hertz (Hz), where 1Hz = 1 vibration cycle per second. The human hearing can generally detect sound having frequencies in the range 20Hz to 20kHz. Frequency corresponds to the perception of 'pitch', with low frequencies producing low 'notes' and higher frequencies producing high 'notes'.
dB(A):	Human hearing is more susceptible to mid-frequency sounds than those at high and low frequencies. To take account of this in measurements and predictions, the 'A' weighting scale is used so that the level of sound corresponds roughly to the level as it is typically discerned by humans. The measured or calculated 'A' weighted sound level is designated as dB(A) or L_A . A notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 8 hour, 1 hour, etc).
L_{eq} :	The concept of L_{eq} (equivalent continuous sound level) has primarily been used in assessing noise from industry, although its use is becoming more widespread in defining many other types of sounds, such as from amplified music and environmental sources such as aircraft and construction. Because L_{eq} is effectively a summation of a number of events, it does not in itself limit the magnitude of any individual event, and this is frequently used in conjunction with an absolute sound limit.
L_{10} & L_{90} :	Statistical L_n indices are used to describe the level and the degree of fluctuation of non-steady sound. The term refers to the level exceeded for n% of the time. Hence, L_{10} is the level exceeded for 10% of the time and as such can be regarded as a typical maximum level. Similarly, L_{90} is the typical minimum level and is often used to describe background noise. It is common practice to use the L_{10} index to describe noise from traffic as, being a high average, it takes into account the increased annoyance that results from the non-steady nature of traffic flow.
L_{max} :	The maximum sound pressure level recorded over a given period. L_{max} is sometimes used in assessing environmental noise, where occasional loud events occur which might not be adequately represented by a time-averaged L_{eq} value.

1.2 Octave Band Frequencies

In order to determine the way in which the energy of sound is distributed across the frequency range, the International Standards Organisation has agreed on "preferred" bands of frequency for sound measurement and analysis. The widest and most commonly used band for frequency measurement and analysis is the Octave Band. In these bands, the upper frequency limit is twice the lower frequency limit, with the band being described by its "centre frequency" which is the average (geometric mean) of the upper and lower limits, e.g. 250 Hz octave band extends from 176 Hz to 353 Hz. The most commonly used octave bands are:

Octave Band Centre Frequency Hz		63		125		250		500		1000		2000		4000		8000
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APPENDIX A

Acoustic Terminology & Human Response to Broadband Sound

1.3 Human Perception of Broadband Noise

Because of the logarithmic nature of the decibel scale, it should be borne in mind that sound levels in dB(A) do not have a simple linear relationship. For example, 100dB(A) sound level is not twice as loud as 50dB(A). It has been found experimentally that changes in the average level of fluctuating sound, such as from traffic, need to be of the order of 3dB before becoming definitely perceptible to the human ear. Data from other experiments have indicated that a change in sound level of 10dB is perceived by the average listener as a doubling or halving of loudness. Using this information, a guide to the subjective interpretation of changes in environmental sound level can be given.

Change in Sound Level dB	Subjective Impression	Human Response
0 to 2	Imperceptible change in loudness	Marginal
3 to 5	Perceptible change in loudness	Noticeable
6 to 10	Up to a doubling or halving of loudness	Significant
11 to 15	More than a doubling or halving of loudness	Substantial
16 to 20	Up to a quadrupling or quartering of loudness	Substantial
21 or more	More than a quadrupling or quartering of loudness	Very Substantial