Our Reference: NIA&ORA/1508/26/608/v1.0/36 High Street, Grimethorpe

5th February 2026

Mr Philip Fletcher
302 New Road
Staincross
Barnsley
S75 6GP

Dear Sir,

NOISE IMPACT AND ODOUR RISK ASSESSMENT

PROPOSED CHANGE OF USE FROM RETAIL STORE TO GROUND FLOOR HOT FOOD TAKEAWAY (SUI GENERIS) AND FIRST FLOOR DWELLING FLAT (C3)

36 HIGH STREET, GRIMETHORPE, BARNSLEY, S72 7LP

1.00 INTRODUCTION

1.01 RP Acoustics Limited has been commissioned by Mr Ajit Singh to carry out a noise impact and odour risk assessment for the proposed change of use from retail store to ground floor Hot Food Takeaway (sui Generis) and first floor dwelling flat (C3) at 36 High Street, Grimethorpe, Barnsley, S72 7LP (hereafter referred to as the application site).

1.02 The assessments have been undertaken to accompany a planning application to be submitted to Barnsley Metropolitan Borough Council.

1.03 The scope of the noise impact and odour risk assessment is as follows:

- Determine ambient and background noise levels at the application site
- Assess the noise associated with the kitchen extraction system
- Assess the noise impact in accordance with relevant guidelines

- Determine the odour potential associated with the restaurant
- Determine the odour risk assessment
- Provide recommendations for odour control requirements

1.04 This report sets out the methodology and findings of the assessments. It has been prepared on behalf of Mr Ajit Singh for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Mr Ajit Singh (applicant) and Mr Philip Fletcher and RP Acoustics Limited as to the extent to which the findings may be appropriate for their use.

1.05 A glossary of acoustic terms is contained in Appendix 1 for reference.

2.00 APPLICATION SITE SETTING AND PROPOSED DEVELOPMENT

2.01 The application site is located in a mixed commercial and residential use setting in the village of Grimethorpe circa 7 kilometres to the north east of town centre. The application site location plan is reproduced in Appendix 2 for reference. The proposed plans and elevations are reproduced in Appendix 3 for reference.

2.02 The proposed hot food takeaway is to open to 2300 hours, 7 days a week.

2.03 The proposed first floor dwelling flat is to be let separately to the proposed hot food takeaway and, as a consequence, the separating floor between both premises will be upgraded.

2.04 For reference, the extraction fan is to be located on the western gable end (onto New Street) of the premises with the flue extending to at least 1 metre above eaves (see Appendix 3).

3.00 BASELINE NOISE SURVEY

3.01 A baseline noise survey was undertaken at the application site during the late evening of Wednesday 4th February 2026.

3.02 In order to establish the background sound level in the locale, a single noise monitoring position was adopted at 3 metres above ground level in a free field environment on New Street (see Appendix 4).

3.03 Noise measurements were undertaken using an NTi Audio XL2 Type 1 integrating sound level meter. A 90 mm windshield was fitted for all measurements. The measurement system calibration was verified immediately before and after measurement sessions with no drift in level (calibration certificate reproduced in Appendix 5).

3.04 Measurements consisted of A–weighted broadband parameters, together with linear third octave band L_{eq} levels, with a logging interval of 1 second. The following table contains a summary of the relevant measurement data rounded to the nearest decibel.

Table 3.1 – Baseline Noise Measurement Data

Time	L_{Aeq} (dB)	L_{A90} (dB)	L_{A10} (dB)	L_{A1} (dB)	L_{AFMax} (dB)	L_{AFMin} (dB)	Comments
2100–2200	55	**40**	58	67	71	37	L_{Aeq} High Street traffic
2200–2300	55	**40**	55	68	75	37	L_{A90} distant traffic
2300–2330	53	**39**	53	67	73	37	L_{AFMax} High Street traffic
Late Evening Background Sound Level 40 dB L_{A90} (2100–2300; proposed opening hours)							

3.05 The ambient noise level (passing High Street traffic) and the background sound level (distant traffic) are considered wholly commensurate with the application site setting.

4.00 GOVERNMENT POLICY, ACOUSTIC STANDARDS AND GUIDANCE

National Planning Policy Framework

4.01 The National Planning Policy Framework (NPPF), which was revised in July 2021, states in Paragraph 174 that '*Planning policies and decisions should contribute to and enhance the natural and local environment by: … e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or* ***noise pollution*** *or land instability.'*

National Planning Policy Framework: Planning Practice Guidance on Noise

4.02 The National Planning Policy Framework Planning Practice Guidance on Noise (NPPF-PPGN) states that the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation. These factors include: The source and the absolute level of noise; the content of the noise; and the general character of the noise. The NPPF-PPGN presents a table of noise exposure hierarchy, which relates the NOAEL, LOAEL and SOAEL to the subjective perception of noise and examples of outcomes (see overleaf).

Continued from page 2

Table 4.1 – Summary of Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
No Observed Adverse Effect Level (NOAEL)			
Not Noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

BS 4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound

4.03 The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.

4.04 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 is likely to 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 the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

Continued from page 3

5.00 NOISE ASSOCIATED WITH PROPOSED KITCHEN EXTRACTION SYSTEM

5.01 The kitchen extraction system is to incorporate a Flakt Woods Max Compact fan. The fan has a **maximum sound power at the outlet of 95 dB L_{WA}** whilst the **casing break out sound pressure level is 48 dB(A) at 3 metres** (see Appendix 6; note: non tonal broadband in character). The fan, which is broadband in nature and does not warrant an acoustic feature correction, is also to include a 2D cylindrical silencer on exhaust side and a 1D cylindrical silencer on the inlet side (see Appendix 6).

5.02 The noise level from the extract flue discharge at the nearest noise sensitive receptors is (frequency) dependent upon the outlet sound power level, silencer insertion loss, directivity correction (see Appendix 7 for the directivity corrections) and distance correction.

5.03 The nearest residential use with a clear line of sight to the proposed kitchen extraction fan and flue is on the opposite side of New Street, circa 12 metres away.

Table 5.1 – Calculated Noise Levels from the Extract Flue Discharge at 12 metres

Item	Octave band (Hz)	63	125	250	500	1000	2000	4000	8000	A
A	Outlet SWL(dB)	85	79	90	89	86	86	81	79	95
B	A-Weighting Correction	-26	-16	-9	-3	0	1	1	-1	
C	Distance Attenuation at 12 metres	-22	-22	-22	-22	-22	-22	-22	-22	
D	105^0 Directivity Index (receptors just below flue)	-2	-3	-7	-13	-18	-24	-29	-33	
E	1D Silencer Attenuation	-4	-8	-12	-17	-23	-17	-12	-14	
F	Correction SWL to SPL	-11	-11	-11	-11	-11	-11	-11	-11	
	Resultant SPL dB(A) at receptor (A+B+C+D+E+F)	20	19	29	23	12	13	8	0	**31**

5.04 In terms of fan casing break out, this is 48 dB(A) at 3 metres at maximum duty. The nearest residential use with a clear line of sight is located circa 12 metres away from the proposed fan on the opposite side of New Street. Based on point source propagation, with a 6 decibel reduction per doubling of distance, fan casing break out at 12 metres away is calculated at 36 dB(A).

5.05 The cumulative noise level of the proposed extraction system at the nearest residential use with a clear line of sight to the extraction fan and flue is 37 dB(A); logarithmic addition of 31 dB(A) from the extract discharge of the proposed flue plus 36 dB(A) from casing breakout of the proposed fan.

5.06 This is 3 decibels below the late evening background sound level of 40 dB L_{A90} (2100–2300; proposed opening hours). In accordance with BS 4142, this represents no adverse impact.

5.07 In accordance with the National Planning Policy Framework Planning Practice Guidance on Noise (NPPF-PPGN), the noise of the proposed extraction system is categorised as being at a No Observed Adverse Effect Level (NOAEL) as good internal ambient noise levels will be achieved with windows open.

Continued from page 4

6.00 SEPARATING FLOOR UPGRADE

6.01 With respect to sound insulation, Building Regulations Approved Document E 'Resistance to the Passage of Sound' (ADE) Requirement E1 states '*Dwelling-houses, flats, and rooms for residential purposes shall be design and constructed in such a way that they provide reasonable resistance to sound form other parts of the same building and from adjoining buildings'*.

6.02 Building Regulations ADE 2003 sets out that the airborne sound insulation of separating floors in buildings formed by a material change of use should be at least 43 dB $D_{nT,w}+C_{tr}$.

6.03 In the situation where residential use is adjacent to commercial use, a judgement is to be made whether a higher standard of sound insulation is required due to the level and/or character of noise generated within the commercial use.

6.04 It is not considered that the noise sources within a hot food takeaway are materially different in character to those found within a residential setting (kitchen noise, people noise).

6.05 It is therefore considered that the minimum performance criteria set out in Building Regulations ADE 2003 will provide sufficient protection to noise to the future occupiers of the proposed first floor residential dwelling flat directly above the ground floor hot food takeaway.

6.06 The proposed separating floor upgrade is as follows:

- Floorboard (Existing)
- 200 mm timber Joist (Existing)
- Plasterboard ceiling (Existing)

- 50 mm timber battens at 600 mm (max) centres perpendicular to joists (New)
- 50 mm mineral wool insulation (> 10 kg/m^3 density) between battens (New)
- 30 mm **Hush Bar Deep** at 600 mm (max) centres perpendicular to battens (New)
- Ceiling 2 x 12.5 mm fire board or 2 x 15 mm sound board (joints staggered) (New)

6.07 The 30 mm **Hush Bar Deep** (Hush Resilient Bars; as shown below) acoustically de-couple the existing floor/ceiling from the new lowered ceiling. For reference, the proposed upgraded separating floor has been sound tested by RP Acoustics Limited on numerous occasions and always achieves airborne sound insulation of at least 46 dB $D_{nT,w}+C_{tr}$ which represents a + 3 dB betterment on the minimum performance requirements of Building Regulations ADE.

6.08 For reference the 30 mm Hush Bar Deep can support up to 60 kg/m^2 load (note: 2 x 12.5 mm fire board is 20 kg/m^2 (10 kg/m^2 per board) whilst 2 x 15 mm sound board is 25 kg/m^2 (12.5 kg/m^2 per board)).

6.09 Beneath the lowered plasterboard ceiling the proposed hot food takeaway may elect to have a suspended ceiling for services and hygiene purposes. Such ceilings are relatively light weight (3–5 kg/m^2) and therefore, to all intents and purposes, acoustically transparent.

Continued from page 5

7.00 ODOUR RISK ASSESSMENT

7.01 The following 'Risk Assessment for Odour' has been derived from criteria outlined by DEFRA 2005, Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems Appendix C. The assessment is carried to accurately score the site according to DEFRA standards. Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach.

Table 7.1 – Risk Assessment for Odour for Proposed Restaurant

Criteria	Rating	Score	Details
Dispersion	Very Poor	20	Low level discharge, discharge into courtyard or restriction on stack
	Poor	15	Not low level but below eaves, or discharge at below 10 m/s
	Moderate	10	Discharging 1m above eaves at 10 to 15 m/s
	Good	5	Discharging 1m above ridge at 15 m/s
Proximity of Receptors	Close	10	Closest sensitive receptor less than 20m from kitchen discharge
	Medium	5	Closest sensitive receptor between 20 and 100m from kitchen discharge
	Far	1	Closest sensitive receptor over 100m from kitchen discharge
Size of Kitchen	Large	5	More than 100 covers or large sized take away
	Medium	3	Between 30 and 100 covers or medium sized take away
	Small	1	Less than 30 covers or small sized take away
Cooking Type (Odour / Grease Loading)	Very High	10	Pub (high level of fried food), fried chicken, burgers or fish and chips
	High	7	Vietnamese, Thai or Indian
	Medium	4	Cantonese, Japanese or Chinese
	Low	1	Most Pubs, Italian, French, Pizza or Steakhouse
Overall Score = 30 = High Level of Odour Control			

Impact Risk	Odour Control Level Requirement	Significance Score
Low / Medium	Low Level Odour Control	Less than 20
High	High Level Odour Control	20 to 35
Very High	Very High Level Odour Control	More than 35

7.02 High level odour control requires: a) a canopy to cater for medium loading (0.35 m/s); b) pre-filters and carbon filters to achieve a 0.2 to 0.4 second residence time; and c) a high velocity jet cowl. This is in line with the proposed odour control system (see Appendix 8).

7.03 For reference the extractor fan and flue are to be attached to the building by means of anti-vibration mounts (see Appendix 9).

8.00 CONCLUSION

8.01 A noise impact and odour risk assessment has been undertaken for the proposed change of use from retail store to ground floor Hot Food Takeaway (sui Generis) and first floor dwelling flat (C3) at 36 High Street, Grimethorpe, Barnsley, S72 7LP.

8.02 In accordance with the National Planning Policy Framework Planning Practice Guidance on Noise (NPPF-PPGN), the noise of the proposed extraction system is categorised as being at a No Observed Adverse Effect Level (NOAEL) .

8.03 A scheme of odour abatement has been specified in accordance with good practice in order to protect residential amenity.

8.04 In conclusion, noise and odour do not pose a constraint to the granting of planning permission.

Continued from page 6

If we can be of any further assistance, please do not hesitate to contact us.

Yours sincerely

Richard Pennell
Member of the Institute of Acoustics, Diploma in Acoustics and Noise Control
For RP Acoustics Ltd

APPENDIX 1
GLOSSARY OF ACOUSTIC TERMS

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 μPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$L_p = 20 \log_{10}(p/p_0)$ where

L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 μPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript ‘F’ denotes fast time weighting, slow time weighting ‘S’ is also used.

Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events that occur over different lengths of time.

Building Regulations ADE 2003 Standard ($D_{nT,w} + C_{tr}$)

A single-number quantity which characterises the airborne sound insulation between rooms using noise spectrum No. 2 as defined in BS EN ISO 717–1:1997.

APPENDIX 2
APPLICATION SITE LOCATION PLAN

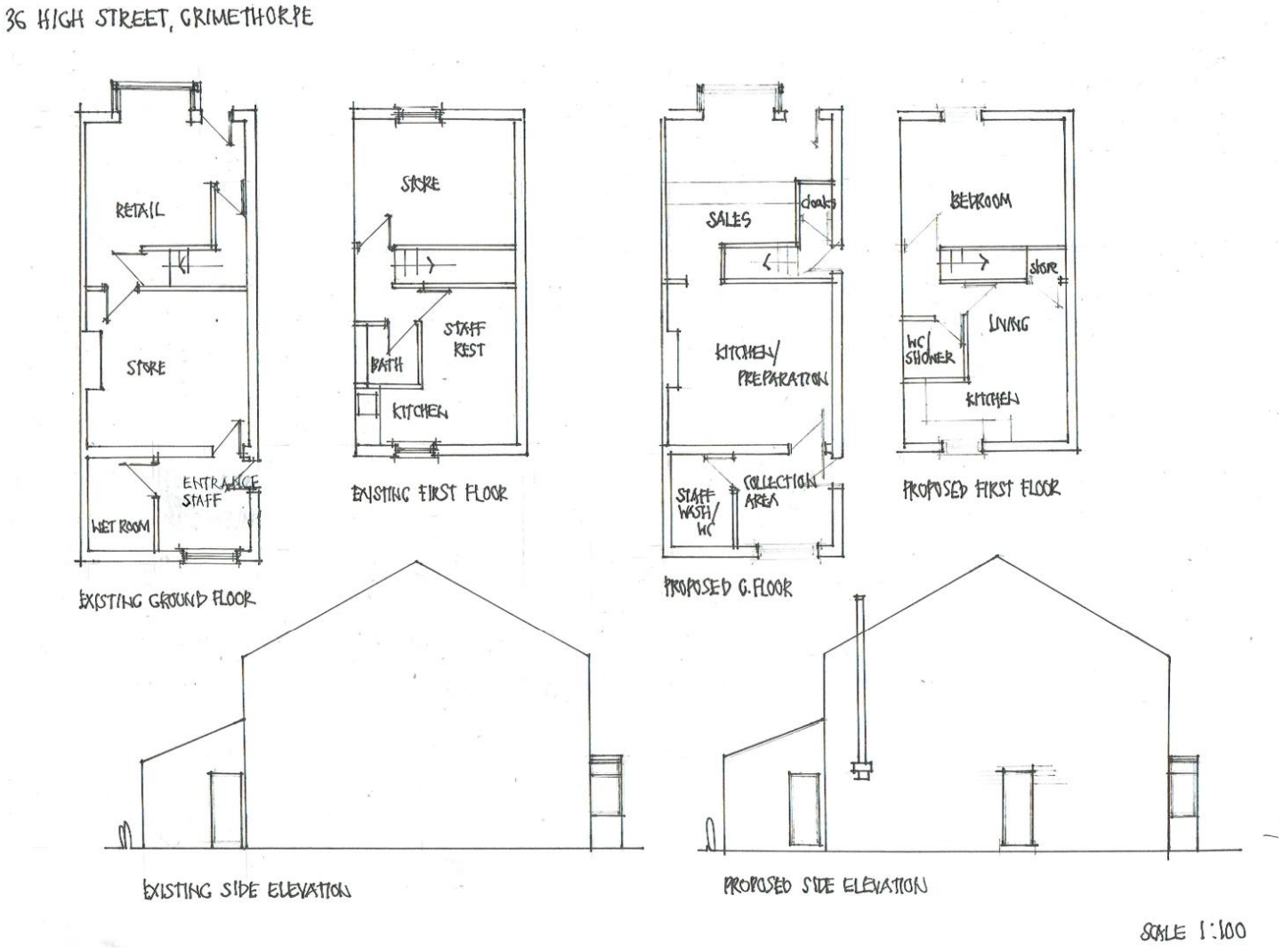
Streetwise

Map data

SITE LOCATION PLAN
AREA 2 HA
SCALE 1:1250 on A4
CENTRE COORDINATES: 441063, 408951

Supplied by Streetwise Maps Ltd
www.streetwise.net
Licence No: 100047474
20/12/2025 13:26

APPENDIX 3
PROPOSED PLANS AND ELEVATIONS



APPENDIX 4
NOISE MONITORING POSITION

APPENDIX 5
CALIBRATION CERTIFICATE FOR SOUND LEVEL METER (CALIBRATION EVERY 2 YEARS)

Laboratory Location
Campbell Associates Ltd
5b Chelmsford Road Industrial Estate
GREAT DUNMOW, Essex, GB-CM6 1HD
Phone 01371 871030

0789

Certificate of Calibration and Conformance

Certificate number: **U46717**

Test Object:	**Sound Level Meter, BS EN IEC 61672-1:2013 Class 1** **Associated Frequency Analyser to BS EN IEC 61260:1996 Class 1**
Producer:	**NTi Audio**
Type:	**XL2-TA**
Serial number:	**A2A-17283-E0**
Customer:	**RP Acoustics Ltd**
Address:	**1 Dobcroft Close,** **Sheffield. S11 9LL.**
Contact Person:	**Richard Pennell**
Order No:	**RPA/24/CAL/01**

Introduction:
Calibration has been performed as set out in CA Technical Procedures which are based on the procedures for periodic verification of sound level meters as per the **Test Object** listed above. Results and conformance statement are overleaf and detailed results, where appropriate, are provided in the attached Measurement Report.

Tested:	*Producer*	*Type*	*Serial No*	*Certificate No*
Microphone	NTi Audio	MC230A	A23655	46716
Calibrator*	Larson Davis	CAL200	17115	U46700
Preamplifier	NTi Audio	MA220	11174	Included

* The calibrator was complete with any required coupler for the microphone specified.

Additional items that have also been submitted for verification:

Wind shield	N/A
Attenuator	N/A
Extension cable	N/A

These items have been taken into account wherever appropriate.

Instruction Manual: NTi-Audio XL2 Operating Manual v3.11.02 August 2016 Firmware Version: V4.71 The test object is a single channel instrument.

Conditions	*Pressure kPa*	*Temperature °C*	*Humidity %RH*
Reference conditions	101.325	23	50
Measurement conditions	97.15 ±0.02	22.30 ±0.4	43.48 ±0.65

Calibration Dates:

Received date:	23/01/2024	Reviewed date:	09/02/2024
Calibration date:	09/02/2024	Issued date:	09/02/2024

Technicians: (Electronic certificate)

Calibrated by: *Palanivel Marappan B.Eng (Hons), M.Sc*

Reviewed by: *Darren Batten*

APPENDIX 6
PROPOSED EXTRACT FAN & PROPOSED ATTENUATORS

SOUND DATA - 50 MaXfan Compac

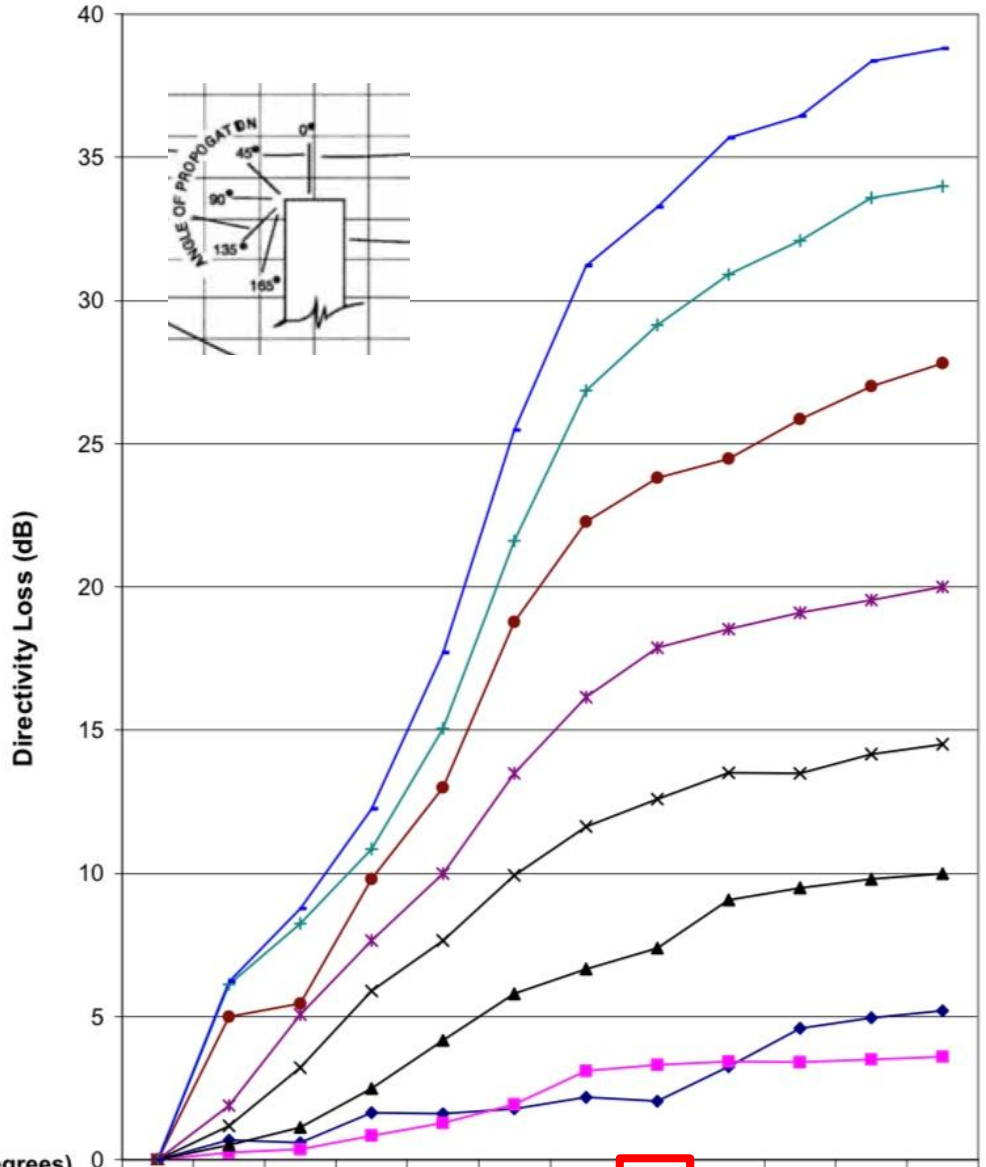
	Sound Spectrum (Hz)								Overall	
	63	125	250	500	1k	2k	4k	8k	Lw*	LpA @ 3m**
Inlet*	83	79	87	88	86	85	81	78	94	71
Outlet*	85	79	90	89	86	86	81	79	95	72
Breakout*	75	61	68	66	61	58	59	55	77	48

*Lw dB re 10^{-12} W
**dBA re $2x10^{-5}$ Pa
Ps Sound data at 2.63m3/s @ 400Pa (static)

Dynamic Insertion Loss

Fan Size	Silencer Length	Silencer Type	Insertion Loss @ Octave Band (Hz)							
			63	125	250	500	1k	2k	4k	8k
0250	1D	ENP	-2	-5	-6	-9	-13	-11	-6	-6
		EP	-4	-6	-8	-11	-14	-16	-11	-10
	2D	ENP	-4	-7	-10	-15	-19	-16	-12	-9
		EP	-7	-10	-15	-16	-15	-17	-13	-13
0315-0560	1D	ENP	-2	-5	-6	-9	-13	-11	-6	-6
		EP	-4	-6	-8	-11	-18	-19	-17	-14
	2D	ENP	-4	-8	-12	-17	-23	-17	-12	-10
		EP	-7	-10	-12	-21	-26	-26	-24	-22
0630-0800	1D	ENP	-3	-4	-9	-15	-15	-8	-7	-6
		EP	-4	-6	-8	-17	-23	-20	-18	-10
	2D	ENP	-6	-8	-13	-22	-22	-13	-12	-9
		EP	-8	-11	-16	-27	-32	-31	-29	-19
900-1000	1D	ENP	-3	-4	-9	-14	-13	-7	-7	-6
		EP	-4	-6	-11	-20	-18	-15	-13	-11
	2D	ENP	-6	-8	-13	-21	-18	-12	-11	-9
		EP	-8	-11	-18	-26	-27	-26	-22	-16

APPENDIX 7
DIRECTIVITY INDEX FOR FLUE



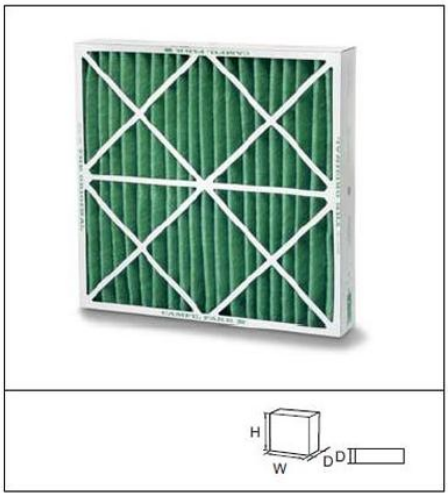
Angle (Degrees)	0	15	30	45	60	75	90	105	120	135	150	165
63 Hz	0	1	1	2	2	2	2	2	3	5	5	5
125 Hz	0	0	0	1	1	2	3	3	3	3	4	4
250 Hz	0	1	1	2	4	6	7	7	9	10	10	10
500 Hz	0	1	3	6	8	10	12	13	14	14	14	15
1 kHz	0	2	5	8	10	14	16	18	19	19	20	20
2 kHz	0	5	5	10	13	19	22	24	24	26	27	28
4 kHz	0	6	8	11	15	22	27	29	31	32	34	34
8 kHz	0	6	9	12	18	25	31	33	36	36	38	39

APPENDIX 8
PROPOSED PRE FILTER, CARBON FILTERS AND HIGH VELOCITY JET COWL

Pre-Filtration: G3 to G4

Pleated Filters

30/30



TESTED EN 779:2012 ACCORDING TO

Advantages

- **Water resistant cardboard frame**
- **Conception with girders/ crossbars**
- **Diagonal stiffner stuck to media to keep the spacing of folds, protect and maintain the filter**
- **Fully supported media bonded onto a wire support grid**
- **Rounded pleats for a maximum capacity of dust retention and facilitate airflow through the media**
- **Replaceable filter media**

Application: Primary filter for air conditioning systems.
Type: High performance disposable pleated panel filter.
Case: Rigid water resistant cardboard.
Media: Mixture of cotton and synthetic fibre.
EN779:2012 efficiency: G4.
Gravimetric efficiency: 92%.
Recommended final pressure drop: 250 Pa.
Temperature: 70°C maximum in continuous service.
Holding frames: Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

Dimensions (WxHxD) mm	Filter classification EN779:2012	Air flow/pressure drop m³/hr/Pa	Media area m2	Unit weight kg	Unit volume m3
305x305x50	G4	864/70	0,39	0,24	0,01
305x610x50	G4	1710/70	0,79	0,4	0,01
406x508x50	G4	1890/70	0,94	0,44	0,01
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
508x508x50	G4	2340/70	1,12	0,55	0,02
508x610x50	G4	2880/70	1,36	0,66	0,02
508x635x50	G4	2970/70	1,42	0,7	0,02
610x610x50	G4	3420/70	1,64	0,78	0,02
305x610x100	G4	2070/90	1,28	0,75	0,02
406x508x100	G4	2250/90	1,45	0,85	0,02
406x635x100	G4	2880/90	1,82	1,05	0,04
508x508x100	G4	2880/90	1,73	1,05	0,04
508x610x100	G4	3420/90	2,09	1,25	0,04
508x635x100	G4	3600/90	2,18	1,3	0,04
610x610x100	G4	4140/90	2,56	1,45	0,04
305x610x25	G4	1310/65	0,42	0,25	0,01
406x508x25	G4	1460/65	0,45	0,3	0,01
406x635x25	G4	1840/65	0,57	0,35	0,01
508x508x25	G4	1800/65	0,56	0,35	0,01
508x610x25	G4	2200/65	0,68	0,4	0,01
508x635x25	G4	2300/65	0,71	0,45	0,01
610x610x25	G4	2600/65	0,83	0,5	0,01

Other dimensions are available on request - All dimensions are nominal.

APPENDIX 8
PROPOSED PRE FILTER, CARBON FILTERS AND HIGH VELOCITY JET COWL

Manufacturing Air Filters in the UK for Over 40 Years

Activated Carbon Panels

JASUN ENVIROCARE PLC

General Description

These filters are manufactured for ease of installation and incorporation into ducted air systems. They can be used on both supply for purifying incoming air, and can be used on the extract to remove toxic gasses and odours generated within a process.

Construction

The panels are manufactured using long established bonding techniques which hold the activated carbon granules in a rigid biscuit. The biscuit is encapsulated in a carbon impregnated cloth which prevents any leakage of granules or powder.

The unique bonding method used by Jasun Filtration ensures that, unlike our competitors filters, that the panels will remain intact and rigid even if wet.

For filters over 45mm we create a panel using 2 thin biscuits on the outside and loose filling the void between with activated granules. This allows us to use special grades and combinations of formulated carbon, for instance school grade carbon which is a blended mixture of carbons designed for fume cabinets.
Depth: 12mm to 150mm

Typical Applications

- Reduction of Cooking Odours
- Removal of Kerosene Exhaust Fumes
- General Odour Reduction
- Neutralisation of Ammonia and its Derivatives
- Removal of Formaldehyde
- Removal of Airborne Pollutants and Contaminants

Please check with our sales department when specifying carbon filters as most applications require a bespoke solution specifically tailored for the job in hand.

Stock Grades of Carbon

Grade	Application
AC207	Good general Carbon grade suitable for many applications
AC209	Copper Coated Carbon for use in Mueums and archives
ACKI	For enhanced garlic odour removal
ACSC1	School Grade for acid Gasses and SO_2 HCL NO_2 H_2S
ACAM	Ammonia
ACMO	Mortury Grade, formaldehyde Removal
ACCA	Caustic, Pottasium Hydroxide Impregnated
ACGU	Special formulation for Sewage odours

APPENDIX 8
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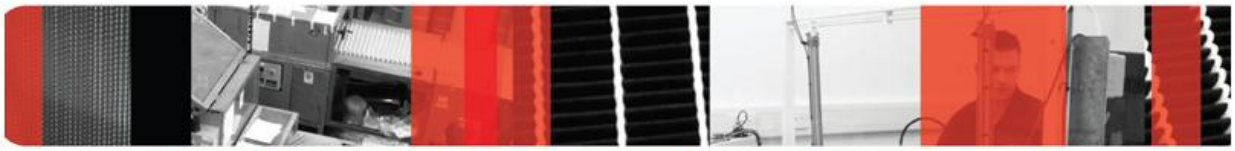
Activated Carbon Panels STANDARD SIZES



Model Number	Description	Size			Weight Of Carbon Kg	Capacity m³/hr	
		Height (mm)	Width (mm)	Depth (mm)		0.1 Second Dwell	0.2 Second Dwell
{grade}-1-1212	Carbon Panel 12x12x1	292	292	20	0.77	55	28
{grade}-1-1224	Carbon Panel 12x24x1	292	594	20	1.56	112	56
{grade}-1-1515	Carbon Panel 15x15x1	368	368	20	1.22	88	44
{grade}-1-1620	Carbon Panel 16x20x1	394	495	20	1.76	126	63
{grade}-1-1625	Carbon Panel 16x25x1	394	622	20	2.21	159	79
{grade}-1-1818	Carbon Panel 18x18x1	445	445	20	1.78	128	64
{grade}-1-1824	Carbon Panel 18x24x1	445	594	20	2.38	171	86
{grade}-1-2020	Carbon Panel 20x20x1	495	495	20	2.21	159	79
{grade}-1-2024	Carbon Panel 20x24x1	495	594	20	2.65	191	95
{grade}-1-2025	Carbon Panel 20x25x1	495	622	20	2.77	200	100
{grade}-1-2424	Carbon Panel 24x24x1	594	594	20	3.18	229	114
{grade}-2-1212	Carbon Panel 12x12x2	292	292	45	1.73	124	62
{grade}-2-1224	Carbon Panel 12x24x2	292	594	45	3.51	253	126
{grade}-2-1515	Carbon Panel 15x15x2	368	368	45	2.74	197	99
{grade}-2-1620	Carbon Panel 16x20x2	394	495	45	3.95	284	142
{grade}-2-1625	Carbon Panel 16x25x2	394	622	45	4.96	357	179
{grade}-2-1818	Carbon Panel 18x18x2	445	445	45	4.01	289	144
{grade}-2-2020	Carbon Panel 20x20x2	495	495	45	4.96	357	179
{grade}-2-2024	Carbon Panel 20x24x2	495	594	45	5.95	429	214
{grade}-2-2025	Carbon Panel 20x25x2	495	622	45	6.23	449	224
{grade}-2-2424	Carbon Panel 24x24x2	594	594	45	7.14	514	257
{grade}-4-1212	Carbon Panel 12x12x2	292	292	95	3.65	262	131
{grade}-4-1224	Carbon Panel 12x24x2	292	594	95	7.41	534	267
{grade}-4-1515	Carbon Panel 15x15x2	368	368	95	5.79	417	208
{grade}-4-1620	Carbon Panel 16x20x2	394	495	95	8.34	600	300
{grade}-4-1625	Carbon Panel 16x25x2	394	622	95	10.48	754	377
{grade}-4-1818	Carbon Panel 18x18x2	445	445	95	8.47	610	305
{grade}-4-2020	Carbon Panel 20x20x2	495	495	95	10.47	754	377
{grade}-4-2024	Carbon Panel 20x24x2	495	594	95	12.57	905	453
{grade}-4-2025	Carbon Panel 20x25x2	495	622	95	13.16	948	474
{grade}-4-2424	Carbon Panel 24x24x2	594	594	95	15.08	1086	543
{grade}-6-1212	Carbon Panel 12x12x2	292	292	150	5.76	414	207
{grade}-6-1224	Carbon Panel 12x24x2	292	594	150	11.71	843	421
{grade}-6-1515	Carbon Panel 15x15x2	368	368	150	9.14	658	329
{grade}-6-1620	Carbon Panel 16x20x2	394	495	150	13.16	948	474
{grade}-6-1625	Carbon Panel 16x25x2	394	622	150	16.54	1191	596
{grade}-6-1818	Carbon Panel 18x18x2	445	445	150	13.37	962	481
{grade}-6-2020	Carbon Panel 20x20x2	495	495	150	16.54	1191	595
{grade}-6-2024	Carbon Panel 20x24x2	495	594	150	19.85	1429	714
{grade}-6-2025	Carbon Panel 20x25x2	495	622	150	20.78	1496	748
{grade}-6-2424	Carbon Panel 24x24x2	594	594	150	23.82	1715	857

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APPENDIX 8
PROPOSED PRE FILTER, CARBON FILTERS AND HIGH VELOCITY JET COWL

Roof hood HF

Description

Ventilation hood for air exit above roof, suitable for both industrial and comfort ventilation. The air is ejected in an upwards-directed jet. This avoids contaminating the air in the vicinity of the hood, and soiling of the area around the hood. The ejection is so effective that you can install a fresh air inlet in the immediate vicinity of the hood, without any special precautions.

The hood is made of galvanised sheet steel, and can also be supplied in other materials such as stainless steel sheet 1.4301, stainless acid-resistant steel sheet 1.4404, aluzinc AZ185 and painted in various colours, to special order. It has a net over the opening and an internal rain funnel to collect rainwater and snow, which is drained out of the hood through a hose. The hose can withstand temperatures of between -45 and +65 °C.

The hood has a flange connection, which includes a mating flange. The hood can be ordered with other connections, however.

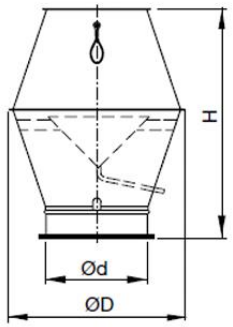
To avoid damage to the net in the opening the hood is supplied with transport protection. This must be removed before the hood is taken into service.

The hood is delivered with three turnable lifting and anchoring wire-loops. A single wire-loop shall not be exposed for forces exceeding 1500 N.

Ordering example

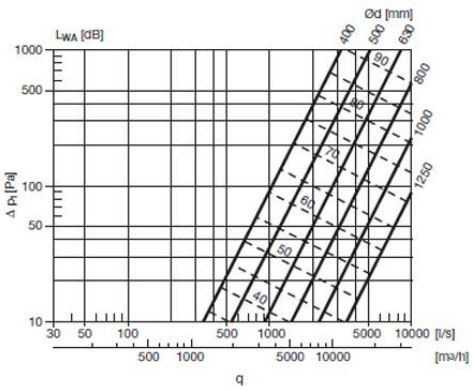
	HF	630
Product		
Dimension Ød		

Dimensions



Ød nom	ØD mm	H mm	m kg	Roof through connection TGR 50 mm Size	Roof through connection TGR 100 mm Size
500	855	1055	20,0	6	7
630	1075	1295	38,0	8	9
800	1360	1640	63,0	9	10
1000	1600	2110	89,1	11	12
1250	2020	2615	118	14	15

Technical data



APPENDIX 9
ANTI-VIBRATION MOUNTS

Anti Vibration Mounts (AV's)

Introduction

Anti-vibration mounting kits are available in both rubber and spring type, the correct selection and type employed will depend on the accurate calculation of the weight of the assembly to be supported.

Installation

AV mounts should not be fitted to a fan/silencer assembly unless there are flexible connectors fitted between the assmbly and associated duct work.

AV mounts should be installed with the matched mounting feet and positioned such that they carry an equal proportion of the assembly weight. This is particularly important where fans and silencers are installed on suspension rods.

Figure 1. **NAV 1 to NAV 5 (Resilient Rubber)**

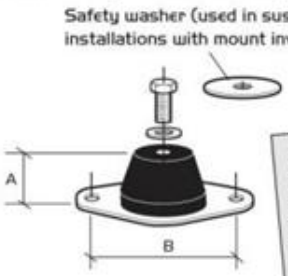


Figure 2. **NAV 6 (Resilient Rubber)**

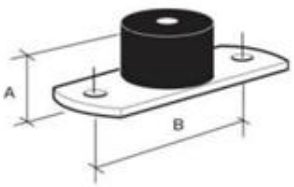
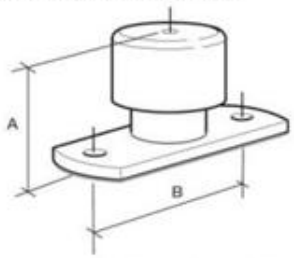


Figure 3. **NAV 49 to NAV 58 (Spring)**

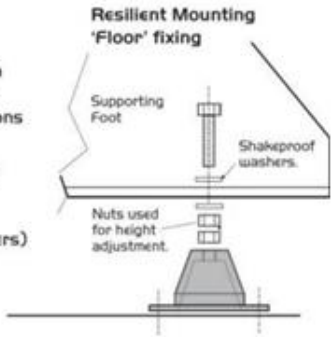


AV mounts are maintenance free but a periodical inspection is recommended to check security of fixings and condition of rubbers and springs.

AV mounts isolate the fan only. Silencers/backdraught dampers and other "significant mass" accessories should form part of the fixed ductwork after the flexible connection.

Resilient Mounting Details

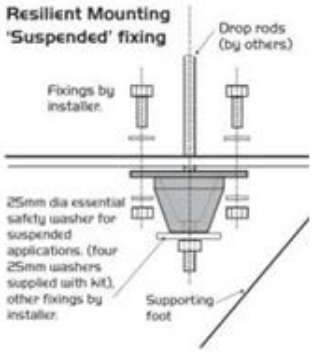
Figure 4.



NAV 1 to NAV 5 shown in floor (Figure 4) and suspended configurations (Figure 5).

Fans using size NAV 6 upwards require supporting steelwork to be designed (by others) for suspended applications.

Figure 5.



Dimensions (mm) and Weights

Rubber Type

Code	A	B	Max. kg per kit
NAV1	30	50	20
NAV2	40	75	80
NAV3	40	75	180
NAV4	40	75	260
NAV5	40	75	130
NAV6	50	100	320

Spring Type

NAV49	77	76	400
NAV50	77	76	480
NAV51	77	76	520
NAV52	87	127	600
NAV53	87	127	700
NAV54	87	127	800
NAV55	87	127	950
NAV56	87	127	1110
NAV57	87	127	1270
NAV58	87	127	1430

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