

**Assessment of the Sound Emission from the Permitted Extension
at the Salamander Fabrications Works,
Old Bank, Slaithwaite.**

Report Prepared for:

Salamander Fabrications Ltd
Old Bank
Slaithwaite
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Contents**1.0 Summary****2.0 Introduction****3.0 Site Description****4.0 Assessment Criteria**

4.1 Planning Condition 13

4.2 BS 4142:2014+A1:2019 "Methods for Rating and Assessing Industrial and Commercial Noise"

5.0 Existing Noise Climate Assessment

5.1 Survey Times and Personnel

5.2 Weather

5.3 Equipment

5.4 Measurement Procedure

6.0 Noise Climate Assessment, Comments and Results

6.1 Qualitative Assessment, Existing Noise Climate

6.2 Noise Survey Basic Results

7.0 Assessment of the Process Sound Emission Levels – Specific Sound Source**8.0 Sound Transmission from the Permitted Extension and BS 4142:2014 Assessment**

8.1 Discussion of Uncertainty

9.0 Conclusion

1.0 Summary

Planning permission was granted in August 2026 permitting the construction of a new extension at the Salamander Fabrications works, Old Bank in Slaithwaite. The planning permission document contained a number of conditions one of which, condition 13, required the completion and submission of a noise assessment to assess the potential emission of sound from the permitted extension and to assess what effect this may have on the existing noise climate.

As a consequence, Druk Limited were commissioned to undertake an assessment of the emission of sound from the permitted extension and to assess what effect it may have on the existing noise climate in the immediate vicinity of the existing Salamander Fabrications works. The assessment will be undertaken according to the procedures contained within British Standard (BS) 4142: 2014 + A1:2019 "Methods for rating and assessing industrial and commercial sound".

The existing noise climate in the vicinity of the Salamander Fabrication works was regarded as being primarily influenced by the emission of noise from the variety of existing commercial enterprises including Salamander fabrications, contained within the numerous existing mill buildings, many of which dated from the mid to late nineteenth century.

As the permitted extension will house the existing paint line currently in operation at the Salamander works, it was possible to obtain direct measurements of the specific sound level. The measurements comprised a series of spatial average measurements made around the paint line during 'normal' operation and were typical of the volume and type of work completed on the paint line.

Turning to BS 4142:2014 evaluation, the '*initial*' assessments indicate that, applying the calculated specific sound level and the stated assumptions, the excess of the rating level over the background sound level at the identified noise sensitive receptors would be in the range – 9 to - 18dB. Consequently the '*initial*' assessments would suggest that the specific sound source would be unlikely to have an adverse impact, depending on context, at the reception points as detailed within BS 4142:2014.

As such it is suggested that the operation of the existing paint line within the permitted extension, should not have a detrimental effect on the existing noise climate in the immediate vicinity of the Salamander Fabrications works.

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2.0 Introduction

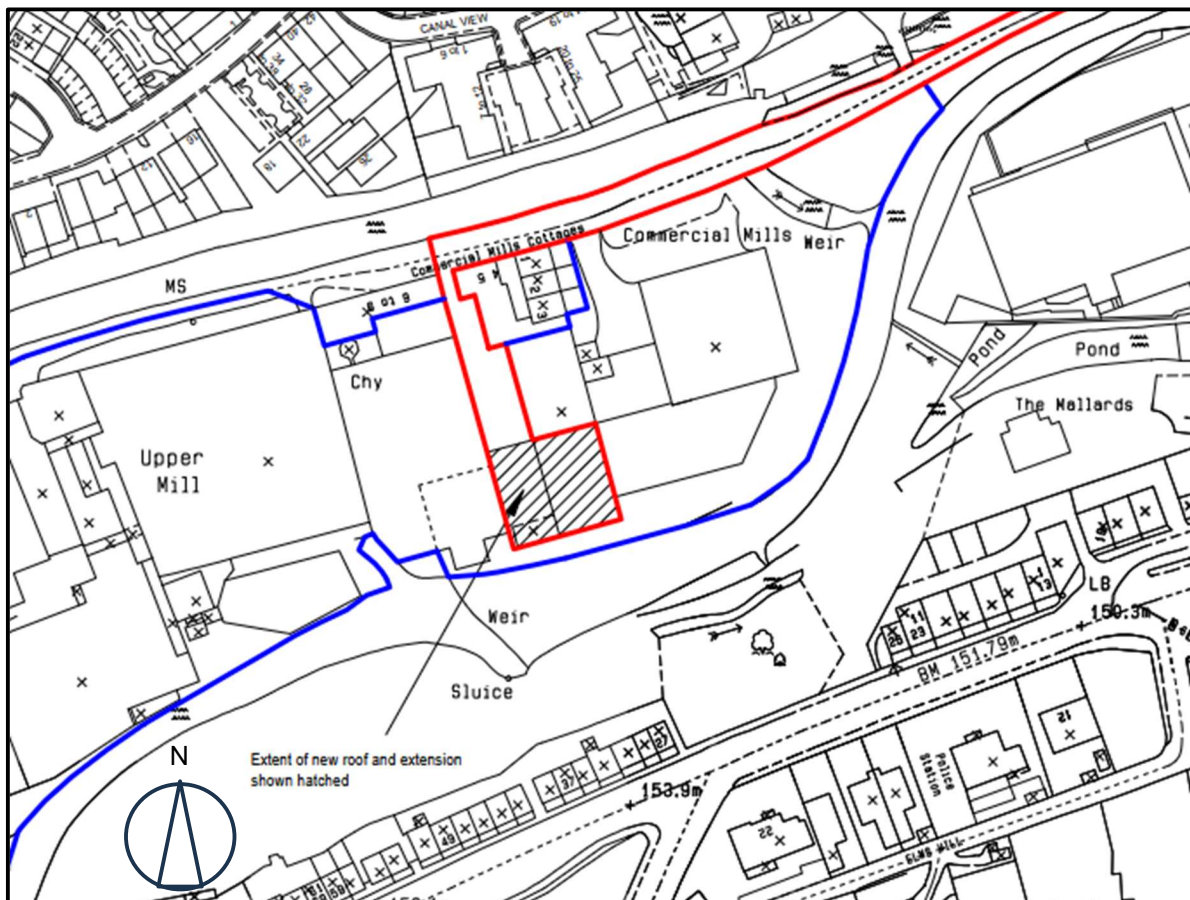
Planning permission was granted in August 2026 permitting the construction of a new extension and associated works, at the Salamander Fabrications works, Old Bank in Slaithwaite. The planning permission document contained a number of conditions, one of which, condition 13, required the completion and submission of a noise assessment to evaluate the potential emission of sound from the permitted extension and to assess what effect this may have on the existing noise climate.

As a consequence, Druk Limited were commissioned to undertake an assessment of the emission of sound from the permitted extension and to assess what effect it may have on the existing noise climate in the immediate vicinity of the existing Salamander Fabrications works. The assessment will be undertaken according to the procedures contained within British Standard (BS) 4142: 2014 + A1:2019 "Methods for rating and assessing industrial and commercial sound".

3.0 Site Description

The Salamander fabrications works is located on Old Bank in Slaithwaite, Huddersfield (figure 1 below and photograph 1 overleaf).

Figure 1. Salamander Fabrications (edged in red), incorporating the permitted extension, Old Bank, Slaithwaite



Photograph 1. Salamander Fabrications, looking South

Immediately to the North of the existing Salamander Fabrications works is the Huddersfield Narrow canal towpath and a residential apartment block beyond (photograph 2 below). To the South of Salamander Fabrications is an area of wooded land rising towards the existing houses on Manchester Road. To the East of Salamander Fabrications is another area of wooded land with the rear of the Aldi supermarket beyond. To the West of Salamander Fabrications are a number of pre-existing commercial/industrial units (photograph 3 overleaf).

Photograph 2. Canal towpath and residential apartments to the North of Salamander Fabrications

Figure 3. Commercial units to the West of Salamander Fabrications



4.0 Assessment Criteria

The following report will be based upon addressing the requirements contained within e planning condition 13 and the application of the selected assessment standard.

4.1 Planning Condition 13

The planning permission, issued in August 2026, contained a number of conditions of which planning condition 13 dealt specifically with the possible sound emission from the permitted extension and contained a requirement to evaluate what effect this may have on the existing noise climate. The full text of planning condition 13 is reproduced below.

13. Before construction work commences a noise assessment report by a suitably competent person shall be submitted to and approved in writing by the Local Planning Authority. The report shall include:

- an assessment of all noise emissions from the proposed development.
- details of existing background and predicted future noise levels at the boundary of all noise sensitive properties and the boundary of the proposed development.
- a written scheme of how the occupants of the above-mentioned noise sensitive premises will be protected from noise from the proposed development including details of all necessary noise attenuation.

The development shall not be brought into use until all works comprised within the measures specified in the approved report have been carried out in full and such measures shall be thereafter retained.

Reason: To ensure the proposed development does not cause harmful noise pollution within neighbouring noise sensitive locations, in the interest of amenity, to comply with the aims and objectives of Policies LP24 and LP52 of the Kirklees Local Plan and Chapters 14 and 19 of the National Planning Policy Framework.

Although no specific assessment criterion is detailed within the planning condition, it is thought that any evaluation of the emission of sound from the proposed external condenser unit should be undertaken in accordance with the provisions contained within BS 4142:2014+A1:2019 "Methods for Rating and Assessing Industrial and Commercial Noise". The principal elements of BS 4142:2014 are detailed below.

4.1 BS 4142:2014+A1:2019 "Methods for Rating and Assessing Industrial and Commercial Noise"

British Standard (BS) 4142:2014 was published at the end of October 2014, which replaced the earlier 1997 version of the standard and was subject to further minor amendments in the 2019 version of the standard.

The current version of BS4142 is similar to the earlier version inasmuch as it provides a method for the determination of rating levels with respect to the emission of noise from industrial and commercial facilities, as well as an evaluation of the ambient, background and residual sound levels. However, the current version contains a number of additional features and extensions of scope with the aim of making it a more flexible procedure. The extension of scope means that the Standard now encompasses methods for the assessment of sound that is industrial or commercial in nature, including:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical plant and equipment;
- Sound from the loading and unloading of goods and materials at industrial and/or commercial premises: and;
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial sites.

Notwithstanding the extension of the scope of the Standard, the Standard also makes it clear that a number of situations would be outside the scope of the assessment procedure. Here, the Standard describes the following as being beyond its scope:

- Recreational activities, including all forms of motorsport;
- Music and other entertainment;
- Shooting grounds;
- Construction and demolition;
- Domestic animals;
- People;
- Public address systems for speech, and;
- Other sources falling within the scopes of other standards or guidance.

It is also stated that *"the determination of noise amounting to a nuisance is beyond the scope of this British Standard"*.

Regarding the assessment procedure, the current version of the Standard, as with the earlier Standard, also provides a method for 'correcting' the specific sound to take account of any acoustic features that are audible at the assessment position. Unlike the earlier version the current version of the standard provides a sliding scale of corrections

of up to +6dB in the case of tonal components and up to +9dB for impulses. A further +3dB correction is also available for situations where:

- the emission of sound has characteristics that are neither tonal or impulsive; and/or
- the emission of sound is intermittent or has discernible on/off characteristics.

The determination of the presence of tonal or impulsive features can be assessed using either subjective or reference determination methods.

Once the various parameters, relating to the ambient, background, residual and rating sound levels, have been established, the standard describes a method for comparing data in order to evaluate what impact the specific noise may have on an existing noise climate. As with the earlier version of the standard the current version of the standard continues to apply the difference between the rating and background sound levels as the basis for assessment. However, unlike the earlier version the assessment is now more contextual rather than the more categorical nature of the earlier version of the standard. With reference to the context, the current version of the standard states the following with respect to the assessment of impact:

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

5.0 Existing Noise Climate Assessment

Key to understanding what effect the emission of sound from the permitted extension may have on the existing local noise climate, is the collection of data relating to the existing local noise climate in the immediate vicinity of the existing Salamander Fabrications works. The assessment of the potential emission of sound from the permitted extension would require the adoption of a reference or baseline condition, against which any sound emission may be evaluated. The baseline or background noise climate will be defined as the local noise climate that prevailed in the absence of any contribution from the permitted extension. Subsequent assessment would then be based on a comparison of the sound emitted from the process in question with the existing background noise climate. Indeed, the establishment of the existing background noise climate is a pre-requisite for any assessment conducted in accordance with the provisions of BS 4142.

In pursuance of the above aim, surveys to establish representative baseline conditions relating to the existing noise climate around the Salamander Fabrications works were conducted. With reference to the measurements of the existing background sound levels, although activity from many of the operations at Salamander Fabrications were

audible, it was not possible to hear any sound believed to emanate from the existing paint line. It is also the case that activity within the Salamander Fabrications works represents potentially the principal contributor to the existing noise climate in the vicinity of what would be the nearest noise sensitive locations during working hours.

5.1 Survey Times and Personnel

Surveys to establish the existing noise climate in the vicinity of the Salamander Fabrications works, in the absence of any contribution from the permitted extension, were conducted over typical opening hours. In this respect, Salamander Fabrications operates between 07:45 – 16:15 hours on Monday to Thursday and between 07:45 to 15:15 hours on Friday. With reference to the permitted extension, the processes that will be contained within the extension will operate according to the same operating hours as the rest of the site. Consequently, measurements of the existing noise climate were made between 08:00 – 16:15 hours to cover the typical opening hours.

5.2 Weather

At the commencement of the noise surveys, the following weather conditions prevailed:

Survey commencement, 14:15 hours, 1st September 2026

All surfaces were dry, cloud cover was approximately 95%, the temperature was approximately 19°C, the barometric pressure was approximately 1003mbar and the wind speed was approximately 2.4m/s from the South West.

Survey commencement, 10:30 hours, 2nd September 2026

All surfaces were wet, cloud cover was 100%, the temperature was approximately 17°C, the barometric pressure was approximately 1002mbar and the wind speed was approximately 0.6m/s from the South West.

Survey commencement, 08:00 hours, 4th September 2026

All surfaces were wet, cloud cover was 90 - 100%, the temperature was approximately 16°C, the barometric pressure was approximately 1002mbar and the wind speed was approximately 3.3m/s from the West.

5.3 Equipment

The measurements of the existing noise climate were conducted using the equipment detailed in table 1 overleaf.

All the equipment used is calibrated by a UKAS accredited calibration laboratory and the calibration certificates are available on request.

The sound level meter was field calibrated before and after the noise measurements, during which time no significant deviation in the calibrated level was observed.

Table 1. Equipment used during the existing noise climate surveys

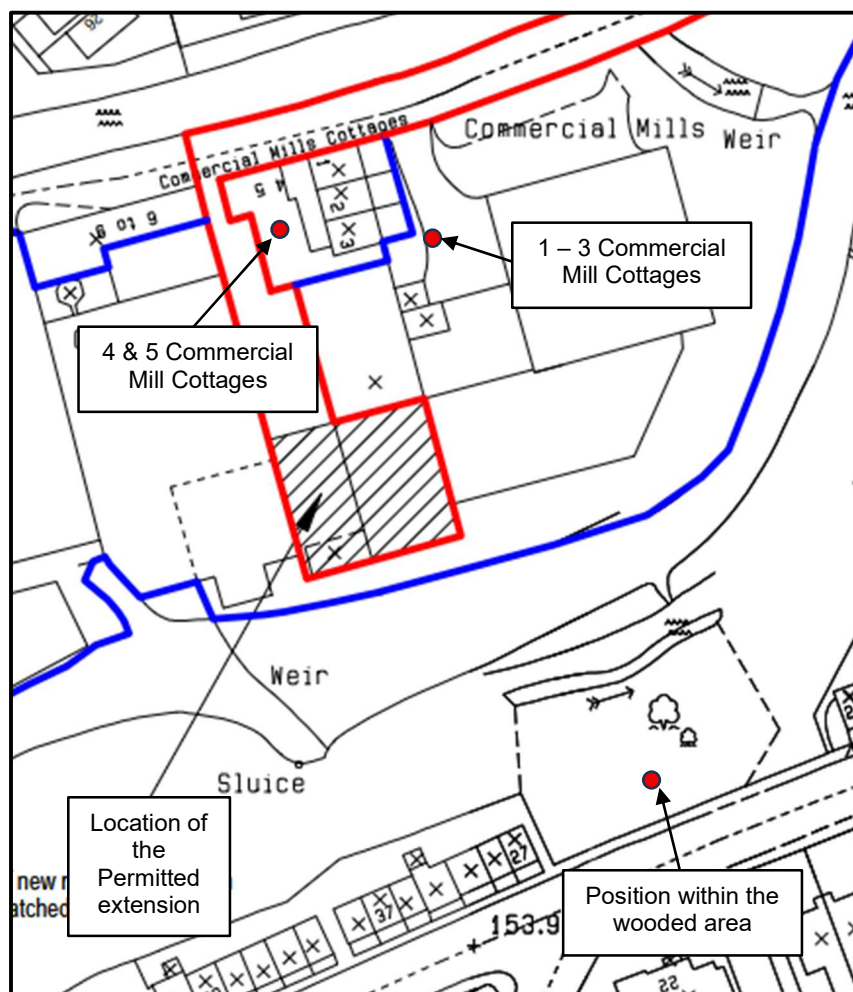
Equipment description	Manufacturer	Model number	Serial number
Sound level meter	NTI Audio	XL2-TA	A2A-10232-E
Microphone pre-amplifier	NTI Audio	MA220	5537
Microphone	NTI Audio	M2230	8636
Acoustic calibrator	Norsonic AS	Nor 1251	31522

5.4 Measurement Procedure

The closest residential premises and so the locations regarded as the nearest noise sensitive receptors to the permitted extension, were identified as being the front elevation of 1 – 3 and the rear elevation of 4 and 5 Commercial Mill Cottages (photographs 4 and 5 respectively below and overleaf) to the North of the Salamander Fabrications Works near the canal towpath.

Photograph 4. 1 – 3 Commercial Mill Cottages (looking South West)

In addition, the houses to the South of the permitted extension adjacent to Manchester Road, were also identified as being potential noise sensitive receptors. The measurement positions outside number 3 Commercial Cottages and to the rear of 4 and 5 Commercial cottages were approximately 25 and 37 metres respectively, from what will be the Northern elevation of the permitted extension. The measurement position close to the houses on Manchester Road was approximately 45 metres from the permitted extension. The approximate location of the measurement positions is as detailed on figure 2 overleaf.

Photograph 5. 4 and 5 Commercial Mill Cottages (looking South West)**Figure 2.** Approximate location of the measurement positions

With reference to the assessment of the existing noise climate close to the dwellings on Manchester Road, as Druk Limited have no rights of access to private land, it was not possible to make measurements directly outside the houses. As a consequence, measurements of the existing noise climate were made in a position that was within the wooded area, as detailed on figure 2 above, but roughly in line with the rear elevation of the houses. By virtue of the fact that the terrain within the wooded area was challenging: steep and uncertain under foot following the recent rain (photograph 6 below), the measurements in this location were limited to two periods during the mid-morning and mid-afternoon. With reference to the mid-morning and mid-afternoon periods, these are frequently regarded as being the quietest periods during a typical day. Consequently, the measurements made during these periods could be regarded as representing a stringent criterion for the subsequent assessments.

Photograph 6. Terrain within the wooded area to the North of Manchester Road



During the course of the existing noise climate surveys the sound level meter microphone was placed within a weather protection enclosure, which was fixed to a tripod such that it was around 1.4 metres above ground levels at least 2.5 metres from any large and potentially reflecting surface. The microphone was connected to the sound level meter via a short extension cable.

Throughout the background noise survey, the measurement time interval was 15 minutes. All measurements were made with the 'fast' time weighting engaged and data relating to the L_{eq} and L_{90} parameters were collected. The surveys were attended throughout their duration.

6.0 Noise Climate Assessment, Comments and Results

The existing noise climate in the vicinity of the Salamander Fabrication works was regarded as being an amalgam of the existing commercial enterprises, contained within the numerous existing mill buildings many of which dated from the mid to late nineteenth century, some noise from the residential dwellings and other transportation noise sources.

Although a number of visits were made to the site to evaluate the existing noise climate, the qualitative impression was formed that the noise climate itself remained relatively consistent and unchanging, in nature if not overall sound level. This being the case, the following paragraphs contain qualitative assessments of the existing noise climate.

6.1 Qualitative Assessment, Existing Noise Climate

The existing noise climate in the vicinity of 1 – 3 Commercial Cottages was largely dominated by activity within the Salamander Fabrications works. The majority of the noise from the Salamander works consisted of contributions from activities associated with laser cutting operations and activity within the outside storage and turning area. In this position, some activity from the assembly shop was also audible as were intermittent contributions from the workshops. Overall, the noise contributions from activity within the existing Salamander works comprised mainly the sound of metal components being cut and fabricated and moved around the site on fork lift trucks. During the course of the surveys, the process noise remained relatively constant with some short-term increases and decreases in level as processes were commenced or completed. Some additional noise was also associated with deliveries and collections of components etc., from the outside storage and turning area.

Additional noise sources in the vicinity of 1 – 3 Commercial Cottages, not believed to be associated with the Salamander works, noted during the surveys included: the sound of frequent vehicle movements on the road adjacent to the tow path, regular conversation from pedestrians talking as they walked along the road adjacent to the tow path, frequent train movements on the viaduct to the North West of the Salamander works and not infrequent higher altitude aircraft overflights by both commercial and smaller aircraft.

Tuning to the existing noise climate at the rear of 4 and 5 Commercial Cottages, the character of the noise climate in this position was similar to that of the noise climate outside numbers 1 – 3 Commercial Cottages. Despite this, some differences in the contributors to the noise climate did exist. The principal difference in the noise climate related to the reduction in noise from the assembly shop and workshops but a significant increase in noise from both the Steel Dreams fabrication shop and the arrival and departure of vans at the Slaithwaite Storage unit. In essence the emission of sound from activity within the Steel Dreams fabrication shop was very similar to that from Salamander Fabrications itself, although the overall levels were at times a little higher.

Again, additional noise sources included: the sound of frequent vehicle movements on the road adjacent to the tow path, regular conversation from pedestrians talking as they walked along the road adjacent to the tow path, frequent train movements on the viaduct to the North West of the Salamander works and not infrequent higher altitude aircraft overflights by both commercial and smaller aircraft.

Finally, with reference to the measurements made within the wooded area, the principal contributors the existing noise climate were: road traffic on the A62 Manchester Road, the sound of the water in the River Colne and some occasional metallic noise from the direction of the Salamander Fabrication works. Additional noise sources included some noise from the surrounding houses, occasional train and aircraft noise and the susurrantion of the leaves in the trees.

6.2 Noise Survey Basic Results

Tables 2, 3 and 4 below and overleaf, contain summaries of the measured sound levels from the existing noise climate survey.

Table 2. Measured sound level summary, 1 – 3 Commercial Mill Cottages

Date	Measurement start time	$L_{Aeq, 15 \text{ minutes}}$	$L_{A90, 15 \text{ minutes}}$
1st September 2026	14:15	60	54
	14:30	62	54
	15:15	59	52
	15:30	65	54
2nd September 2026	10:30	61	50
	10:45	53	50
	11:30	55	50
	11:45	55	50
4th September 2026	08:30	58	53
	08:45	57	53
Standard deviation	-	3.66	1.83
Mean (log) value	-	60	52
Modal value	-	55	50
Maximum value	-	65	54
Minimum value	-	53	50

Table 3. Measured sound level summary, 4 & 5 Commercial Mill Cottages

Date	Measurement start time	L_{Aeq} , 15 minutes	L_{A90} , 15 minutes
1st September 2026	14:45	62	48
	15:00	60	48
	15:45	49	45
	16:00	49	43
2nd September 2026	10:00	55	48
	10:15	59	49
	11:00	50	46
	11:15	55	46
4th September 2026	08:00	57	49
	08:15	59	50
Standard deviation	-	4.77	2.15
Mean (log) value	-	57	48
Modal value	-	49	48
Maximum value	-	62	50
Minimum value	-	49	43

Table 4. Measured sound level summary, wooded area – Manchester Road

Date	Measurement start time	L_{Aeq} , 15 minutes	L_{A90} , 15 minutes
4th September 2026	09:30	55	51
	09:45	56	51
	15:00	57	51
	15:15	55	51
Standard deviation	-	0.96	0.00
Mean (log) value	-	56	51
Modal value	-	55	51
Maximum value	-	57	51
Minimum value	-	55	51

As can be seen from tables 2, 3 and 4 above, the highest measured levels relating to the existing noise climate close to the Salamander Fabrication works were measured outside 1 – 3 Commercial Cottages, followed by the situation at the rear of 4 and 5 Commercial Cottages. The measured levels in the wooded area close to the houses on Manchester Road, display the least variability and this was a consequence of the steadier contributions made by both the traffic on the A62 and the River Colne.

7.0 **Assessment of the Process Sound Emission Levels – Specific Sound Source**

The permitted extension will house the existing paint line and some of the operations associated with it. With respect to the subsequent assessments that will be undertaken in accordance with the BS 4142:2014 procedure, the paint line will be regarded as the specific sound source within the permitted extension.

In order to obtain an indication of the likely specific sound level, measurements of the existing paint line in operation were made. The measurements comprised a series of spatial average measurements made around the paint line during ‘normal’ operation. Discussions with the paint line operatives indicated that the conditions that prevailed during the measurements were typical of the normal operation of the paint line. The mean (log) of the spatial average sound emission levels from the existing paint line are as detailed within table 5 below.

Table 5. Spatial average sound emission levels, existing paint line

OBCF, Hz*	63	125	250	500	1k	2k	4k	8K	L_p , dB
Paint line spatial average sound emission levels	80	80	77	76	75	72	71	71	80

8.0 **Sound Transmission from the Permitted Extension and BS 4142:2014 Assessment**

In order to evaluate the likely sound level at the nearest noise sensitive locations, these locations had to be identified. As previously identified in section 5.4 above, the closest noise sensitive receptors to the permitted extension would be: the front elevation of 1 – 3 and the rear elevation of 4 and 5 Commercial Mill Cottages and the rear elevation of the houses bordering Manchester Road.

In order to assess the likely sound transmission levels at the nearest noise sensitive location, resulting from the operation of the paint line within the permitted extension, a noise modelling exercise has been undertaken. The modelling of the noise source propagation was undertaken using Cadna A software, produced by Datakustik, which calculates noise propagation based on the processes of *ISO 9613: Acoustics – Attenuation of sound during propagation outdoors*.

In general terms the sound from the paint line operations within the permitted extension will spread out to the noise sensitive locations highlighted above. With reference to the propagation calculations, the software permits the effect of reflections and screening effects from any intervening structures, where applicable, to be taken into account in what is a relatively complex propagation environment.

For the purposes of the model, it has been assumed that the noise levels presented in table 5 above would be appropriate and these levels will form the basis of the modelling calculations. The Cadna A modelling software, as with all other similar software, is reliant on all the inputs and assumptions. With reference to the assumptions made in the modelling process, the following key inputs and assumptions were applied during the propagation modelling:

- The ground is a mixture of soft and reflective but assumed here to be mainly reflective (an absorption coefficient of 0.2 assumed).
- Calculations are based on two orders of reflections.
- The existing building and the surrounding buildings and structures are assumed to be mainly reflective (0.5dB loss on reflection assumed).
- The surrounding trees and vegetation will provide a small degree of absorption but this has been neglected.
- Where acoustic fences are used, they are also assumed to be reflective the same as the buildings, unless specified otherwise.
- The software then calculates the noise at nearby noise-sensitive properties. The predicted façade noise levels are calculated for all floors and the software automatically displays the noisiest floor level.
- The model uses the 'as measured' sound levels from the paint line.
- It has been assumed that the measured internal noise in the extension will persist during the working day and is spread over all internal surfaces.

With reference to the superstructure of the permitted extension, it is understood that the walls and roof will be formed from insulated steel panels, similar to Kingspan KS1000 - type cladding. With reference to this type of construction, the published sound insulation provided by a Kingspan KS1000 will be 25dB R_w with the sound insulation values being as detailed in table 6 below.

Table 6. Kingspan KS1000 panel sound insulation values

OBCF, Hz*	63	125	250	500	1k	2k	4k	8K	Overall dB R_w
Sound insulation, dB R_w	20	18	20	24	20	29	39	47	25

Employing all the stated assumptions, an indication of the likely external sound transmission levels at the various noise sensitive locations may be found within figures 3, 4 and 5 overleaf.

Figure 3. Calculated resulting sound levels at the various noise sensitive locations surrounding the permitted extension, overview.



Figure 4. Calculated resulting sound levels at Commercial Cottages, 'zoom' image



Figure 5. Calculated resulting sound levels at the Manchester Road dwellings, 'zoom' image



As can be seen from figure 4 the calculated specific sound level at the front elevation of 1 – 3 Commercial Cottages is around 31 to 32dB and at the rear elevation of 4 and 5 Commercial Cottages is around 38 to 39dB. With reference to the dwellings adjacent to Manchester Road, figure 5 details that the calculated specific sound levels at the rear elevations of the houses would be around 36 to 37dB.

Turning to the BS 4142:2014 assessment procedure, this requires the specific sound level to be compared with an appropriate background, L_{A90} , sound levels at the noise sensitive receptors. Consequently, the selection of an appropriate background sound level is a key feature of the BS 4142 assessment process and in this regard the British Standard at section 8.1 states "*..the objective is not simply to ascertain a lowest measured background sound level*" and at section 8.1.4 the British Standard states "*..there is no "single" background sound level as this is a fluctuating parameter. However, the background sound level used for the assessment should be representative of the period being assessed*". This being the case, the modal values of the measured background sound levels from the existing noise climate surveys will be adopted in the following assessments and, the applied values are detailed in table 7 below.

Table 7. Modal background (L_{90}) values for the noise sensitive locations

Location	Background, L_{90} , modal values dB
1 – 3 Commercial Cottages, front elevation	50
4 and 5 Commercial Cottages, rear elevation	48
Manchester Road dwellings, rear elevation	51

In order to define the overall rating level reference must be paid to the character correction categories detailed within BS 4142:2014. As stated within section 4.1 above, these corrections may be applied where:

- The emission of sound has characteristics that are either tonal or impulsive; and/or
- The emission of sound is intermittent or has discernible on/off characteristics.
- The emission of sound possesses "*characteristics*" that "*are readily distinctive against the residual acoustic environment*".

It must be remembered that these character corrections are only applicable where the emission of sound from the specific sound source, are audible in the reception locations. As the permitted extension has not yet been built, for the purposes of this assessment it will be assumed that the resulting sound emission from the extension may be audible in the receptor locations. It is however suggested that this assumption must be regarded as a worst-case assumption.

The perception of tonality of the specific noise source can attract penalties of between 0dB to +6dB. If a tone is *just perceptible* at the reception point a +2dB penalty can be applied, a penalty of +4dB where it is *clearly perceptible* and a maximum penalty of +6dB can be applied where it is *highly perceptible*. Reference to the existing paint line sound emission levels detailed in table 5 above, suggests that the sound emission does not appear to possess any particular tonal components and this was also supported by

the qualitative impression formed during the specific sound level measurements. Therefore, no correction for this feature will be applied.

Impulsivity in this context may be regarded as a feature where the sound in question may be regarded as a '*sudden sound*' as perceived at the reception point. This feature relates to the onset of the sound only and not the '*quality*' of the sound in general. Although the current operations at Salamander Fabrications do include some impulsive noise, during the course of the paint line sound emission measurements the operations were not judged as having any impulsive components. Consequently, the impulsivity correction is not thought to be appropriate in this case.

As the operation of the paint line will be continuous, except during break periods, the emission of noise from these operations will be continuous rather than intermittent. As such, the intermittency correction is not thought to be appropriate in this case.

Finally, the issue as to whether the resulting sound at the reception point may possess "*characteristics*" that "*are readily distinctive against the residual acoustic environment*" must be considered. It should however be borne in mind that this element is not applicable where penalties have been applied in any of the other categories. As the permitted extension will replace some of the older buildings that have, over the passage of time, been subject to alterations resulting in the creation of holes etc., it is likely that the permitted extension will 'contain' the sound from the paint line operations better than the existing buildings. It is also the case that the operations at Salamander Fabrications already make a significant contribution to the existing sound environment. This being the case, it is suggested that the resulting sound at the reception points will not possess "*characteristics*" that "*are readily distinctive against the residual acoustic environment*", therefore a correction for this element would not be appropriate.

Assessments according to the scheme contained within BS 4142:2014 will be undertaken for the identified noise sensitive receptor locations. For the assessment of the sound emission from the proposed external condenser unit, BS 4142 requires us to assess the predicted commercial/industrial noise against the *background sound level*, which is the noise climate without development described in terms of the underlying dB *L_{A90}* index. This gives us the *initial estimate*. This must then be considered in terms of *context* to arrive at the final assessment. According to the assessment of impacts discussed at section 11 of BS 4142:2014, it states that "*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*".

The results of the BS 4142:2014 '*initial*' assessments for the identified noise sensitive receptors are summarised in tables 8, 9 and 10 overleaf.

Table 8. BS4142: 2014 assessment, front elevation of 1 – 3 Commercial Cottages

	Afternoon period
	L_p , dB
Calculated specific sound level at noise sensitive location, L_{Aeq}	32
Background sound level, L_{A90} , modal value	50
Acoustic feature corrections	0
'On time' correction	0
Rating level	32
Excess of rating over background level	-18
Assessment result:	Indicates that the specific sound source would be unlikely to have an adverse impact, depending on context
Uncertainty of measurement:	see comments below

Table 9. BS4142: 2014 assessment, rear elevation of 4 and 5 Commercial Cottages

	Afternoon period
	L_p , dB
Calculated specific sound level at noise sensitive location, L_{Aeq}	39
Background sound level, L_{A90} , modal value	48
Acoustic feature corrections	0
'On time' correction	0
Rating level	39
Excess of rating over background level	-9
Assessment result:	Indicates that the specific sound source would be unlikely to have an adverse impact, depending on context
Uncertainty of measurement:	see comments below

Table 10. BS4142: 2014 assessment, rear elevation of the Manchester Road houses

	Afternoon period
	L_p , dB
Calculated specific sound level at noise sensitive location, L_{Aeq}	37
Background sound level, L_{A90} , modal value	51
Acoustic feature corrections	0
'On time' correction	0
Rating level	37
Excess of rating over background level	-14
Assessment result:	Indicates that the specific sound source would be unlikely to have an adverse impact, depending on context
Uncertainty of measurement:	see comments below

As can be seen from the above '*initial*' assessments, the excess of the rating level over the background sound level at the noise sensitive receptors would be in the range – 9 to - 18dB using the modal values for the background noise climate. Consequently the '*initial*' assessments suggest that, applying the calculated specific sound level evaluated by applying the stated assumptions and comparing this with the results of the existing noise climate survey, the specific sound source would be unlikely to have an adverse impact, depending on context, at the reception points as detailed within BS 4142:2014.

Repeating the procedure but using the lowest measured background sound levels at 1 – 3 Commercial Cottages, 4 and 5 Commercial Cottages and for the houses on Manchester Road: 50, 43 and 51dB L_{A90} respectively, the resulting initial assessments would be in the region of: -18, -4 and -14dB respectively for the three locations. This would again suggest that the specific sound source would be unlikely to have an adverse impact, depending on context, at the reception points as detailed within BS 4142:2014.

As such it is suggested that the operation of the paint line within the permitted extension should not have a detrimental effect on the existing noise climate in the immediate vicinity of the Salamander Fabrications works.

The requirement to consider the "*context*" of the situation in conjunction with the overall rating levels is an essential part of the BS 4142:2014 assessment procedure. Consequently, the assessment outcome must be considered in the light of the '*context*' of the calculated sound emission from the external condenser unit and the environment in which it is located.

The first element to consider is the fact that the permitted extension would not be adding a new noise source to the local noise climate, but would represent a continuation of an existing use, but with the potential to reduce the emission of sound from one of the existing processes by virtue of it being within a new and purpose-built enclosure. Consequently, it is suggested that these two facts would result in a net positive gain for the local community.

It is also the case that the measured sound levels relating to the existing residual noise climate, were higher than the calculated sound emission levels from the permitted extension housing the paint line. This fact would further support the assertion that the specific sound source would not have an adverse impact on the local existing noise climate. It should however be remembered that the above assessment does not suggest that the emission of sound would necessarily be inaudible at the selected receptor locations, but that it would be unlikely to have an adverse impact on these locations.

8.1 Discussion of Uncertainty

The assessment procedure contained within BS 4142:2014 requires the assessor to *"Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty"*.

Starting with the measurements of the background and residual sound levels, these measurements were made at representative periods throughout the typical Salamander Fabrications working day. This being the case, it is suggested that the measured background and residual sound levels were regarded as being representative of the noise climate in the immediate vicinity of the permitted extension.

Although BS 4142:2014 does not state what would be a representative background sound level, it also does not suggest that it should be lowest measured level, and in this respect practice varies widely. The approach adopted in this assessment was to utilise the modal value of the measured background L_{A90} levels from the survey and this was believed to represent a suitable indicator of the prevailing background sound levels.

Varying meteorological conditions are unlikely to have a significant impact on the assessments as the conditions during the noise survey accorded with those stated in BS 4142:2014. Consequently, this element may be regarded as being having a minimal effect on the obtained results.

9.0 **Conclusion**

The existing noise climate in the vicinity of the Salamander Fabrication works was regarded as being primarily influenced by the emission of noise from the variety of existing commercial enterprises, contained within the numerous existing mill buildings, many of which dated from the mid to late nineteenth century.

As the permitted extension will house an existing process, the paint line, it was possible to obtain direct measurements of the specific sound level. The measurements comprised a series of spatial average measurements made around the paint line during 'normal' operation which were typical of the normal operation of the paint line.

Turning to BS 4142:2014 evaluation, the '*initial*' assessments, the excess of the rating level over the background sound level at the noise sensitive receptors was calculated as being in the range – 9 to - 18dB for the assessment period. Consequently the '*initial*' assessments would suggest that, applying the calculated specific sound level evaluated by applying the stated assumptions and comparing this with the results of the existing noise climate survey, the specific sound source would be unlikely to have an adverse impact, depending on context, at the reception points as detailed within BS 4142:2014.

As such it is suggested that the operation of the paint line within the permitted extension should not have a detrimental effect on the existing noise climate in the immediate vicinity of the Salamander Fabrications works.