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Consulting Engineers Limited



## Chirk Particleboard Facility



**Kronospan**

Noise Management Plan

## Document approval

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# 1 Introduction

Kronospan is the UK's leading manufacturer of high-quality wood-based panels and associated products and has been operating in the UK since 1970. The main products manufactured by Kronospan at the Chirk site (the Facility) are particleboard, medium density fibreboard (MDF) and laminate flooring.

Following issue of the consolidated Environmental Permit (EP) (Ref: EPR/BW9999IG) by Natural Resources Wales (NRW) the Facility is required to produce a standalone noise management plan (NMP) as part of Improvement Condition (IC) 40. The IC requires that the NMP is in accordance with Environmental Agency (EA) online guidance "Noise and Vibration Management: Environmental Permits" and addresses the delivery of all relevant Production Wood-based Panels BAT Conclusions and considers comments made by Wrexham County Borough Council (WCBC) in letter dated 8<sup>th</sup> June 2022.

The purpose of the NMP is to demonstrate that the control of noise has been taken into account in the operation of the Facility.

This NMP is a working document and is updated and refined as required throughout the operation of the Facility. The NMP forms an integral part of the site Environmental Management System (EMS) and operational staff have easy access to the document via the site internal computer systems. Further to this the NMP sets out operational procedures to control and mitigate noise from the Facility, made available to all operational staff working at the Facility.

In developing this NMP, Kronospan understands its responsibilities for controlling noise generated by the Facility, and is committed to ensuring that its operations do not result in unacceptable noise impacts at off-site receptors. Kronospan is committed to ensuring that all noise control equipment is designed, operated and maintained appropriately to ensure that noise is effectively controlled at all times.

As explained within, Kronospan will undertake regular and periodic review of the NMP to ensure that it is effective at controlling noise and mitigating the impact of noise generated by the Facility.

This has been updated to include for the activities arising as a result of the proposed EP variation. Full details of the EP variation can be found in the Supporting Information for the EP application.

## 1.1 Report structure

This report has the following structure broadly in line with the guidance provided by the EA, as referred to in the IC by NRW:

- Details of the site location including site address are presented in section 2.
- Review of sources, pathways and receptors are presented in section 3.
- A noise risk assessment including measures for noise management at the Facility are outlined in section 4.
- Proposals for noise monitoring at the site are described in section 5.
- Further details on the reporting and complaints procedures to be implemented at the Facility are provided in section 6.
- Actions in the case that unacceptable noise has been monitored or complaints have been received is included within section 7.
- Improvements are included in section 8.

## 2 Site location and description

### 2.1 The site

The Facility extends to around 40 hectares and comprises a number of large industrial process buildings housing the main manufacturing processes, storage areas for raw materials, warehouse buildings for manufactured products, together with other facilities associated with a discrete manufacturing business.

The western perimeter of the Kronospan site is formed by the Shrewsbury to Chester railway. Improved railway siding facilities have been constructed within the Kronospan site to enable an increased volume of timber to be imported by rail and the new rail sidings are now operational. The Shropshire Union Canal is located to the west of the railway line. Water is abstracted from the canal for use in the manufacturing process. The eastern perimeter of the site is formed by Holyhead Road (B5070). An earth bund, planted with trees, has been developed along the eastern perimeter of the site in order to reduce the visibility, noise and dust impacts of the site operations from neighbouring properties on Holyhead Road.

A sewerage pumping station and one property, owned by Maesgwyn Estate, are located to the immediate north of the Site. To the immediate south of the Site is the Mondelez factory and the Chirk recreational ground.

The main residential area of Chirk is located to the east of the site with residential properties lining the majority of the eastern side of Holyhead Road. Chirk town centre is located approximately 500m to the south east of the site.

The wider area beyond the urban settlement of Chirk is dominated by agricultural fields and woodland. Chirk Castle and its grounds are located to the west of the site, beyond the Llangollen Canal.

The Facility location in the context of the wider area is displayed in Figure 1 of Appendix A.

### 2.2 Site address

The site address is as follows:

Kronospan Ltd,  
Maesgwyn Farm, Chirk,  
Wrexham,  
LL14 5NT,  
United Kingdom

### 2.3 Summary of operations

The panel board manufacturing process incorporates a detailed multi-step set of operations including creation of sawdust and wood chips, drying processes, pressing, resin manufacture, resin impregnation, packing and storage. The Facility is operated in accordance with the extant varied and consolidated EP (Ref: EPR/BW9999IG), which was granted by NRW on 4<sup>th</sup> October 2022. A full summary of operations is detailed within the EP, and further details are provided within section 3.2 (potential noise sources) and section 4.2 (control of noise).

## 3 Review of sources, pathways and receptors

### 3.1 Noise

Emissions of noise radiating from the operation of the Facility (for example, regular 'drone' type noise, impacts from movement of materials and tonal noise from reversing alarms) can give rise to annoyance at local resident properties and affect their enjoyment of their homes and gardens. Long-term exposure to high levels of noise pollution can cause nuisance resulting in sleep disturbance, anxiety and stress and can therefore affect health.

### 3.2 Noise impact assessment

A Noise Impact Assessment is being developed for the Facility. This will be provided to NRW in due course. This will quantify the impact of noise emissions from the Facility at offsite receptors and be used to identify the main sources of noise from the Facility. This will be used to identify and inform the site noise improvement programme to minimise noise impacts on the local environment going forward.

A previous Noise Impact Assessment (NIA) report (ref: R17.0506/3/DRK dated 24<sup>th</sup> May 2019) was produced by external noise consultants, NVC Ltd, in May 2019, based on the 2016 baseline survey. The overall conclusion of the NIA is as follows:

*"In Summary, the noise generated by the Proposed Development is shown to be negligible at nearest sensitive receptors (NSRs) and is therefore insignificant. The additional noise, in terms of the effect on the overall noise from the Kronospan site (cumulative effect) at NSRs would be slight and the overall site noise remains below background sound levels established in 2011 and more recent survey in 2016 and therefore in cumulative terms also remains insignificant. Furthermore, the replacement of older plant will provide a reduction in noise levels."*

In 2021, due to a number of developments on site including the replacement of old plant with newer and quieter equipment, an update to the baseline was undertaken by NVC Ltd (Report R21.0807/DRK dated 21<sup>st</sup> August 2021). The baseline survey results were updated and included in the OSB assessment report by NVC Ltd (Report ref: R17.0506/2/DRK dated 7<sup>th</sup> September 2021). The conclusions include the following:

- (i) *"The results show that in terms of the cumulative effect of all new plant consented or appealed since 2011 would result in a **low impact to adverse impact** (i.e. according to BS 4142: 2014+A1:2019). When considering the increase in residual noise levels the increase is shown to be a **negligible impact** according to IEMA guidance (i.e. no significant background sound 'creep' in accordance with H3 Guidance).*
- (ii) *When including the cumulative effect of vehicle movements on site, the impact according to BS4142:2014+A1:2019 would result in a **low to adverse impact** and a **negligible to slight impact** according to IEMA guidance. Whilst the cumulative impacts are indicated to fall within an adverse impact and show some increase in background sound, this is not expected to be significant.*

- (iii) *The Company has been making improvements to site generated noise levels by replacing older plant with new that has provided improvements in the background sound from Kronospan, which is shown and reflected by the latest background sound study (compared with the 2011 baseline study) to which the overall site is now compared.*
- (iv) *The overall cumulative site contribution does not result in a significant adverse impact according to BS4142:2014+A1:2019.”*

### 3.3 Potential noise sources

The management of the Facility is split into departments. A register of noise sources within the Facility is contained in Appendix D. This includes details of the noise levels at source and has been used to inform the Noise Impact Assessment. This includes potential noise associated with raw materials, the production process, maintenance, abnormal activities and waste management for each department. This noise register is linked to each departmental aspect register (which forms part of the EMS). This sets out the maintenance frequency of each identified piece of equipment.

### 3.4 Pathways

Airborne noise (i.e. the spreading of sound energy) radiated from plant, vehicles and plant buildings on site has the potential to be transferred to nearby receptors through the air. The extent to which the noise is perceptible or where it becomes a nuisance at sensitive receptors is dependent upon the pathway. This is influenced by the separation distance, wind direction, wind speed, frequency of sound, obstructions along the pathway, type of ground cover, meteorological conditions, height of noise source and receptor above ground level, and the size and characteristics of the noise source.

### 3.5 Receptors

A human sensitive receptor is any location where a person may experience perceptible site noise which causes adverse impacts or annoyance or nuisance in accordance with relevant noise guidance and standards. Sensitive human receptors can include:

- Residential dwellings;
- Schools;
- Hospitals;
- Care homes;
- Childcare facilities;
- Hotels;
- Gardens (where relevant public exposure is likely i.e. excluding extremities of gardens or front gardens); and
- Sensitive commercial premises which may include for example, an office environment.

For the Facility, there are several receptors located within the village of Chirk to the east and other receptors to the south and west direction relative to site. The receptors used within this NMP provide a good cross-section of receptor locations which are either in proximity to the site and at greater distance where noise may be perceptible. It is recognised that they are not an exhaustive list and that consideration of noise levels in other residential areas around the Facility may also need to be considered, as required.



It is also important to consider ecological receptors. Ecological receptors could include internationally, nationally or locally designated sites. There are 2 ecologically designated sites within 1 km of the installation boundary.

The sensitive receptors are tabulated in Table 1 and indicated in Figure 2 of Appendix A, which shows the closest sensitive receptors to the Facility are to the east along the B5070.

*Table 1: Selected representative receptor locations*

Ref.	Receptor reference	Land use e.g. house, school, hospital, commercial	Approximate distance to site boundary (m)	Direction from site (north, south, east, west)
R1	Linden Avenue	Residential	440	NE
R2	Wern	Residential	60	NE
R3	George Street	Residential	75	NE
R4	Maes-Y-Waun	Residential	40	E
R5	Shepherd's Lane	Residential	350	SE
R6	Station Avenue	Residential	330	S
R7	Ceod-Y-Canal Wood (Canal Wood Industrial Estate)	Ecological (LWS) Industrial	<50	SW
R8	Llywn-Y-Cil Road	Residential	430	SW
R9	Opposite Castle Gates	Ecological (SSSI)	500	NW
R10	Chirk Bank	Residential	1070	S
R11	Crogen	Residential	350	NE
R12	Telford Rise	Residential	590	S

## 4 Noise management

### 4.1 Responsibility for implementation of this plan

This NMP is working document. Initially, it is intended to demonstrate that the control of noise has been considered as part of the day to day operation of the Facility. This NMP references procedures which are contained within the EMS. It is not intended to replace these procedures but sufficient information has been provided to describe the principles.

Kronospan has responsibility for the implementation, reviewing and updating of the NMP. Reviews are undertaken on an annual basis, whenever new equipment or mitigation measures are implemented at the Facility, or following the receipt of complaints.

Kronospan aims to ensure that any persons performing tasks for it, or on its behalf, which have the potential to cause significant environmental impact, are competent on the basis of appropriate education and training or experience. Key management roles at the Facility include the Environment Health and Safety (EHS) Department, the Departmental Managers and the Operations Director. The EHS Department Management are responsible for ensuring that procedures are in place for noise management on site and responsible for responding to and investigating off-site environmental noise complaints. The Departmental Managers are responsible for ensuring that noise control measures are in place in their department, and for investigating any justified environmental complaints that have been caused by noise originating in their department and putting in place mitigation measures as appropriate. The managers are responsible for ensuring that all employees are fully trained on noise control, with all employees at the Facility responsible for following the company procedures.

Systems to assess competence and provide training for relevant staff is provided. Skills, competencies and training requirements for staff (such as understanding and implementation of the NMP) are documented and recorded as part of the internal EMS at the Facility. The EMS contains an archiving procedure to ensure all training (including refresher training) is recorded and all associated records are retained.

The Facility is split into the following departments, for which the Departmental Manager is responsible.

1. General Site
2. Logyard
3. Gas Energy Generation
4. Paper Impregnation
5. Particleboard
6. Biomass Boilers
7. Finishing Line/ T&G
8. Formalin
9. MDF
10. OSB
11. MF
12. Resin
13. Sawmill
14. Kronoplus

Where noise is generated by contractors working at the Facility, Kronospan acknowledges responsibility for ensuring that noise impacts are minimised. The EMS includes procedures for the control of contracts. This includes providing contractors details of the health and safety risks on site and the procedures which need to be complied with. This includes procedures to minimise noise impacts. Contractors are required to confirm that they will adhere to the site rules and pass the site induction prior to working on site. Where a contractor has been found not to comply with the site rules, fines can be issued and repeat offenders refused access to the site.

## 4.2 Control of noise

The key sources of noise emissions have been listed in section 3.3. Control of the impact of noise involves the treatment of the noise at source (e.g. via enclosing, silencing, screening or method of operation, replacement & maintenance).

The overall approach taken to managing noise includes the following steps:

- Identify all noise sources within the site by conducting a noise survey – this is currently ongoing, and the results will be fed back into this NMP.
- Assess noise levels by measurement of the identified noise sources – this is currently ongoing, and the results will be fed back into this management plan.
- Determine the regulatory requirements for the site.
- Determine the most significant noise sources on-site and at sensitive receptors off-site – this is currently ongoing, and the results will be fed back into this management plan.
- Apply a noise reduction programme which includes the use of noise mapping and propagation, evaluation of most cost-effective measures and their implementation – this is currently ongoing, and the results will be fed back into this management plan.
- Consider techniques for the reduction of noise at source and the site level (e.g. enclosing noisy plant, soundproofing buildings, use of silencers, keeping doors closed, regular maintenance, screening methods, limiting outdoor night-time activities where practicable and limiting speed and minimising fall height for mobile plant).
- Monitoring of noise levels to ensure they are within regulatory limits at sensitive receptors.
- Review and update the noise management plan to ensure it remains effective and up-to-date with current regulations and technology.

The tables within section 4.3.2 and 4.3.2 provides a more detailed description and consideration of the general mitigation/control measures that are in place at the Facility to prevent, reduce and/or mitigate against noise emissions. These tables are reviewed by management as part of periodic reviews of the NMP. This ensures that sources and receptors of noise are regularly examined, so that there are no 'gaps' in abating the noise at the Facility, and as part of Kronospan's aim for continual improvement of management systems.

### 4.2.1 Permit requirements

The Facility has an EP to operate. Section 3.2 of the EP includes conditions regarding the emissions of substances not controlled by emission limits, this condition states:

"Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions

management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.”

“Pollution”, other than in relation to a water discharge activity or groundwater activity, is defined in the Environmental Permitting Regulations as:

*“Any emission as a result of human activity which may-*

- 1. Be harmful to human health or the quality of the environment;*
- 2. Cause offence to a human sense;*
- 3. Result in damage to material or property; or*
- 4. Impair or interfere with the amenities or other legitimate uses of the environment.”*

Therefore, the EP controls emissions from all activities on-site. The measures should not only prevent harm to human health but also damage to property which includes noise nuisance. As such, to comply with the requirements of the EP, there are a number of noise emissions control measures in place at the Facility, including both physical measures and management techniques. These are detailed further in the tables within section 4.3.2 and 4.3.2.

#### 4.2.2 Planning requirements

The site includes a number of different planning consents which have been implemented over the years. A review of the planning consents and any noise requirements has been carried out. The following details the planning consents for the site which include conditions relating to noise and the details of the requirements.

##### **P/2022/0765 – Erection of 2 raw material silos, extension to existing chip preparation building and erection of 3 silos:**

*“Condition 4 - The rating level of any noise generated by reason of this development shall not exceed the pre-existing background level at any time. The noise levels shall be determined at nearby noise sensitive premises, and measurements and assessment shall be made in accordance with BS4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound.”*

##### **P/2022/0615 - Engineering Stores and Apprentice Workshop:**

*“Condition 7 – The rating level of any noise generated by reason of this development shall not exceed the pre-existing background level at any time. The noise levels shall be determined at nearby noise sensitive premises, and measurements and assessment shall be made in accordance with BS4142:2014 Method for rating and assessing industrial and commercial sound.*

*Condition 8 – The development shall be carried out in strict accordance with the noise mitigation methods detailed in Chapter 6 of report ref: 'Noise Impact Assessment, Engineering Stores, At, Kronospan Manufacturing Facility, Off Holyhead Road, Chirk, Wrexham' Ref: R22.0305/DRK, Dated 28th March 2022, prepared by Noise & Vibration Consultants Ltd, hereby approved.”*

The noise mitigation methods detailed in Chapter 6 consist of the following:

- Cladding on the engineering stores building with a Rw value of 37dB or greater.
- Noise break-out via roof ridge vents (if required) to have a similar acoustic performance of the cladding.
- No ventilation louvres allowed in walls unless acoustically treated to similar performance as the cladding.

- Roller shutter doors to the stores building to be closed during night-time period unless to temporarily allow access for HGVs or mobile plant or in an emergency.
- Doors into the easter and wester facade to be closed during any extensive use of power tools within the building unless temporarily for vehicle access or emergency.
- All other doors into the building via standard personnel doors.
- Design of mobile plant reversing alarms should not contain tonal character (i.e. should be of the broadband noise reversing alarms) and are not perceptible at the nearest sensitive receptor.

**P/2022/0336 – Covered Loading Yard:**

“Condition 3 - The rating level of any noise generated by reason of this development shall not exceed the pre-existing background level at any time. The noise levels shall be determined at nearby noise sensitive premises, and measurements and assessment shall be made in accordance with BS4142:2014 Method for rating and assessing industrial and commercial sound.”

**P/2018/0551 - Planning application for the development of an orientated strand board production facility:**

*“Condition 5. The development hereby approved shall not be brought into use until the noise mitigation measures as set in section 6 of the NVC Noise Impact Assessment dated 12 June 2018 have been implemented in full.”*

The noise mitigation methods detailed in section 6 of the Noise Impact Assessment consist of the following:

- Cladding on the OSB manufacturing building extension to have a  $R_w$  value of 32dB or greater
- Noise break-out via roof ridge vents (if required) to have a similar acoustic performance of the cladding.
- Cladding on the new building extension that has a  $R_w$  value of 35dB or greater
- All external conveyors to be covered.
- The design of the plant to ensure that there is no tonal or impulsive noise characteristics that are perceptible at the nearest sensitive receptors.

**P/2017/0699 - Development of a log delivery and transfer system and building to house a replacement wood chipping and flaking system and demolition of existing debarking and chipping facilities:**

*“Condition 2 - The noise mitigation measures detailed in Section 6 of the NVC Noise Report shall be fully implemented.”*

The noise mitigation methods detailed in section 6 of the NVC Noise Report consist of the following:

- Cladding on the chipper and flaker building extension to have a  $R_w$  value of 24dB or greater such that the noise level at 1m from the building do not exceed approximately 80dB(A).
- Noise break-out via any proposed door openings, ventilation louvres, cowls or ducting to be fitted with suitable doors or silencers to reduce noise break-out to a similar level.
- The design of the plant to ensure that there is no tonal or impulsive noise characteristics that are perceptible at the nearest sensitive receptors.

**P/2017/0700 - Development of a raw board store:**

“Condition 3 - The development hereby approved shall not be brought into use until the noise mitigation measures as set in section 6 of the NVC Noise Impact Assessment dated 30/05/2017 has been carried out.”

The noise mitigation methods detailed in section 6 of the NVC Noise Impact Assessment consist of the following:

- Cladding on the raw board storage facility building extension to have a  $R_w$  value of 24dB or greater such that the noise level at 1m from the building do not exceed approximately 60dB(A).
- Noise break-out via any proposed door openings, ventilation louvres, cowls or ducting to be fitted with suitable doors or silencers to reduce noise break-out to a similar level.
- The design of the plant to ensure that there is no tonal or impulsive noise characteristics that are perceptible at the nearest sensitive receptors.

**P/2016/0442 - MDF wash water pre-heater:**

*“Condition 2 - One of the noise mitigation options detailed in section 5 (mitigation) of the approved Noise Impact Assessment, complied by Noise and Vibration Consultants Ltd and dated 21st July 2016 shall be implemented in conjunction with the development hereby approved and retained thereafter.”*

Option 2 of the noise mitigation options detailed in section 5 of the Noise Impact Assessment has been implemented namely the noise level at the support frame edge of the sides of top of the plant should be reduced to a noise level that is below 80dB LAeq.

**P/2006/0305 - Sawdust silo**

*“Condition 4 – Before any plant and/or machinery associated with the saw dust silo is first used on the premises, it shall be suitably acoustically treated/ insulated and mounted to ensure that the rating level of any noise generated by reason of this development shall not exceed pre-existing background level. The noise levels shall be determined at the nearest noise sensitive premises. Measurements and assessment shall be made in accordance with BS 4142 1997 "Method of Rating Industrial Noise Affecting Mixed Residential and Industrial Areas". The assessment must be carried out by a competent person prior to the commencement of development. The noise levels shall be submitted to and approved in writing by the Local Planning Authority prior to the commencement of the development.”*

### 4.2.3 Appropriate measures and best available techniques (BAT)

In respect of the EU BAT 'Reference Document for the Production of Wood-based Panels' and the associated BAT Conclusions for the Kronospan site, the response below is provided in addition to the detail within the Noise Register in Appendix D.

BAT 4. In order to prevent or, where that is not practicable, to reduce noise and vibrations, BAT is to use one or a combination of the techniques given below (prevention / point source reduction / site level reduction):

- (a) Strategic planning of the plant layout in order to accommodate the noisiest operations, e.g. so that on-site buildings act as insulation (generally applicable in new plants – layout of a site may limit applicability on existing plants);**

When installing new plant, noise is taken into consideration and plant is designed in order to minimise noise off-site. Noise surveys are carried out as part of planning applications prior to installation to assess the impact of any new plant to the surrounding areas.

- (b) Applying a noise reduction programme which includes noise source mapping, determination of off-site receptors, modelling of noise propagation and evaluation of the most cost-effective measures and their implementation;**

Various noise surveys have been carried out over the years, in 2012 an extensive survey was carried out by RSK to identify noise sources on-site and sensitive receptors off-site. This report was issued to the regulator for consideration and as a result the most significant sources that contributed to off-site noise were examined with a view to noise reduction measures. The hierarchy of control was applied. In some cases hardware was required in the form of silencers, acoustic booths / panelling, or lagging. These improvements were documented by the regulator in the environmental permit. On completion of the high-priority sources, additional work was agreed to further reduce the site impact.

The site is currently undergoing major plant improvements, part of which is to reduce the noise impact both on and off-site. Individual projects, as part of the planning application process, require a noise assessment. In most cases, and where possible, a standard of 75 dbA at 1 m from the exterior of any building is applied. As site improvements and construction projects come to an end, a full noise impact assessment will be carried out to assess the improvements made and establish a new noise reduction programme. This is currently underway, and the result of this will feed into this Management Plan.

- (c) Performing regular noise surveys with monitoring of noise levels outside the site boundaries;**

Qualitative noise monitoring is carried out at least twice per month at various locations within the local area. These points take into account sensitive receptors as identified during previous extensive noise surveys, being located where noise from the plant has the potential to cause a nuisance (e.g. areas with a large residential population, or sensitive receptors e.g. schools), or where previous complaints have been received.

Currently there are twelve locations that are assessed each month, however additional areas may be included following any complaints or to ensure that any issues found have been resolved effectively. Monitoring takes place at random times throughout the day as well as at night / early morning / weekends. Noise levels are also measured during surveys carried out by third parties.

Procedure KC/EHS/PRO/017 describes the monitoring process and outcomes in more detail.

- (d) Enclosing noisy equipment in housing or by encapsulation and by soundproofing buildings;**

For plant and equipment outside of buildings, the aim is to reduce noise levels to as reasonably practicable. This is carried out by careful selection of plant and equipment, for example a band conveyor may be chosen as opposed to a bucket conveyor. Plant that is identified by a noise survey as having a high noise impact, may be enclosed via acoustic booths or panelling as part of the noise reduction programme.

**(e) Decoupling individual equipment to pre-empt and limit propagation of vibrations and resonance noise;**

Monthly condition monitoring is carried out on large plant assets (e.g. ID fans) to inform planned preventative maintenance work and minimise noise emitted from motors, fans or blowers. Large plant assets are also fitted with continuous vibration monitoring that causes plant shutdown should vibrational set points be exceeded. Details of the plant fitted with continuous vibration monitoring is contained in the Noise Register.

**(f) Point source insulation using silencer, damping, attenuators on noise sources, e.g. fans, acoustic vents, mufflers, and acoustic enclosures of filters;**

Equipment that produces a high level of noise is generally fitted with noise reduction devices to lessen any off-site impact. Careful consideration is taken in selecting the correct device for the plant. For example, as detailed in the EP improvement programme, the Preproduction Dryer 2 Belt Drive was fitted with acoustic screening while the Formalin Plant Turbo Compressor Discharge Pipe was fitted with a silencer.

**(g) Keeping gates and doors closed at all times when not in use. Minimising the fall height when unloading roundwood;**

Most factory doors are self-closing to reduce noise impact. Where this is not the case, employees are reminded to ensure that doors are closed from 7pm until 7am as a minimum. There are notices on doors to remind on site personnel. Any complaints arising from local residents due to noise from open doorways are responded to immediately and any remedial action taken.

At all times, and as part of routine operations, the fall height when unloading roundwood is minimised from both the rail off-loading facility and road deliveries.

**(h) Reducing noise from traffic by limiting the speed of internal traffic and for trucks entering the site;**

The on-site speed limit is set at 10 mph. Speed limiters are installed on certain vehicles, all vehicles entering the site must obey local signage. A speed gun is used occasionally in various areas of the site as a check on compliance, and near miss reporting is used as a tool to identify any vehicles that may be exceeding the speed limits. Any issues with external hauliers would be dealt with by the Despatch / Timber Buying Departments contacting the specific haulier with complaints.

**(i) Limiting outdoor activities during the night;**

Outdoor activities that may have an impact off-site are prohibited between the hours of 7pm and 7am. This is mainly the use of the main site skips which are located on the eastern boundary of the site, parallel with the main road through the local neighbourhood.

**(j) Regular maintenance of all equipment;**



Equipment on site is maintained following a proactive maintenance schedule the frequency of maintenance of plant is set out within the department aspect register which forms part of the EMS.

**(k) Using noise protection walls, natural barriers or embankments to screen noise sources.**

Along the length of the eastern boundary of the site with Holyhead Road is a large tree-lined embankment which acts as a screen to reflect the noise on-site.

A further assessment of BAT is provided within the Noise Register.

### 4.3 Noise Risk Assessment and mitigation

Table 2 to Table 14 provide detail of each of the noise sources within each department and the potential impact they could have on local receptors. The tables include measures used to manage the risk and the overall perceived risk. The perceived overall risk is 'insignificant', 'not significant' or 'significant' in line with the EA's H1 guidance.

Table 15 provides further general measures which are practiced across site.

### 4.3.1 Department specific source receptor pathway routes and risk assessment

Table 2: Environmental Risk Assessment – General site

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Emptying of tipper skips into main site skips	All receptors	Airborne noise	Prohibited during the hours of 7pm and 7am. CCTV in operation in the area to identify any non-compliance.	Low	Annoyance and resident complaints	Not significant
Use of compressed air	All receptors	Airborne noise	Compressed air systems are maintained monthly under contract. Annual leak survey also conducted. Where possible compressed airlines are kept inside to reduce condensate within the pipework.	Very Low	Annoyance and resident complaints	Insignificant
Use of mobile plant	All receptors.	Airborne noise	Pre-use checks and regular servicing of FLT's identify issues that may give rise to additional noise. Speed limiters are installed on plants and a site speed limit enforced (10mph). Electric FLT's are currently being phased in across site.	Low	Annoyance and resident complaints	Not significant

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Blowers	All receptors.	Airborne noise	All blowers are housed within enclosures.	Very Low	Annoyance and resident complaints	Insignificant
Mechanical conveying systems	All receptors.	Airborne noise	Planned preventative maintenance for all conveying systems that includes bearing checks, belt tracking etc. The frequency is dependant on the OEM recommendation and site experience.	Very Low	Annoyance and resident complaints	Insignificant
Deliveries to site (not haulage)	All receptors.	Airborne noise	Deliveries typically occur outside of night-time hours in LGVs or smaller vehicles.	Very Low	Annoyance and resident complaints	Insignificant
Contractors	All receptors.	Airborne noise	Contractors are required to pass the site induction before working on site. This induction includes environmental considerations. Contractors are supervised and their Kronospan contact is responsible for their activities whilst on site.	Low	Annoyance and resident complaints	Not significant

Table 3: Source-Pathway-Receptor routes – Logyard

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Increased road traffic noise due to delivery of logs/material by road, including vehicle horns	All receptors and receptors along roads routes	Airborne noise	The majority of deliveries take place during Monday-Friday, daylight hours. Increase of rail deliveries to minimise road traffic / noise. Speed limit of 10 mph and no idling policy in place as per EMS doc KC/LOGI/WI/0018.	Low	Annoyance and resident complaints	Not significant
Increased rail noise due to delivery of logs by rail	All receptors and receptors along rail routes	Airborne noise	Rail planning/scheduling in place. Deliveries arrive at 19:26 and 23:47, as required. Rail siding is located on the western boundary of the site, away from the majority of receptors.	Low	Annoyance and resident complaints	Not significant
Unloading of logs and material	All receptors. Receptors to the north east of the Facility in Chirk at higher risk due to proximity and predominant wind direction.	Airborne noise	East Road Logyard now removed (finished good warehouse installed 2023). Use of modern movement machines within current EU specifications and guidelines. White noise reverse alarms on Logyard vehicles.	Low	Annoyance and resident complaints	Not significant

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
			Drop heights are minimised as per site risk assessment / method statement LY-RA-021.			
Operation of the Chipper	All receptors. Receptors to the north east of the Facility in Chirk at higher risk due to proximity and predominant wind direction.	Airborne noise	Acoustic panelling installed on the log infed deck to screen noise to the north and east.  Debarking drum is contained within an insulated building.  Chipper operations take place within a building.  Roller shutter doors are kept close unless access is required.  Automatic lubrication systems installed throughout the Chipper.	Low	Annoyance and resident complaints	Not significant
Mobile shredding	All receptors. Receptors to the north east of the Facility in Chirk at higher risk due to proximity and predominant wind direction.	Airborne noise	Shredding activities take place on the western boundary of the site within a 3-sided compound.  Shredding operations take place intermittently, during daylight hours only.	Low	Annoyance and resident complaints	Not significant

Table 4: Source-Pathway-Receptor routes – Gas Energy Generation

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Operation of gas engines 1, 2 & 3, gas turbines 1 & 2, and boilers K1, K5 & K6	All receptors	Airborne noise	<p>Gas generation plants are enclosed within buildings. All doors close automatically to the gas engines, in line with BAT.</p> <p>The buildings are positioned in areas away from the site boundary and surrounded by other high-rise buildings.</p> <p>Emissions are utilised elsewhere so risk of drone noise from stack is removed.</p>	Low	Annoyance and resident complaints	Not significant

Table 5: Source-Pathway-Receptor routes – Paper impregnation

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Cleaning operations – dry ice equipment / jackhammers	All receptors	Airborne noise	Cleaning operations are intermittent and carried out during daytime. All processes are conducted within the plant building. Equipment is maintained.	Low	Annoyance and resident complaints	Not significant

Table 6: Source-Pathway-Receptor routes – Particleboard

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Extraction system	All receptors	Airborne noise	Weekly inspections are in place, planned preventative maintenance of the filters takes place. LEV testing regime in place.	Low	Annoyance and resident complaints	Not significant
Sorting and cleaning of recycled timber	All receptors	Airborne noise	Crushing operations are contained within plant buildings. Plant is located on ground level in the centre of the site. Planned preventative maintenance schedules are in place.	Low	Annoyance and resident complaints	Not significant
Air grader fans	All receptors	Airborne noise	Contained within enclosure that is lagged. Condition monitoring carried out monthly. Located at ground level on the western boundary of the site, away from the majority of receptors.	Low	Annoyance and resident complaints	Not significant
Dryer 4 ID fan	All receptors	Airborne noise	Contained within enclosure that is lagged. Continuous vibration monitoring installed, linked to control system to	Low	Annoyance and resident complaints	Not significant



Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
			<p>shut down plant if vibration exceeds set parameters.</p> <p>Condition monitoring carried out monthly.</p> <p>Located at ground level on the western boundary of the site, away from the majority of receptors.</p>			
Dyer 4 inlet seal	All receptors	Airborne noise	<p>Inlet seal is inspected during monthly shutdowns and preventative maintenance / replacement carried out as required.</p> <p>Located to the western boundary of the site, away from the majority of receptors.</p>	Low	Annoyance and resident complaints	Not significant
Knife ring flakers	All receptors	Airborne noise	<p>Contained within plant building.</p> <p>Located at ground level on the western boundary of the site, away from the majority of receptors.</p>	Low	Annoyance and resident complaints	Not significant
Conidur mills	All receptors	Airborne noise	<p>Located at ground level on the western boundary of the site, away from the majority of receptors.</p> <p>Wear parts are inspected and replaced on a monthly basis.</p>	Low	Annoyance and resident complaints	Not significant

Table 7: Source-Pathway-Receptor routes – Biomass boilers

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Transfer of material from Logyard to K8 boiler	All receptors	Airborne noise	Material conveyed via tubular conveyor. Planned maintenance in place. Weekly inspections of conveying systems.	Low	Annoyance and resident complaints	Not significant
Transfer of material from Logyard to K7 boiler	All receptors	Airborne noise	Boiler fuel loaded onto walking floor by either trailer (twice per 12 hour shift) or loading shovel (as required).	Low	Annoyance and resident complaints	Not significant
ID fans and auxiliary fans	All receptors	Airborne noise	Continuous vibration monitoring installed on main assets, linked to control system to shut down plant if vibration exceeds set parameters. Monthly condition monitoring in place.	Low	Annoyance and resident complaints	Not significant
Operation of the board breaker	All receptors	Airborne noise	Operated intermittently, depending on boiler fuel quality. Located on ground level in the centre of the site.	Low	Annoyance and resident complaints	Not significant

Table 8: Source-Pathway-Receptor routes – Finishing line/T&amp;G

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Sanding and cutting of boards	All receptors	Airborne noise	All operations are contained within the plant buildings. Centre cut saw enclosed within acoustic booth. External walls clad with insulation to contain noise. Ensure all doors are closed at night time. Continuous condition monitoring (temperatures) are in place to indicate correct functioning.	Very Low	Annoyance and resident complaints	Insignificant
T&G profiling	All receptors	Airborne noise	All processes are contained within the plant building. The cutters and hogs are positioned within an acoustic booth. T&G line is currently operated Monday – Thursday only.	Very Low	Annoyance and resident complaints	Insignificant
Extraction systems	All receptors	Airborne noise	Weekly inspections are in place, planned preventative maintenance of the filters takes place. LEV testing regime in place.	Low	Annoyance and resident complaints	Not significant

Table 9: Source-Pathway-Receptor routes – Formalin

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Process gas air inlet / blowers and steam production	All receptors	Airborne noise	Inlet silencers are installed to the fresh air in-feed of both plants. Blowers are located within plant buildings. Steam produced by the plant is redirected to MDF (approximately 90% of the time) to reduce steam venting.	Low	Annoyance and resident complaints	Not significant
Evaporative cooling towers	All receptors	Airborne noise	Silencers fitted to air inlets on all 6 cooling towers.	Very Low	Annoyance and resident complaints	Insignificant
Methanol infeed to plant	All receptors	Airborne noise	Change of methanol feed pumps, lagging to be installed on pipework to reduce noise reverberation.	Low	Annoyance and resident complaints	Not significant

Table 10: Source-Pathway-Receptor routes – MDF

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Extraction system	All receptors	Airborne noise	Weekly inspections are in place, planned preventative maintenance of the filters takes place. LEV testing regime in place.	Low	Annoyance and resident complaints	Not significant
MDF 1 / MDF 2 cyclones	All receptors	Airborne noise	Silencers are fitted on the 4 MDF 2 cyclones.	Low	Annoyance and resident complaints	Not significant
Dryer fans	All receptors	Airborne noise	The fans are located on the ground floor toward the western boundary of the site and surrounded by high rise buildings. Fans are enclosed and lagged. Continuous vibration monitoring installed, linked to control system to shut down plant if vibration exceeds set parameters. Monthly condition monitoring in place.	Low	Annoyance and resident complaints	Not significant
MDF board breakers	All receptors	Airborne noise	Both MDF 1 and MDF 2 board breakers are situation within the plant building within soundproof enclosures.	Low	Annoyance and resident complaints	Not significant

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
			Operation of the board breakers is intermittent, dependant on board quality.			

Table 11: Source-Pathway-Receptor routes – OSB

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Extraction system	All receptors	Airborne noise	Weekly inspections will be extended to include new units, planned preventative maintenance of the filters takes place. LEV testing regime will be extended to include new units.	Low	Annoyance and resident complaints	Not significant
WESP for abatement of emissions from OSB driers	All receptors	Airborne noise		Low	Annoyance and resident complaints	Not significant
Dryer fans	All receptors	Airborne noise	The fans will be located on the ground floor toward the western boundary of the site and surrounded by high rise buildings. Fans will be enclosed and lagged. Continuous vibration monitoring will be installed, linked to control system to shut down plant if vibration exceeds set parameters. Monthly condition monitoring will be extended to include this equipment.	Low	Annoyance and resident complaints	Not significant

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
OSB board breakers	All receptors	Airborne noise	OSB board breakers will be located within the plant building within soundproof enclosures. Operation of the board breakers will be intermittent, dependant on board quality.	Low	Annoyance and resident complaints	Not significant



Table 12: Source-Pathway-Receptor routes – MF

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Dust extraction system	All receptors	Airborne noise	Weekly inspections are in place, planned preventative maintenance of the filters takes place. LEV testing regime in place.	Low	Annoyance and resident complaints	Not significant
Rawboard separation	All receptors	Airborne noise	Process undertaken within plant building, noise reduction nozzles are fitted where possible.	Very Low	Annoyance and resident complaints	Insignificant
General ventilation for the press halls	All receptors	Airborne noise	Two forced air ventilation air fans on the roof of the melamine facing building are programmed to only operate between the hours of 07:00 and 19:00.	Low	Annoyance and resident complaints	Not significant

Table 13: Source-Pathway-Receptor routes – Sawmill

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Unloading and grading of logs	Receptors and receptors along roads routes	Airborne noise	The majority of deliveries and grading take place during Monday-Friday, daylight hours. Increase of rail deliveries to minimise road traffic / noise. Speed limit and no idling policy.	Low	Annoyance and resident complaints	Not significant
Processing of round wood	receptors and receptors along roads routes	Airborne noise	All doors kept closed. All machines are maintained (greased and lubricated) and wear parts replaced regularly.	Very Low	Annoyance and resident complaints	Insignificant

Table 14: Source-Pathway-Receptor routes – Kronoplus

Source of noise impact			Managing the risk	Assessing the risk		
Source	Receptor	Pathway	Risk management	Possibility of exposure	Consequence	What is the overall risk? (balance of probability and consequence)
Dust extraction system	All receptors and receptors along roads routes	Airborne noise	Weekly inspections are in place, planned preventative maintenance of the filters takes place. LEV testing regime in place.	Low	Annoyance and resident complaints	Not significant
Cutting and profiling of boards	All receptors and receptors along roads routes	Airborne noise	All operations take place within the plant building. All profiling machines and saws are shrouded / enclosed. Homag profiling machines are enclosed and lagged. Roller shutter doors automatically close.	Very Low	Annoyance and resident complaints	Insignificant

### 4.3.2 General noise control measures

Table 15: General measures used on site to control noise emissions

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
<b>Preventative measures</b>			
Time restrictions	In accordance with BAT, outdoor activities that may have an impact off-site are prohibited between the hours of 7pm and 7am. This includes all routine maintenance activities. Where unplanned activities are required careful consideration of when this can occur is made. It is unlikely that activities outside would be carried out during the night due to safety concerns.	Implemented as part of BAT.	N/A – this is a continuous measure.
Enclosure within a building where possible.	This creates a solid barrier between the source of noise and receptors. This is considered to be the most effective method of control (i.e. control at source). In accordance with BAT, most factory doors are self-closing to reduce noise impact. Where this is not the case, doors are closed from 7pm until 7am as a minimum. Signs are on doors to ensure that this is carried out and checks are made as part of the site audit programme.	Implemented where possible for processes and plant operation.	N/A – this is a continuous measure.
Implementation of a speed limit for vehicles at the site, a 'no idling' policy,	Reducing vehicle movements and idling should reduce noise emissions from	This is implemented at the site as part of good practice. The speed limits are clearly established and signposted	N/A – this is a continuous measure.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
and minimisation of vehicle movements at the site.	vehicles. Enforcement of a speed limit of 10 mph is in place.	around the site and a speed gun is used to check vehicle speeds. The no idling policy is identified in the site management system. The site layout (including internal roads) has been designed to minimise unnecessary vehicle movements.	
Minimising drop heights	Minimising the height at which materials are offloaded will help reduce impact noise.	This is implemented at the site as part of good practice. For example, at the exit of conveyors from process equipment, and from loading shovels. Delivery drivers unloading their own roundwood are requested to minimise drop heights. All other roundwood deliveries, including the train, are offloaded by Kronospan personnel.	N/A – this is a continuous measure.
Use of enclosed conveyors	This reduces noise radiated from transfer systems at source within the site.	This is implemented at the site as part of good practice.	N/A – this is a continuous measure.
Good housekeeping	A consistent, regular housekeeping regime supported by management ensures the site is regularly checked for any unusual or increased noise issues which can then be investigated and remedied.	It can be confirmed that good housekeeping is employed at the site, with a regime set out within the documented management systems. Regular noise monitoring is undertaken, along with audible inspections by staff.	Housekeeping is undertaken in accordance with a documented regime, with any identified noise issues identified, measured and action plan implemented to mitigate.

Abatement Measure	Description / Effect	Overall consideration and implementation	Trigger for implementation
Installation of earth mound screens and walls	These provide screening from noise in the direction of sensitive receptors	This is implemented at the site as part of good practice. For example, at the eastern site boundary.	N/A – this is a continuous measure
Replacement of older plant with new	Selection of new plant with lower noise characteristics assists in bringing the overall noise levels down. Limiting noise levels from plant and associated buildings provides further control of noise.	This is implemented at the site as part of good practice when new plant can be introduced	N/A – this is an ongoing measure
Regular noise monitoring and observation of audible noise	This allows for timely mitigation / remediation once any noise issues have been identified.	Regular noise monitoring are undertaken as part of documented procedures at the site. Noise survey, assessment and subsequent actions are recorded in a log book, with mitigation measures implemented if necessary.	Inspections and noise surveys are undertaken on a periodic basis in accordance with documented procedures.
Regular preventative maintenance	Regular preventative maintenance can help to maintain the integrity of plant and equipment, and as such reduce the generation of noise.	Regular preventative maintenance is undertaken for all plant and equipment (including conveyors, processing equipment, mobile plant).	Preventative maintenance is undertaken on a periodic basis in accordance with documented procedures.
Control of contractors	Kronospan are responsible for ensuring that contractors adhere to noise restrictions and general low noise practice whilst on site.	All contractors are required to pass the site induction prior to entering site. The Kronospan Supervisor is responsible for ensuring contractors adhere to site rules. Contractor performance is evaluated, including environmental considerations (such as involvement in an incident / near miss).	Upon unacceptable noise from contractors (e.g. delivery driver horns)



### 4.3.3 Specific noise prevention equipment

The items of equipment with noise prevention equipment are listed within the site Noise Register. The Noise Register will be updated regularly to ensure that all noise sources are identified and included within the ongoing assessment process that drives the continual improvement programme for the site. Noise prevention equipment is also listed within the departmental aspect registers.

### 4.3.4 Noise Risk Assessment Summary

The risk assessment and management measures have shown that the perceived risk of noise from the Facility is 'not significant' or 'insignificant'. Should the monitoring (see section 5) or complaints procedure (see section 6) prove otherwise, appropriate action will be taken to identify and stop the source of the noise. Following this, the risk assessment and NMP will be reviewed and updated accordingly to ensure its effectiveness.

## 4.4 Abnormal operations

The above sections consider normal operations. It is possible that abnormal operations (equipment failure, weather, emergencies), such as those listed in Table 16 could increase the risk of noise impacts. Management for the following abnormal situations is as follows in Table 17

Table 16: Abnormal Events and Response Measures

Event	Location	Likely Effect	Response Measures	Timescales for Response
Loss of electrical supply	Site-wide	Back-up diesel generators start-up to allow safe plant shutdown	Back-up generators and pumps are located in enclosed areas	Immediate, for length of outage. Reliance on diesel generation for long periods is not economically viable
Prolonged power outage	Site-wide	Emergency diesel generators brought onto site	Suitable location selected for generators on a case-by-case basis. Off-site monitoring to ensure generators do not increase noise levels	Immediate, for length of outage. Reliance on diesel generation for long periods is not economically viable
Fire / emergency	Site-wide	Prolonged sounding of the site fire / COMAH alarms	Alarms are sounded until the Incident Commander is satisfied that the situation is safe	-
Emergency venting of process emissions		Reverberation through the emergency stacks may change the noise profile	Certain instances may require the use of emergency stacks for a short duration to enable safe shutdown of processes however the air flow expected is no	-



Event	Location	Likely Effect	Response Measures	Timescales for Response
			greater than under normal operations	
Emergency venting of pressure through PRVs	Site steam system	Steam release through PRV for short duration	-	-
Prolonged periods of heavy rain	Site-wide	Deployment of flood control equipment, e.g. pumps / industrial tankers	Off-site monitoring will commence if equipment emanating noise is required to run overnight	Nightly throughout duration
Equipment failure	Site-wide	Potential for short duration impulse noise to be generated	Process stopped for safety reasons	Immediate

## 4.5 Management of change

When equipment is to be replaced a decision is made as to whether to replace like-for-like or whether different equipment is more appropriate. As part of this decision-making process consideration is made of noise impacts of the equipment and whether an alternative option could be used which would reduce off-site noise impacts.

## 5 Monitoring

### 5.1 ISO accredited EMS

An EMS is in operation which includes a range of monitoring and recording procedures. This NMP forms part of the EMS and is reviewed and updated accordingly. The EMS includes procedures for managing external complaints. Further detail on the complaints procedures at the Facility are presented within section 6.

### 5.2 Noise monitoring

An EMS is in operation which includes a range of monitoring and recording procedures. This NMP forms part of the EMS and is reviewed and updated accordingly.

Noise monitoring is conducted by the EHS Team as per procedure KC/EHS/PRO/017. This occurs twice per month, as a minimum with one survey being carried out during normal working hours and one during late evening/early morning (i.e. after 2200 hours and before 0600 hours). The procedure describes the monitoring techniques and process. The purpose of the monitoring is to ensure that noise impacts at local receptors does not result in unacceptable noise impacts. Following a noise complaint, the frequency of noise monitoring will be increased.

Monitoring is currently undertaken at 12 monitoring positions around the site at selected representative receptor locations periodically. The results are inputted into the Safety Culture app. A copy of the inputs are provided in Appendix C.

Observations and monitoring at these locations are undertaken using appropriate and calibrated noise monitoring equipment and monitoring regime to include the following:

- a) Spot roaming measurement position monitoring at positions 1 to 12 as shown in Table 1 and Figure 2 of Appendix A. .
- b) Monitoring should **not** be undertaken in the following weather conditions:
  - when wind speeds are likely to be greater than 3 metres/second or
  - when rainfall is expected or
  - when temperatures are likely to be below zero degrees.
- c) Monitoring at 1.5m above ground level with microphone fitted with wind ball. Step away from the meter when measuring by at least 1m.
- d) During the daytime and night-time survey subjective observations to be made during monitoring period of any audible noise to determine whether there is any perceptible noise character as described in BS4142: 2014+A1:2019 (i.e. tonality, impulsivity and intermittency character).
- e) Monitoring equipment to be precision noise analysers with Type 1 microphones suitable for monitoring one-third octave band centre frequencies, LAeq, LA90 and LMax measurement indices. Fast response setting required. The sound meter must meet BS EN 61672-1:2003 standard.
- f) Noise readings are recorded are 1 minute LAeq. Monitoring operatives stay in a location for 15 minutes to gather a 1 minute LAeq which is representative of the noise perceived within the 15 minute monitoring period.
- g) Noise meters and microphone to be calibrated within 2 years of survey date and calibrator within 12 months of survey date. Microphones calibrated prior to and after each survey to check on calibration and any calibration drift recorded. Calibration certificates should be provided

for the instrumentation from a suitable test laboratory to demonstrate that its measurements are traceable to national or international standards.

- h) Determine information relative to survey conditions, subjective observations and equipment etc., as appropriate and defined in BS4142: 2014+A1:2019 section 12.0.
- i) Video recordings via a mobile phone are taken of any distinct noise if appropriate.

The department managers undertake daily inspections of their areas, to check on noise control features and procedures. This is then documented during weekly environmental audits. The procedure is detailed in the EMS.

Any exceptional incidents that cause excessive noise emissions (such as steam venting/leaks) are recorded, alongside any remedial actions. Remedial actions may include temporary mitigation, if required until a more permanent noise control solution can be installed.

Should noise monitoring identify an unacceptable level of noise, the source process / activity is stopped to enable suitable control measures to be implemented. An “unacceptable” noise is subjectively identified by the EHS team member carrying out the monitoring based on their experience of typical noise from the site. If an unacceptable noise level is identified an environmental incident form (KC/EHS/TEM/004) should be completed and handed to the relevant departmental manager. However, if deemed necessary the EHS team member carrying out the monitoring should immediately inform the relevant department manager.

### 5.2.1 Specific requirements

During the consultation of the draft permit, WCBC sent an email to NRW stating the following:

*“Environmental Health have recently completed a review of night time noise data recorded from an outdoor noise monitor situated in 2 resident’s gardens and this indicates night- time noise impact from the Kronospan facility. Additionally, a review of noise reports carried out for Kronospan also indicates that there has been an increase in night-time environmental levels between 2016 and 2021, particularly at Maes Y Waun and Shepherds Lane.*

*As a result, Public Protection would recommend that a detailed acoustic survey (using narrow band frequency analysis and noise cameras) be carried out during the night to determine which specific pieces of plant and equipment are contributing to the night-time noise climate in Chirk. It is recommended that this survey be required as part of Kronospan’s Noise Management Plan detailed in the consolidated environmental permit (NRW IC40).”*

As stated in section 5.2, the noise monitoring is conducted by the EHS Team twice per month including a survey undertaken overnight (i.e. after 2200 hours and before 0600 hours). Should this monitoring find that there are increases in noise pollution at night or the monitoring captures unacceptable levels of noise, environmental in environmental incident form (KC/EHS/TEM/004) should be completed and handed to the relevant departmental manager. It is then the responsibility of the departmental manager to investigate the cause of the noise, identify what remedial actions are required and implement these.

## 5.3 Weather monitoring

Site management monitors weather forecasts and conditions are recorded from the on-site weather station. This information is useful to keep on record in case of noise complaints as weather conditions can allow noise to be heard at greater distance (e.g. temperature inversions, wind direction from site towards receptors, calm conditions etc). The complaints can sometimes be

linked to certain weather conditions and therefore weather patterns associated with this effect can help predict when a complaint may re-occur.

#### 5.4 Noise monitoring record keeping

Records of noise monitoring are kept in a logbook in accordance with procedure KC/EHS/PRO/017 documented in the site EMS. Monitoring records are regularly reviewed with the aim of improving noise management measures at the site and reducing any significant noise levels.

#### 5.5 Reporting of data

Reporting of data to NRW is undertaken as required in accordance with the conditions of the EP for the Facility. Any complaints received are reported to NRW in accordance with the reporting and complaints procedure for the site – refer to section 6 for further details.

## 6 Reporting and complaints response

The measures outlined in this NMP are aimed at preventing emissions of noise to the extent where complaints may be made by nearby sensitive receptors. Nevertheless, it is considered that having an established complaints procedure is an essential part of implementing a successful NMP.

As such, the EMS (see document KC/EHS/PRO/016) includes procedures for managing external complaints. This includes for complaints in relation to noise emissions from the Facility. The procedures include those for the recording of the initial complaint, the approach to investigation of the possible cause, and determination of actions to prevent recurrence. This aligns with the requirements of the EP.

The EHS Department Management are responsible for ensuring that procedures are in place for noise management on site and responsible for responding to and investigating off-site environmental noise complaints. The Departmental Managers are responsible for logging any complaints received in the site's incident reporting system, with NRW informed as soon as possible following receipt of a complaint. They are also responsible for submitting a short report to NRW detailing the complaint and whether any remedial actions have been implemented.

Public comments, complaints and concerns could be received by email, telephone or letter, either directly to the site or via the relevant authorities (such as the Local Planning Authority or NRW). Kronospan aims to respond to complaints within 2 working days of receipt, with a maximum time of 7 days implemented to respond to a complaint. An example resident complaint form is included within Appendix B.

### 6.1 Engagement with the community

Kronospan hosts quarterly Kronospan Liaison Group meetings with WCBC, NRW, Chirk Town Councillors and Unite the Union. These meetings are followed by drop in sessions at the Parish Hall which are open to all. The aim of the meeting is to inform stakeholders on work that is upcoming, the status of ongoing improvement programmes, and to understand if stakeholders have any concerns including noise. If as a result of the meeting with the Liaison Group noise issues have arisen the EHS team will investigate the issue following the environmental incident procedure. In line with this the departmental manager will be required to investigate the cause of the noise, identify what remedial actions are required and implement these

Other contact to Kronospan should be name via the main site contact number or via NRW incident Communication Centre.

## 7 Actions

During correct operation of the equipment noise adverse impacts are not expected. An increase or change in noise is typically associated with a failure of equipment and highlights a process issue. Should there be any unacceptable emissions of noise identified by monitoring, a complaint, or departmental managers, the source and reason for the noise will be stopped and investigated and any relevant mitigation or further control measures arranged. The HSE team will identify the relevant departmental manager and action will be taken. Under certain abnormal operations direction will be sought from the Operations Director. This may involve the shut-down of operations causing the noise until a suitable mitigation measure can be put into place. However, a judgement will need to be made to ensure that any equipment can be safely shut-down.

The source and mitigation measures will be monitored by the departmental managers for as long as necessary to ensure that the mitigation measures have been successful and the unacceptable noise has been halted. This may also warrant additional noise monitoring at off-site receptors for a period of time that provides reassurance that the measures implemented are sufficient.

## 8 Improvements

Areas identified for potential improvement to the management of noise emissions included the following:

- The MDF 2 silencers are to be changed (July 2023). This is in line with the commitment to ensure all noise control equipment is designed, operated and maintained appropriately to control noise effectively at all times.
- Upon the installation of new equipment or the replacement of equipment, consideration of noise and the option for low noise options will be considered.
- NRW has recommended that periodic noise impact assessments are carried out to assess the effectiveness of installed control measures.
- Additional improvements will be identified following the Noise Impact Assessment.

## 9 Summary

This NMP has been prepared to set out operational procedures to control and mitigate noise from the Facility. It is to be refined and updated on an annual basis as part of periodic reviews of the documented management systems at the Facility. Reviews will serve to confirm the identification of any new sensitive receptors, sources of noise, monitoring equipment or changes to relevant procedures (such as complaints handling and reporting).



# Appendices

## A Plans and drawings





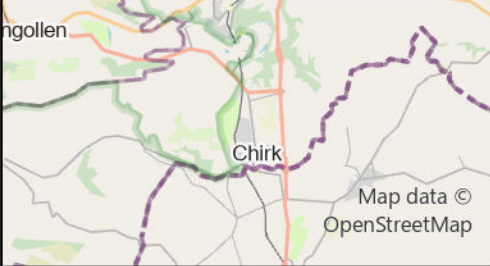
**Legend**

 Installation Boundary

Client:	Kronospan
Site:	Chirk
Project:	Management Plans
Title:	

Figure 1 - Site Location Plan

Drawn by: RSF	Date: 22/12/2023
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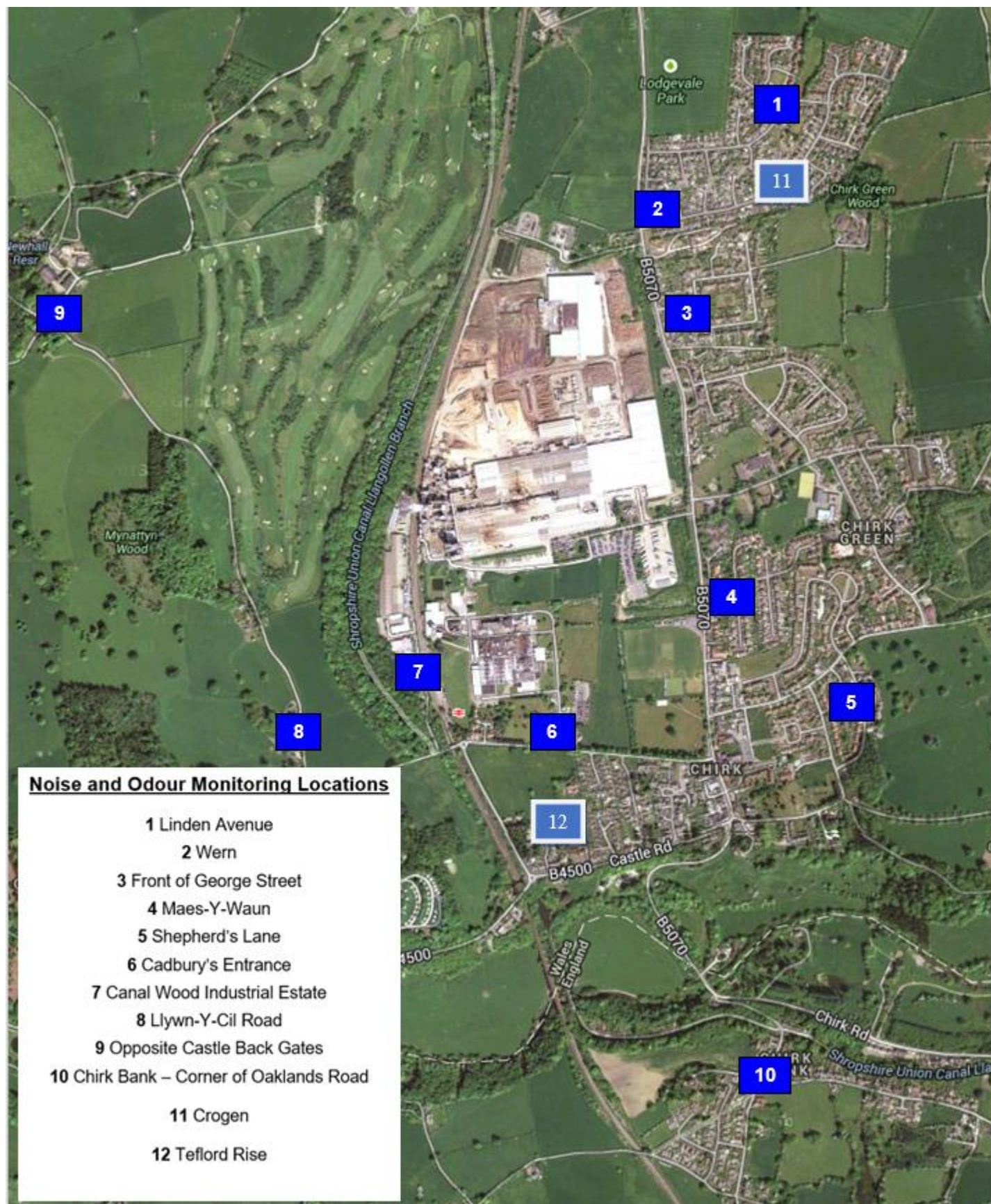


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Figure 2: Noise sensitive receptor locations and monitoring sites



## B Resident complaint form

DATE		TIME		Record fully at time of call
CALLER'S NAME		ADDRESS		
TELEPHONE		CAR REG.		
CALL TAKEN BY		INVESTIGATED BY		
WEATHER CONDITIONS				
COMPLAINT				
				Complete within 7 days
INVESTIGATION & CORRECTIVE ACTION (what was investigated; and what actions were taken)				
ROOT CAUSE				
PREVENTIVE ACTION (agreed process changes or management controls)				
RESPONSE TO CALLER				
DATE CLOSED		REF NO.		
Circulate immediately to: B Spruce, M Jones, C Barker, C Prystaz, J Morris, C Emery, J Ewing, J Greenhalgh, D Speed, & V Smith				

## C Noise assessment form

## D Noise asset register

Provided as a separate spreadsheet.



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