

For Denbighshire County Council

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# Colomendy Waste Transfer Station Dust Management Plan

Report for Denbighshire County Council

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**Front cover photography:** Denbighshire Council Logo, Eunomia Logo

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# Version Control Table

| Version | Date       | Author           | Description   |
|---------|------------|------------------|---|
| V0.1    | 05/05/2022 | Rebecca Southall | First draft (internal)                                |
| V0.2    | 23/06/2022 | Rebecca Southall | Second draft (internal)                               |
| V0.3    | 27/06/2022 | Rebecca Southall | Amends following SC review                            |
| V1.0    | 28/06/2022 | Laura Williams   | First draft (issued to client)                        |
| V1.1    | 15/07/2022 | Rebecca Southall | Third draft (internal)                                |
| V1.2    | 21/11/2022 | Rebecca Southall | Fourth draft following site layout updates (Internal) |
| V2.0    | 04/01/2023 | Rebecca Southall | Second draft (issued to client)                       |
| V2.1    | 18/08/2023 | Rebecca Southall | Updates following NRW RFI                             |
| V3.0    | 01/09/2023 | Rebecca Southall | Third draft (issued to client)                        |

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## 1.0 Introduction

This dust management plan (DMP) has been compiled for Denbighshire County Council's (DCC) Colomendy waste transfer station (WTS) 'the site'. This document, which will form part of the site's management system, has been produced in accordance with Natural Resources Wales' (NRW) guidance on 'How to Comply with your Environment Permit'<sup>1</sup> and to supplement the site's Environment Risk Assessment.

The objective of this plan is to identify and minimise the risks of dust emissions from the site activities. It describes the appropriate measures that are in place to prevent or, where that is not practicable, to minimise the presence of these emissions which are likely to cause pollution, hazard or annoyance outside the boundary of the site.

Other aspects that this DMP will cover include:

- Monitoring;
- Actions plans in the event of dust emissions;
- Allocation of responsibilities; and
- Review schedule for assessing effectiveness of the measures within this plan.

## 2.0 Site Background

### 2.1 Introduction

The site is operated by DCC, who are the permit holder. The site operates as a waste transfer station and depot, accepting a range of material streams from local residents and from small commercial waste operators for processing (sorting and baling), as well as highways material. The site is permitted to accept up to 55,000 tonnes of material per year.

### 2.2 Site Setting

The WTS is situated on Colomendy Industrial Estate located off the Ffordd Y Graig Road in Denbigh. The site is on an industrial estate situated between farmland to the north and east, commercial premises to the south-east and south, and an aggregate quarry to the west. Beyond the commercial premise to the south and southeast there are residential properties within 1km, whilst to the west (and within 1km), woodland surrounds the quarry, including two Sites of Special Scientific Interest (SSSI) within 2km.

The site is not located within an area designated as an Air Quality Management Area.

### 2.3 Site Layout

The layout of the site is shown in Figure 2-1.

### 2.4 Operating Times

The site operating times are:

- Monday - Saturday 06:00 - 19:00
- Sunday 09:00 - 16:00

No operations take place on Christmas and New Year's Day.

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<sup>1</sup> <https://naturalresources.wales/permits-and-permissions/environmental-permits/guidance-to-help-you-comply-with-your-environmental-permit/?lang=en> (last accessed 23/06/2022)

[illegible]

The working area of the site has impermeable surfacing and is accessed via a gate to the south west of site, from Graig Road. The site comprises of:

- The main waste transfer building, containing:
  - Bays for residual waste, paper, absorbent hygiene products (AHP) container, cardboard, mixed metals and plastics and sorted metals and plastics;
  - A sorting line;
  - Two balers; and
  - Office and welfare facilities.
- External sheds containing:
  - Gully waste, recyclable highways waste and green waste bays;
  - Food waste sealed skip area;
  - Vehicle wash; and
  - Bale storage.
- In addition to the waste mentioned above, there are external bays for glass, spare materials, fly-tipped waste, topsoil, non-recyclable highways waste, road sweepings, containers for textiles, Waste Electrical and Electronic Equipment (WEEE), batteries and aerosols and a dedicated quarantine bay.
- The site has two weighbridges.
- The main building and external sheds contain a dust and odour suppression system.
- There is parking for waste fleet vehicles and separate staff parking.
- To the north of the site is a firewater supply tank.

## 2.5 Waste Activities

Waste activities that take place on site include:

- Loading and unloading of waste material;
- Sorting;
- Baling; and
- Storage.

| Waste operation name             | Description of the waste operation                        | Annex I or Annex II (disposal and recovery) codes  |
|----------------------------------|---|--|
| Colomendy Waste Transfer Station | Transfer of waste:<br>household commercial and industrial | <b>R3:</b> Recycling/reclamation of organic substances which are not used as solvents<br><b>R4:</b> Recycling/reclamation of metals and metal compounds<br><b>R5:</b> Recycling/reclamation of other inorganic materials<br><b>R13:</b> Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)   |
|                                  | Transfer of waste:<br>hazardous                           | <b>D9:</b> Physico-chemical treatment not specified elsewhere in Annex II which results in final compounds or mixtures which are discarded by means of any of the operations numbered D1 to D8 and D10 to D12<br><b>D14:</b> Repackaging prior to submission to any of the operations D1 to 13<br><b>D15:</b> Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced) |

### **3.0 Sensitive Receptors**

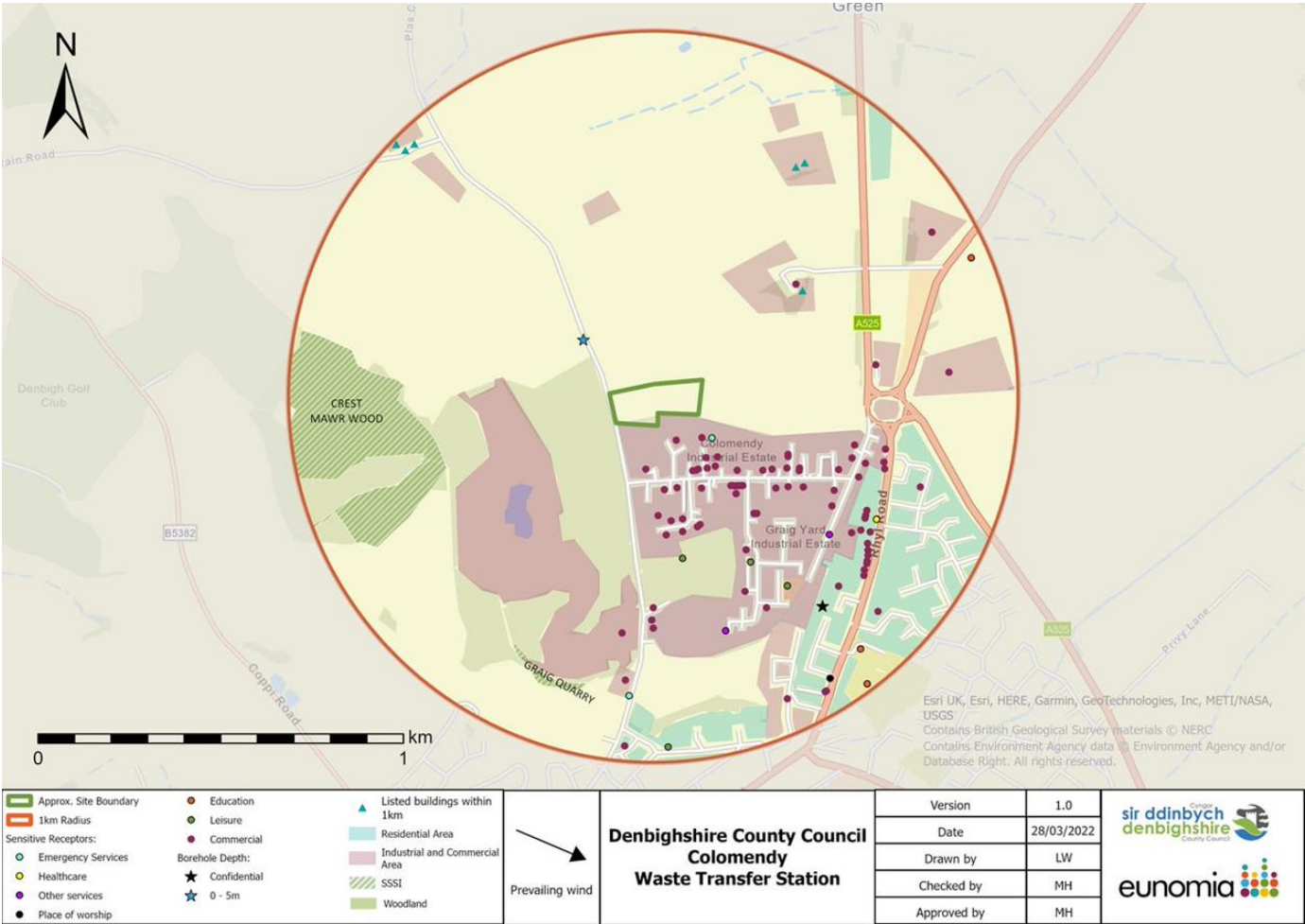
A map of the sensitive receptors within 1km of the site is detailed in Figure 3-1. The sensitive receptors that are most likely to be affected by a dust emission have been identified. These receptors may need to be contacted during an incident with updates on the expected duration. The contact details for these receptors can be found in Appendix 7.1.

In the event of a significant dust emission incident, DCC will use its website and social media channels to communicate information with sensitive receptors throughout the borough. DCC officers may also visit adjacent or high risk sensitive receptors to deliver the message in person.

The potential impact on these receptors is also assessed within a separate Environmental Risk Assessment which forms part of the site's management system.



Figure 3-1: Surrounding Land-use and Sensitive Receptors within 1km of the Site<sup>2</sup>



<sup>2</sup> There are no other SSSIs within 2km other than those shown in this 1km boundary

## 4.0 Potential Dust Sources

The wastes arise predominantly from households and comprise of segregated kerbside collections. A waste acceptance procedure, detailed below, is also in place.

Due to the nature of the waste accepted at site, the enclosure of wastes and the suppression system (as detailed in Section 4.2), it is not anticipated that dust levels would be excessive or a cause for pollution or nuisance under normal conditions.

### 4.1 Identification of Dust Sources

General sources of dust at site include:

- Acceptance and storage of waste materials, including:
  - Topsoil
  - Garden waste
  - Road sweepings
- Unloading and unloading of waste material
- Plant machinery operations (bucket scraping on concrete)
- Sorting & Baling
- Vehicle movements; and
- Inadequate housekeeping.

### 4.2 Preventative and Control Measures - Normal Conditions

The site has a Mist-air dust and odour suppression system in place in the main building and external sheds. Under normal conditions the dust and odour suppression system will periodically activate. This will produce a light mist in target areas that will contribute to keeping dust levels down. The dust will mix with any mist particle and fall to the ground. Throughout, and at the end of, each day, a sweeper will clean the operational areas to collect any settled dust. The specification of this system can be found in the Appendices.

#### 4.2.1 Acceptance of waste materials

A full waste acceptance procedure is in place as part of the site's EMS. All vehicles bringing waste material to the site will be purpose-built vehicles that are regularly cleaned and maintained. The majority of waste accepted at the site will be from household kerbside collections via the Local Authority's regular waste collection service, therefore it is unlikely that dusty wastes will be collected. Waste collection crews receive ongoing supervision and training to identify waste streams at the kerbside that may be dusty. Wastes that are highly dusty or dry or otherwise unacceptable will not be collected and the householder will be notified.

All loads received at site are inspected. Wastes that arrive at site that are in a powder or fine particulate state or that are likely to give rise to dust emissions will be rejected.

#### 4.2.2 Storage of waste materials

All deposited material is inspected. Wastes that may give rise to dust emissions will be dampened or stored in sealed containers pending removal from site.

Within the main waste transfer building and secondary storage building (where garden waste is stored), wastes are fully enclosed and any airborne dust is controlled using the installed suppression system.

For external bays, if the waste stored within may give rise to dust (i.e. road sweepings or topsoil) the waste is stored in a covered bay, enclosed on 3 sides by 5m high firewalls. These bays include a minimum 1m freeboard space at the top and front to help minimise airborne dust from the waste material. Uncovered external bays will only contain wastes that are not likely to be dusty due to their nature, e.g. glass.

#### *4.2.3 Unloading and unloading of waste material*

Wastes consisting solely or mainly of dusts, powders or loose fibres will not be accepted at the site. Loads received at site are visually inspected for dust at the first opportunity. In the event that excessively dusty material is received at site, the following action will be taken:

- If the load cannot be removed from site immediately, it will be moved to the quarantine area where it will be stored in sealed containers, if possible, or will be monitored and dampened down to contain the dust.
- At the earliest opportunity but no longer than 72 hours after it has been deposited, the material will be removed from site to a designated facility and the storage area cleaned to prevent the escape of dusts.
- A record of inspection findings and remedial actions taken will be made in the site diary.

All bulking activities, such as baling, will take place within the Waste Transfer Building(s) where the dust suppression system will be in operation. The doors to this building are only opened to allow vehicle access, to help prevent dust emissions. Where dusty wastes are required to be stored outside, for example, if in quarantine, they will be monitored, covered or dampened as required to prevent dust emissions.

#### *4.2.4 Vehicle movements*

Speed limits of 10 mph will be implemented for vehicles using the site. Site access and operational areas are composed of impermeable surfacing and will be maintained to a good standard to minimise emissions of dust due to poor surfacing. Roads and operational areas will be swept daily to reduce dust emissions.

Vehicles carrying wastes that may be prone to dust, such as street sweepings, will be covered or enclosed.

#### *4.2.5 Housekeeping*

Good housekeeping measures will be in place to clear the site of dust, mud, litter and other debris. This will consist of daily manual and mechanical sweeping and litter picking in the operational areas as well as a weekly deep clean using a chemical jet wash. Surfaces and machinery will be checked and cleaned daily and as part of the weekly deep clean, and maintained to prevent build-up of dusts and loose fibres.

Material bays will be deep cleaned at least monthly, with residual bays being deep cleaned every three weeks.

Site access and operational areas are composed of impermeable surfacing and concrete will be maintained to a good standard to minimise emissions of dust. Roads and operational areas will be swept daily to reduce dust emissions. In hot, dry weather, road surfaces will be dampened to prevent airborne dust.

### **4.3 Preventative and Control Measures - Abnormal Conditions**

In the event that dust is observed on site, or in the event that dust is observed to be leaving the site boundary, action will be taken. Firstly, the source of the dust will be determined.

Depending on the location of the dust and the severity of the emissions, the process causing the emissions will either be reduced, altered or stopped until circumstances have changed, or other appropriate measures have been put in place (e.g. administering additional dust suppression, such as deploying a mobile bowser to dampen surfaces or using a road sweeper).

Abnormal conditions that may arise include:

- Machinery breakdown;
- Planned or unplanned maintenance;
- Weather conditions; and
- An incident on site.

#### *4.3.1 Machinery breakdown*

All plant and machinery sourced will be appropriately designed, well-maintained and subject to a maintenance/ servicing schedule to prevent emissions arising from malfunctioning plant or machinery or to prevent build-up of wastes that may have the potential to become dusty if it cannot be processed in the usual timescales due to a machinery breakdown. Should an item of machinery breakdown, the machinery will be switched off, isolated and corrective action taken. The machinery will not be used until repairs have been carried out. This will be within 72 hours under normal circumstances. If the plant cannot be repaired within this timeframe, additional plant may be hired to cover. Depending on the nature of the fault, the item of plant or machinery may be replaced or subject to increased maintenance or servicing to prevent reoccurrence.

Daily pre-use inspections are to be carried out on all plant and machinery and any faults or issues found are to be reported to the site manager. Records of these daily inspections and the scheduled maintenance will be kept in the site office.

#### *4.3.2 Planned or unplanned maintenance*

In the event of any temporary works scheduled at site, depending on the length and type of the maintenance, alternative arrangement for wastes associated with a potential to cause emissions may be implemented including employing dust suppression measures or decreasing the time the waste is on site by arranging for more frequent collections, or diverting wastes to other facilities:

- Green waste will be direct delivered to Greenfields site in Flintshire.
- Other waste will be diverted to the waste facilities in neighbouring councils of:
  - Conwy Council – Gofer WTS, Abergele LL22 9SE, Recycling
  - Thorncliffes WTS - Abergele LL22 9SE, Residual

#### *4.3.3 Weather conditions*

The weather forecast will be monitored daily by site management using the local weather forecast from the nearest weather station, to identify weather conditions that may lead to more airborne dust than usual. If wind speed is likely to exceed 40mph or temperatures to exceed 30°C, additional appropriate measures, such as increasing monitoring and dampening material, will be implemented. During the daily monitoring if dust levels appear higher due to the weather conditions, increased housekeeping methods will be put in place. The dust suppression system covers all waste bays and can be activated to reduce dusty emissions, however the site will be carefully monitored and additional dust suppression methods, such as dampening dusty waste piles and surfaces with a bowser or road sweeper, may be employed.

The waste transfer building will be adequately ventilated to minimise the airborne dust within the building, with roof fans and louvres above the main roller shutter doors. Ventilation

systems will be serviced and maintained according to the manufacturer's instructions. The doors will only be opened to allow vehicle access.

#### *4.3.4 Other incidents*

Should an incident occur on site that is likely to cause dust emissions, the sensitive receptors will be notified of the cause and expected duration, if appropriate, following the procedures in the site's management system and Operating Techniques.

## **5.0 Monitoring and Responsibilities**

Dust monitoring will be undertaken:

- in line with preventative measures;
- in order to assess how successful the operational management and mitigating control measures are at the facility;
- to identify whether dust is causing a potential pollution; and
- to ensure that appropriate remediation measures are adopted early.

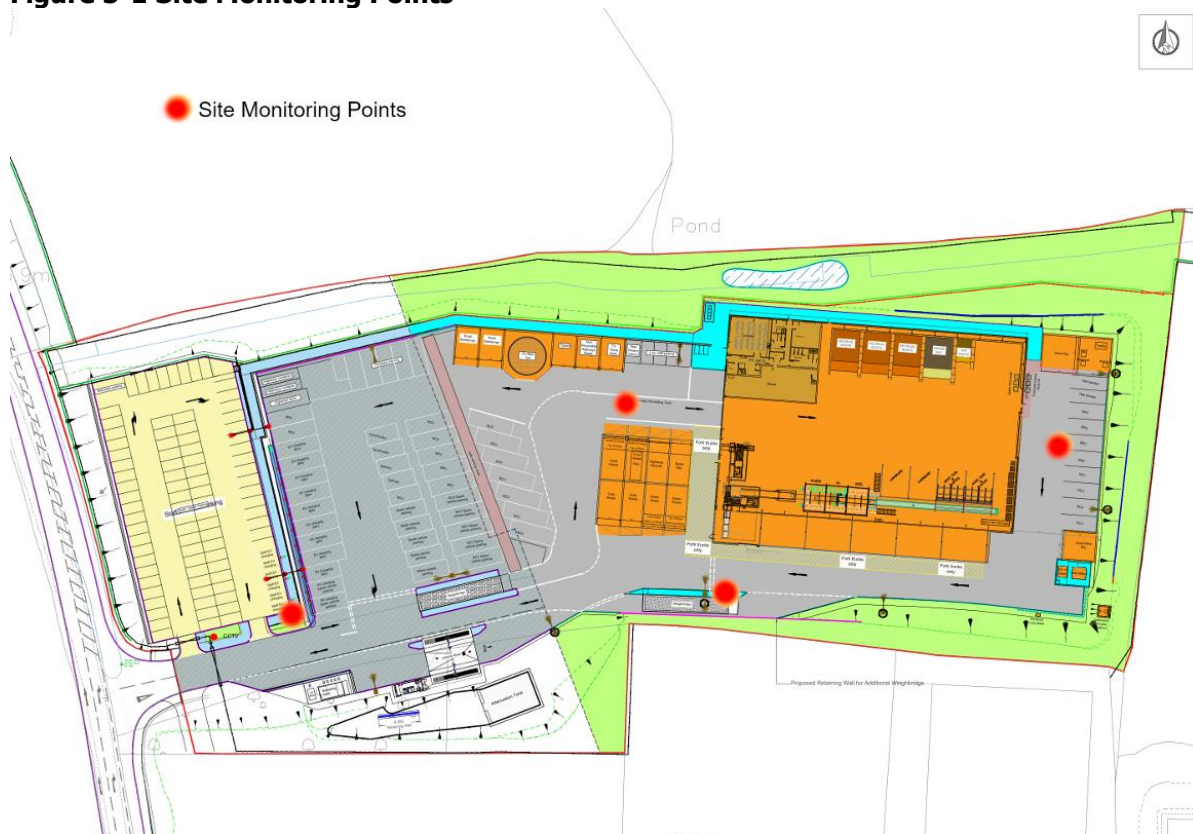
Monitoring will be undertaken by trained, designated staff. All depot staff will be trained on all procedures in the DMP. This will form part of their training matrix. Depot staff will take turns in undertaking the daily checks.

All site personnel will be responsible for reporting any problems like dust emissions identified during their day to day operations and for carrying out the procedures in Section 4.0. A formal inspection will be included as part of daily checks. These checks will be undertaken at various times of the day to avoid routinely missing any issues. Staff will be trained to look for dust sources that may cause fugitive dust emissions beyond the site perimeter i.e. visible airborne dust, or a build-up of dust settled on surfaces.

Set monitoring points are shown in Figure 5-1 however additional monitoring will be undertaken via the daily site checks during the site walkaround, taking into consideration the operations and weather conditions at the time.



**Figure 5-1 Site Monitoring Points**



| Parameter                           | Monitoring Technique   | Frequency   | Responsibility                     |
|-------------------------------------|--|---|------------------------------------|
| Dust Monitoring                     | Site perimeter and off site checks (along the site perimeter).<br><br>Visual inspection for signs of dust. | During normal operating conditions:<br><ul style="list-style-type: none"> <li>Daily</li> </ul> During an incident or abnormal operating conditions:<br><ul style="list-style-type: none"> <li>Frequency of monitoring should be increased until incident is resolved</li> </ul> | Trained, designated staff members. |
| Complaints Monitoring               | Logged and actioned as in Section 6.0  | <ul style="list-style-type: none"> <li>Ad-Hoc/ following incidents.</li> </ul>  | Site manager                       |
| Review the effectiveness of the DMP | This DMP will be reviewed for effectiveness and continuous improvement.                                    | In lieu of no complaints:<br><ul style="list-style-type: none"> <li>Annually</li> </ul> After a complaint that was substantiated:<br><ul style="list-style-type: none"> <li>Immediately following a complaint at the Facility.</li> </ul>                                       | Site manager                       |

Any instances of dust being perceived to be above acceptable levels, either during the daily dust monitoring or at any other time, will be reported to site management. The site manager will take action to find the source of the dust and mitigate as appropriate using the procedures in section 4.3.

If required, specialist dust monitoring or mitigation advice will be sought by a qualified third party contractor.

The site manager is responsible for reviewing the DMP and updating this procedure with any changes required or following a significant dust emission incident.

To maintain continuous improvement, as part of the annual review of the DMP - or sooner, if a review is prompted by an incident - all complaints and incidents will be reviewed and operations, infrastructure and training needs will be revised in line with these, with the aim of improving operations on site.

Daily checks will be kept on record for 3 years, the site diary will also be updated with any issues and kept for three years.

## **6.0 Complaints**

In the event of a complaint regarding dust, investigations will commence immediately to identify the source of the dust. These investigations will be carried out by the site manager and will:

- ensure dust management procedures are in place;
- check if dust management procedures have failed; and
- note the impact of the dust emission.

Should the investigation identify that remedial action is required, the procedure in Section 4.3 will be followed.

A record of the complaint and investigation will also be made in DCCs corporate customer service software, that demands a response and follow up to complaints. Complaints are to be responded to within 10 working days. Investigations are carried out and appropriate measures put in place to prevent reoccurrence, and reviewed with the aim of improving operations on site.

Details of complaints, investigations and actions will be made available to NRW on request.

Information will be provided to the local neighbours regarding the point and method of contact for the site in the event of a complaint or if they want to discuss any activities at the site.

- The neighbours can be advised that any complaints or concerns will be addressed immediately following identification and notification, and contingency action implemented;
- The neighbours can be advised of any corrective action and a follow up call carried out if required.

The primary point of contact at the site for complaints and liaison with the neighbours is the site manager who will ensure that the recording, investigation and close out of complaints is undertaken as described above and in accordance with company management procedures.

## 7.0 APPENDICES

### 7.1 List of Sensitive Receptors

**Table 7-1: Sensitive Receptor Contact Details**

| Contact Name                      | Contact Number | Location/Address  |
|-----------------------------------|----------------|---|
| 21st Webb                         | 0333 366 1289  | Unit 1, Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ     |
| Acre House Equestrian             | 0174 581 6628  | Unit 2, Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ     |
| A & D Motor Cycles Ltd            | 0174 581 5105  | Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ             |
| Adjustamatic Beds Ltd             | 0800 080 5000  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TS        |
| AG Leisure                        | 0792 004 7435  | AG leisure Unit 7E, Denbigh LL16 5TA                          |
| ALDI                              | 0800 042 0800  | Station Rd, Denbigh LL16 3AL                                  |
| Aqualeisure                       | 0174 581 5476  | Unit 7 G&H, Colomendy Ind Estate, Denbigh LL16 5TA            |
| Baa Stool Ltd.                    | 0182 479 0882  | 13 Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA     |
| ATS Euromaster Denbigh            | 0174 581 2217  | Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA        |
| Beth's Sandwich Bar               | 0174 581 4647  | Maldwyn Williams Garage Services, Rhyl Rd, Denbigh LL16 5TH   |
| Birch Hire                        | 0174 581 3583  | Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA        |
| Blind Solutions Ltd Workshop      | 01745 815549   | Denbigh LL16 5TS  |
| Brady Global Ltd                  | 01745 814 978  | 34 Bryn Gwyrdd, Colomendy Ind Est, Denbigh LL16 5TA           |
| BrickPlus                         | 0174 547 2150  | Colomendy Ind Estate, 34 Bryn Gwyrdd, Denbigh LL16 5TA        |
| Breedon Denbigh Quarry Aggregates | 0174 527 4830  | Plas Chambres Road, Denbigh LL16 5US                          |
| CAD RECYCLING LTD                 | 0174 581 2661  | Spencer Trading Estate, Unit 5 & 6, Rhyl Rd, Denbigh LL16 5TQ |
| Capel Y Fron                      | None available | 41 Rhyl Rd, Denbigh LL16 3DT                                  |
| Cake to Cake                      | 0796 698 9583  | 9 Ffordd Celyn, Denbigh LL16 5UU                              |
| Castle Steel Fabricators          | 0174 581 3341  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA        |
| Catalyst Systems                  | 01745 816611   | Unit 15b, Colomendy Industrial Estate, Denbigh LL16 5TA       |
| Celtic Dreams                     | 0174 581 3245  | Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SU             |
| Clwb Rygbi Dinbych                | 0174 581 4060  | Ffordd Y Graig, Denbigh LL16 5US                              |
| Clwyd Wood Products               | 0174 581 2010  | Rhyl Rd, Denbigh LL16 5TH                                     |
| Clwydian                          | 0174 581 6720  | Clwydian, Rhyl Rd, Denbigh LL16 5TH                           |
| Clwydian Leasing                  | 0174 581 6720  | Rhyl Rd, Denbigh LL16 5TH                                     |
| Con Amici                         | 0174 581 4444  | Rhyl Rd, Denbigh LL16 3DS                                     |
| CVAM Ltd                          | 0174 581 6775  | Rhyl Rd, Denbigh LL16 5SU                                     |
| D Jones Plant Hire & Sales Ltd    | 0174 581 5554  | Unit 5, Colomendy Ind Est, Rhyl Rd, Denbigh LL16 5TA          |
| DAS Outdoors                      | 0174 581 4978  | Colomendy industrial estate, 34 Bryn Gwyrdd, Denbigh LL16 5TA |
| DB Touring                        | 0778 744 6658  | Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SU             |
| Denbigh Ambulance Station         | 01824 706000   | Denbigh LL16 5TD  |
| Denbigh Auto Body                 | 0174 581 5559  | Ffordd Y Graig, Denbigh LL16 5US                              |



| Contact Name                             | Contact Number | Location/Address  |
|--|----------------|---|
| Denbigh Building Plastics Limited        | 0174 581 8849  | Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Denbigh Carpet & Bed Centre              | 0174 581 7034  | Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SJ                       |
| Denbigh Locksmiths                       | 0781 385 0008  | Unit A1/Trem y Dyffryn/Erw Las/Colomendy Ind Est, Denbigh LL16 5TX      |
| Denbigh Plant Services - Denbigh         | 0174 581 4762  | Unit 10B, Colomendy Industrial Estate, Denbigh LL16 5TA                 |
| Denbigh Museum                           | 0174 581 4323  | Grove Rd, Denbigh LL16 3UU  |
| Denbigh waste and recycling park         | 01824 706000   | Ffordd Colomendy, Denbigh LL16 5TA                                      |
| Denbighshire Antiques                    | 0174 581 8888  | Rhyl Rd, Denbigh LL16 3DY   |
| Denbighshire Leisure Ltd                 | None available | Colomendy industrial estate, 8-11 Trem Y Dyffryn, Denbigh LL16 5TA      |
| Denbighshire Music Co-operative          | 0174 581 3542  | 1, Spencer Trading Estate, Rhyl Rd, Denbigh LL16 5TQ                    |
| Dovecote Brewery                         | 0790 895 7116  | Unit 2 Enterprise Centre, Colomendy Industrial Estate, Denbigh LL16 5TA |
| Drysuit Doctor                           | 0174 581 5476  | Colomendy Industrial Estate, Units G & H 7, Denbigh LL16 5TA            |
| E. Jones & Son                           | 0174 581 5717  | Denbigh LL16 5US  |
| Emyr Evans                               | 0174 581 2333  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |
| ForFarmers                               | 0174 581 6391  | Denbigh LL16 5TD  |
| G & G Motors NW Ltd                      | 0174 581 2483  | Colomendy industrial estate, Bryn Gwyrdd, Denbigh LL16 5TA              |
| Glyn Evans Autoclinic Ltd                | 0174 581 5141  | Erw Las, Colomendy industrial Estate, Denbigh LL16 5TA                  |
| Graig Motors                             | 0174 581 5606  | Graig Yard, Graig Road, Denbigh LL16 5US                                |
| Happy Homes Furniture Factory            | 0174 581 2377  | Denbigh LL16 5TD  |
| Harrison Machinery Ltd                   | 0182 470 7003  | Cae Gwyn Farm, Mold Road, Denbigh LL16 4BH                              |
| Henllan Bakery                           | 0174 581 2671  | Colomendy industrial estate, 1, Rhyl Rd, Denbigh LL16 5TA               |
| Howdens – Denbigh                        | 0174 581 7484  | Colomendy industrial estate, Unit 10 Rhyl Rd, Denbigh LL16 5TA          |
| J & G Tyres                              | 0174 581 7676  | Unit 1, Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SJ               |
| Humphreys Signs Ltd                      | 0174 581 4066  | Rhyl Rd, Denbigh LL16 5TA   |
| Jewson Denbigh                           | 0174 581 2606  | Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Lawson Civil Engineering & Utilities Ltd | 0174 581 4681  | Graig Farm Buildings, Graig Road, Denbigh LL16 5US                      |
| Londis                                   | 0174 581 6524  | Denbigh LL16 5SU  |
| Mac3                                     | 0174 581 6266  | B12, Colomendy Industrial Estate, Trem Y Dyffryn, Denbigh LL16 5TX      |
| Maldwyn car wash                         | 01745 812542   | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Malmö International                      | None available | Colomendy Ind Estate, 34 Bryn Gwyrdd, Denbigh LL16 5TA                  |
| Marg's Takeaway                          | 0174 581 7080  | 1 Rhyl Rd, Denbigh LL16 5TA   |
| Malpas Tractors                          | 0174 581 7060  | 33a, Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA             |
| Maldwyn Williams Ltd Garage Services     | 0174 581 2542  | Maldwyn Williams Garage Services, Rhyl Rd, Denbigh LL16 5TH             |
| Mars-Jones Ltd                           | 0174 581 8721  | Vale Park Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA        |

| Contact Name                         | Contact Number | Location/Address  |
|--------------------------------------|----------------|---|
| Mason's Arms                         | 0174 581 2831  | Rhyl Rd, Denbigh LL16 3DT   |
| Meifod Wood Products                 | 0174 581 6900  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Meirion Davies & Co                  | 0174 581 2400  | 2 Colomendy Industrial Estate, Rhyl Road, Denbigh LL16 5TA              |
| MGM-Worktops                         | 0174 581 2532  | Morris Granite & Marble, Denbigh LL16 5TA                               |
| MJ Driver Training                   | 0174 581 3226  | 29 Lllys Gwydyr, Denbigh LL16 3ET                                       |
| Monster Munchiez Cafe                | 0788 549 3071  | Colomendy industrial estate, Unit 1 Enterprise Centre, Denbigh LL12 5TA |
| Morris E G                           | 0174 581 3272  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Nixon Plumbing & Heating             | 0174 528 4700  | Colomendy Industrial Estate, Unit 1 Norparc, Denbigh LL16 5TA           |
| NHC Technology Ltd.                  | 0174 581 1200  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TS                  |
| North Wales Police                   | 0330 330 0101  | Ffordd Y Graig, Denbigh LL16 3YB  |
| Oelheld UK Ltd                       | 0174 581 4777  | Unit 16, Colomendy Industrial Estate, Denbigh LL16 5TA                  |
| Oshwash                              | 0756 851 2024  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Pen-Y-Bryn Joinery Ltd               | 0174 581 5481  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Plas Eleri Nursing Home              | 0174 581 4613  | Denbigh LL16 5SY  |
| Pressed 2 Perfection                 | 0174 579 8055  | Denbigh LL16 5TX  |
| Pro Finish Cosmetic Car Repairs      | 0757 688 4976  | Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SU                       |
| R R Auto                             | 0758 674 6122  | Unit 8c, Denbigh LL16 5SU   |
| Ravenscroft & Thackeray Fine Foods   | 0174 581 8900  | Colomendy industrial estate, Cranswick House, Denbigh LL16 5TA          |
| R Smith & Son                        | 0174 581 2043  | Coal Yard, Ffordd Y Graig, Denbigh LL16 5US                             |
| Rich Thomas Personal Training        | 0774 800 2273  | Unit 3, Speddyd Industrial Units, Llandyrnog, Denbigh LL16 4LE          |
| Riley Land Rover                     | 0747 342 2588  | Dyffryn Trading Estate, Rhyl Rd, Denbigh LL16 5SJ                       |
| Rizzi                                | 0174 581 2548  | Fron Eirian/Rhyl Rd, Denbigh LL16 5TG                                   |
| Ruthin & Denbigh Gymnastics Club Ltd | 0777 907 9838  | Colomendy Industrial Estate, Erw Las, Denbigh LL16 5TA                  |
| Sam's cafe                           | 0739 596 2724  | Sams Cafe, Spencer Industrial Estate, Denbigh LL16 5TQ                  |
| Screwfix                             | 0333 011 2112  | Unit 3, Retail Park, Denbigh LL16 3AL                                   |
| Shell                                | 0174 581 6524  | Rhyl Rd, Denbigh LL16 5SU   |
| Shorecliffe Training                 | 0174 581 5977  | Colomendy industrial estate, Rhyl Rd, Denbigh LL16 5TA                  |
| Simply Fish & Chips                  | 0174 581 2999  | 31 Rhyl Rd, Denbigh LL16 3DT  |
| St. Brigid's School                  | 0174 581 5228  | Plas Yn Green, Denbigh LL16 4BH   |
| Star Premier Stores                  | 0174 579 7026  | 3EA, Rhyl Rd, Denbigh   |
| Telsol                               | 0174 581 4678  | 23-24 Colomendy Industrial Estate, Rhyl Road, Denbigh LL16 5TA          |
| The Garment Spa                      | 0174 581 3312  | Vale Park Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA        |
| Travis Perkins                       | 0174 581 3332  | Colomendy industrial estate, Plot 10C, Denbigh LL16 5TA                 |
| Vale Of Clwyd Memorials              | 0174 581 5770  | Colomendy Industrial Estate, Rhyl Rd, Denbigh LL16 5TA                  |

| Contact Name                         | Contact Number | Location/Address   |
|--------------------------------------|----------------|--|
| W T Pritchard Ltd                    | 0174 581 2047  | Veterinary Centre/Colomendy Ind Est/Rhyl Rd, Denbigh LL16 5TA  |
| Welsh Adventure Racing               | 0174 581 8893  | Denbigh LL16 5TL   |
| Welsh Health Supplies                | 0174 581 8200  | Denbigh NHS Stores/Colomendy Ind Est/Rhyl Rd, Denbigh LL16 5TA |
| Visage Beauty Salon                  | 0174 581 2215  | Maes y Mes/Rhyl Rd, Denbigh LL16 5TH                           |
| Y Bwthyn Bach                        | 0174 581 2311  | 5 Frances Ln, Saundersfoot SA69 9HB                            |
| Wern Vets                            | 0174 581 2336  | Rhyl Rd, Denbigh LL16 5TH                                      |
| Ysgol Frongoch County Primary School | 0174 581 2410  | Ffordd, Rhyl Rd, Denbigh LL16 3DP                              |
| Ysgol Twm O'r Nant                   | 0174 581 2261  | Ty'n Fron School Annexe/Rhyl Rd, Denbigh LL16 3DP              |
| Ty'n Yr Eithin                       | 0174 581 3211  | Mold Rd, Denbigh LL16 4BH                                      |

**Figure 7-1: Dust Suppression System Specification**



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**The concept of a *mist-air*® System.**

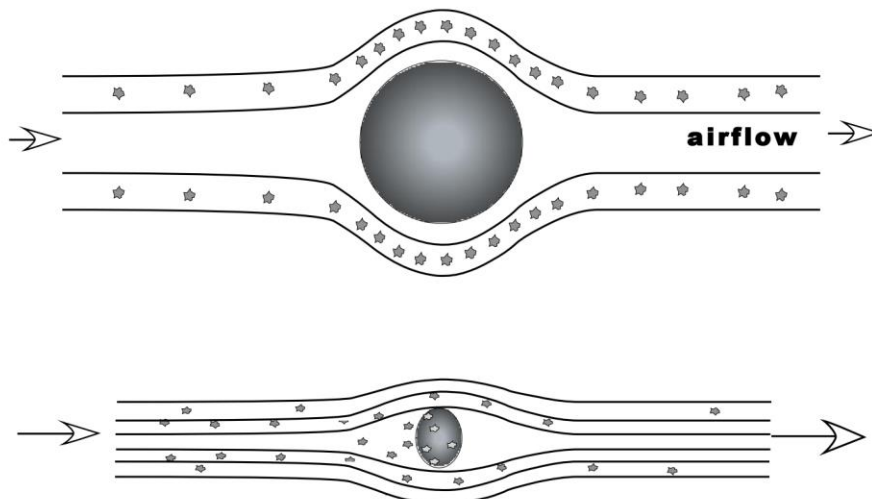
*mist-air*® produces large quantities of microfine fog from very little water, which then floats in the air without falling to the ground so keeping materials, floors, machinery and personnel dry, preventing screen binding or slipping belts associated with water sprays or the coarse droplets formed by rotary atomisers. Fine airborne dust and odorous gases are attracted to the *mist-air*® fog.

To put this into perspective, rain and spray jets are up to 3 mm in diameter, a human hair is 70 microns, aerosol sprays are 50 microns. *mist-air*® F fog is as low as 5 microns. i.e. 5000<sup>th</sup>. of a millimetre.

Rotary atomisers form very coarse large droplets which falls to the ground creating wetting in front of the fans.

**Why the system works.**

Dust and gas particles flow around large droplets due to the higher surface tension of the droplet, and because it displaces more airspace.



However, dust particles and gases are actually attracted to the microfine fog particles created by Mist-Air, which increases their weight and makes them sink to the ground.

As soon as they come into contact with the fog they begin to sink. Provided the fog is in the air before the dust is formed it cannot become airborne or move from the place it was formed in.

Mist-Air create the fog and then the fans spoil the air, separating the particles over a wide area, producing an ever-increasing fog cloud, rather than blowing it in a tight cone.

For hydrophobic material, **Mist-Air wetting agent** can be automatically added to the fog to make it even more absorbent.



[www.mist-air.eu](http://www.mist-air.eu)

### **The Misting System**

The **mist-air**® Base Unit, is housed in a free-standing lockable steel cabinet which provides all the power for the system, this can be positioned anywhere convenient indoors or outside. All wetted parts throughout the system are stainless or non-ferrous materials



**Mist Air Base Unit**

Dimensions 1200mm h x 900mm w x 600 mm d. Weight 120 kg

There are various models available to providing sufficient fog for any size of building or buildings simultaneously.

The Base Unit has up to 6 independent circuits, allowing each area to be treated separately or simultaneously.

Each circuit could be on or off or operated by timers to operate intermittently at times set by the operator.

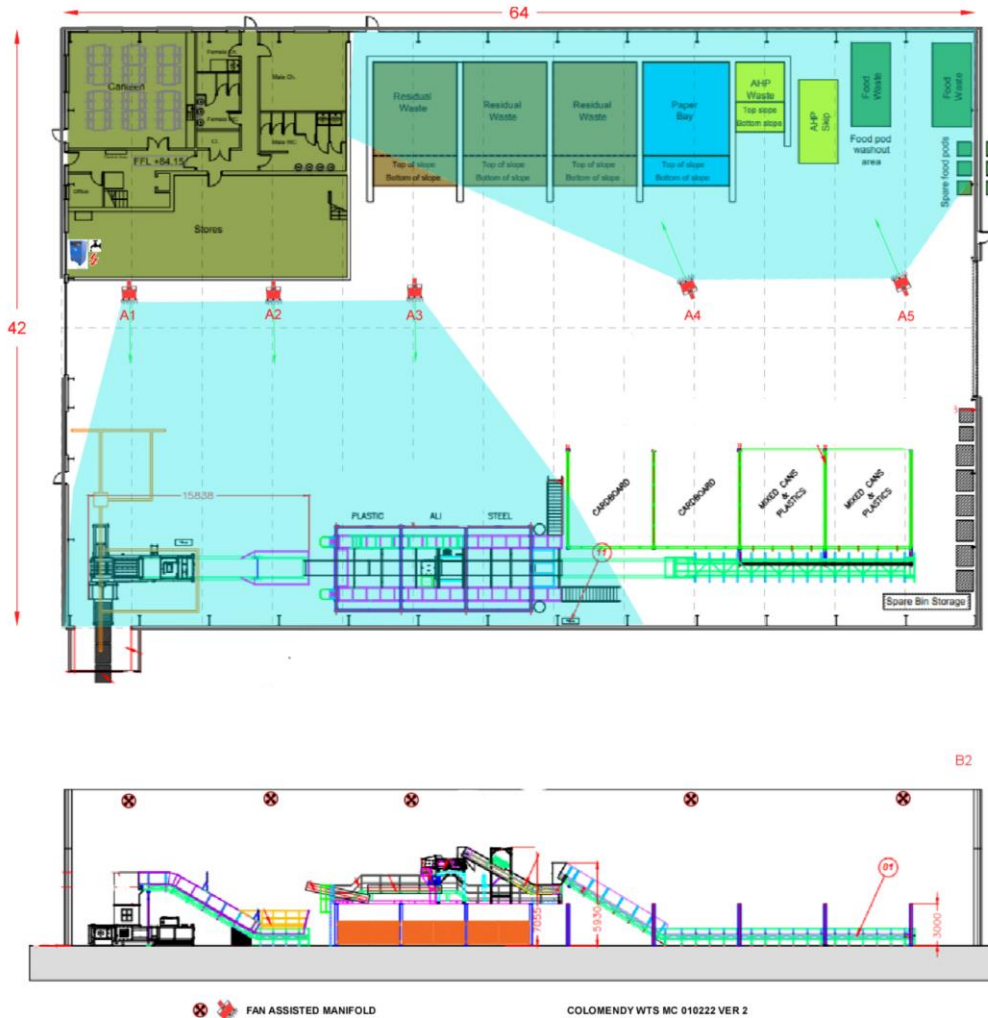
#### **Methods of switching available.**

- Switches on the control panel (standard)
- Remote hard-wired switches.
- Radio controlled
- No volt Signal from machinery i.e., conveyor motors, doors, etc.
- PIRs proximity switches.
- Humidistats.
- Wind vanes.

Reinforced circulation hose and SY armoured cable is then fed from the base unit to the various circuits required around the site, which can be either Fan Assisted Manifolds or Static Stainless-Steel Manifolds.



## Site drawing



This system prevents fine dust staying in the air, but without causing dampness or wetting to floors, machinery, or stock. Even an efficient extraction system doesn't have a hope of achieving this, as there are so many possible dust forming points on a layout like this. Hoods over dust forming points are fine but then it is impossible to cater for every point. Negative pressure extraction continuously drags contaminants through the air, past the operatives, to the extraction points, whereas Mist-Air doesn't allow the dust to travel at all.



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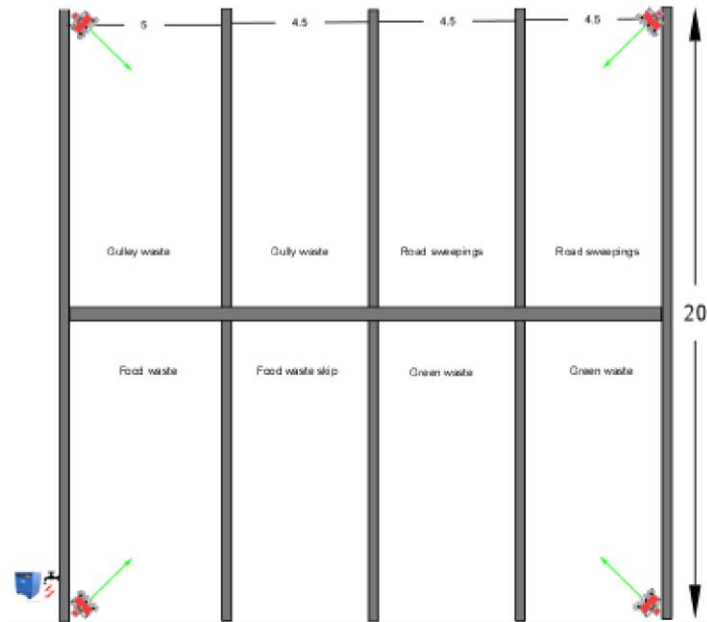
**To supply and install**

Base Unit Comprising of:

- Positive displacement 3 plunger 13 lpm. pump unit
- 415v 4 pole 2.2 kw motor. Inverter to ramp up and down the motor and govern pump speeds
- Electronic safety systems for each circuit. Smart wire circuitry.
- Filtration system. Phosphate water softener system
- Heater and frost thermostat
- Chemical dosing pump for odours and flies
- A single circuit A will be used to reduce costs with auto pause intermittent timer system
- 18 litre header tank with low level switch and Type A airgap
- Inlet water pressure regulator.



### Highway Bays



If the Base Unit in the main recycling building can be accessed a new Base Unit may not be required.



**Customer to supply**

**Power**

415v 3 phase and neutral 16 amps per phase to an isolator within 1 meter of the base unit.

**Water**

Clean Potable water to a 25mm poly-pipe and a ¼ turn inline poly-tap within 1 meter of the Base Unit.  
3 bar pressure, 13 lpm flow.

We require no other wiring or water supplies, but additional expenses incurred by these above facilities not being provided on the agreed installation date are chargeable as it entails additional travelling time, hotels, etc.

**Payment** 50% deposit with order. 50% after commissioning.

**Delivery** Approximately 28 days from date of written order and deposit

**Warranty**

2-year parts warranty excluding general maintenance and mechanical damage or abuse.  
20-year corrosion warranty.

**Maintenance**

The system requires little maintenance and has a life expectancy in excess of 30 years.  
mist-air® offer a service to clean and check the system to ensure 100% efficiency or your own engineers can be instructed to do this.

**Health & Safety.**

Safety information, insurance cover, risk assessment, and method statements are provided, prior to installation. All staff are fully qualified to undertake their respective tasks.  
We have a 35-year unblemished record of satisfaction and safety for all our products and services.

The system has been fitted to over 5500 recycling sites throughout Europe over the last 20 years and has been systematically improved and updated as technology improved to make this system the most reliable and advanced dust suppression system on the market anywhere today.

If you require any further information, please do not hesitate to contact me.

Kind regards



**Mike Carter.**



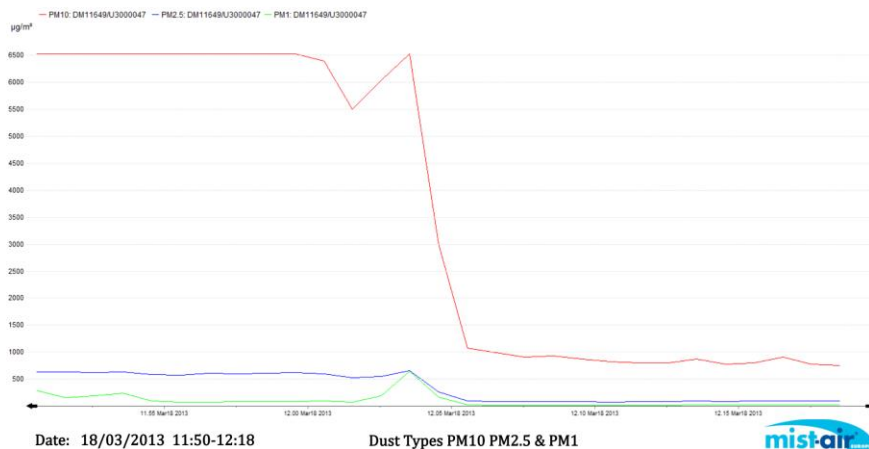
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#### Dust Monitoring Results.

The below graph is of dust levels in a Material Recycling Facility. The Dust monitor was left to run continually for 30mins. 15mins with the **mist-air** system switched **off** and 15mins with our system **on**.



PM10s particles (ug/m<sup>3</sup>) Reduced by 88.5%

PM2.5s particles(ug/m<sup>3</sup>) Reduced by 88.3%

PM1s particles (ug/m<sup>3</sup>) Reduced by 97.6%



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Just a sample of some of the thousands of customers using Mist-Air



**The advantage of the mist-air® system is that:**

- One Base Unit controls the whole system
- It uses very little water
- Does not need a water storage tank
- Requires no compressor
- Helps Prevents the risk of Flash explosions in contaminated air
- Everything stays dry, stock, machinery and floors so no slip hazards
- Independent circuits which are infinitely controllable
- Timed intermittent operation when required on any circuit
- Additive's dosing system to control odours and flies
- Sanitizing system to purge the whole system against Legionella etc.
- Life expectancy 25 + years
- Corrosion warranty 20 years
- All wetted parts are manufactured from stainless steel or non-ferrous materials so there can be no corrosion within the system
- All electronics controlled by Smart Wire SWD state of the art solid state electronics
- The whole system can be trace heated and insulated for protection down to - 27° Celsius.
- There is ***no other system available*** offering this fineness of fog particles with this degree of reliability, flexibility, and effectiveness!!



### Air sampling results

Independently replicated and confirmed by the Environment Agency

Measured in milligrams per cubic meter.

#### TOTAL DUST

|            | Mist-Air OFF | Mist-Air ON | Difference | Improvement    |
|------------|--------------|-------------|------------|----------------|
| Position 1 | 2.4          | 0.5         | 1.9        | 79 % reduction |
| Position 2 | 2.5          | 0.2         | 2.3        | 92 % reduction |
| Position 3 | 4.2          | 0.5         | 3.7        | 88 % reduction |

#### RESPIRABLE DUST

|            | Mist-Air OFF | Mist-Air ON | Difference | Improvement    |
|------------|--------------|-------------|------------|----------------|
| Position 1 | 0.6          | 0.2         | 0.4        | 66 % reduction |
| Position 2 | 0.4          | 0.1         | 0.3        | 75 % reduction |
| Position 3 | 0.9          | 0.5         | 0.4        | 44 % reduction |

#### RESPIRIBLE SILICA

|            | Mist-Air OFF | Mist-Air ON | Difference | Improvement    |
|------------|--------------|-------------|------------|----------------|
| Position 1 | 0.23         | 0.04        | 0.19       | 83 % reduction |
| Position 2 | 0.56         | 0.03        | 0.53       | 94 % reduction |
| Position 3 | 0.76         | 0.04        | 0.72       | 95 % reduction |
| Position 4 | 0.17         | 0.07        | 0.1        | 89 % reduction |
| Position 5 | 0.31         | 0.11        | 0.2        | 64 % reduction |
| Position 6 | 0.17         | 0.02        | 0.15       | 88 % reduction |



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**mist-air® Fan cable NYY J PVC 0.6/1 KV.**



**APPLICATION**

Power and control cable for fixed installation. Can be used indoors, outdoors, underground, in concrete and in water.

**STANDARDS**

IEC 60502-1 Flame retardant according to IEC/EN 60332-1-2

**ISO/IEC 17025 LABORATORY TESTED**

This product is subject to the Quality Assurance protocols of The Cable Lab®, an ISO/IEC 17025 accredited cable testing laboratory. Testing includes vertical flame, conductor resistance, tensile & elongation, and dimensional consistency, verified to published standards and approved product drawings.

**CHARACTERISTICS**

Voltage Rating Uo/U 0.6/1kV Temperature Rating Fixed: -15°C to +70°C Flexed: -5°C to +50°C  
Minimum Bending Radius Fixed: 12 x overall diameter

**CONSTRUCTION**

**Conductor** RM: Class 1 Solid copper conductor **Insulation** PVC (Polyvinyl Chloride)  
**Filler** PVC (Polyvinyl Chloride) **Sheath** PVC (Polyvinyl Chloride)  
**Core Identification** 3 core: Green/Yellow Blue Brown **Sheath Colour** Black

**REGULATORY COMPLIANCE**

This cable is compliant with European Regulation EN 50575, the Construction Products Regulation. This cable meets the requirements of the Low Voltage Directive 2014/35/EU and the RoHS Directive 2011/65/EU. RoHS compliance has been tested and confirmed by The Cable Lab® as meeting the requirements of the BSI RoHS Trusted Kitemark™.

**ELECTRICAL CHARACTERISTICS**

**Current Carrying Capacity # A9N3925 Cores 3 Nominal cross section area** mm<sup>2</sup> 2.5 **Conductor type** RE  
**Nominal Sheath thickness** 1.8mm . **Overall diameter** 11.3 mm. **Nominal weight** 212 Kg/km.  
**Current carrying capacity in duct** 34 amps. **Current carrying capacity in air** 25 amps.

**UNDERGROUND** Ambient temp. 30 degrees C. Depth of laying 0.5m. Ground temp 15 deg. C. Thermal resistance of soil 12 km/w

**DE-RATING FACTORS**

| AIR TEMPERATURE  | 20°C | 25°C | 30°C | 35°C | 40°C | 45°C | 50°C |
|------------------|------|------|------|------|------|------|------|
| DE-RATING FACTOR | 1.12 | 1.07 | 1.00 | 0.94 | 0.87 | 0.79 | 0.71 |



The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.



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**mist-air® High-Pressure Thermoplastic Hose**



**Technical**

Polyamide is a thermoplastic polyester, reinforced in polyester fibre exterior covering in marine anti-abrasion polyurethane, stabilized to UV rays and resistant to micro-organisms.

**Applications**

Mist-Air hose marine hose is designed for hydraulic applications in marine environments at high pressure, with exceptional mechanical, thermal and chemical resistant properties.

Its high strength, exceptional high heat capability, and broad chemical resistance put polyamide-imides at the top of performance pyramid.

High and low temperature and chemical resistance together with good mechanical stability makes polyamide especially suitable for high-pressure and demanding applications.

|                                 |                                   |
|---------------------------------|-----------------------------------|
| <b>Diameter</b>                 | 6.4mm inside diameter. 11.8mm o/d |
| <b>Weight</b>                   | 90 grams per meter                |
| <b>Minimum bend curvature</b>   | 35mm / 1.38"                      |
| <b>Minimum burst pressure</b>   | 800 bar / 11,600psi               |
| <b>Maximum working pressure</b> | 200 bar / 2900 psi                |
| <b>Actual working pressure</b>  | 100 bar / 1450 psi                |
| <b>Safe working ratio</b>       | 8:1                               |



This hose is approved for Marine use by Lloyds Register and meets or exceeds the following standards:

SAE J517 sec. SAE 100R7- EN 855-ISO 3949



[www.mist-air.eu](http://www.mist-air.eu)

### mist-air® Misting jets



FINE FOG

NORMAL FOG

COURSE MIST

### MATERIAL

#### **NOZZLE-BODY: Polyamide**

Polyamide is a thermoplastic amorphous polymer that has exceptional mechanical, thermal and chemical resistant properties.

Melting point: 180 ~ 280 °C

Density: 1.05 ~ 1.15.

Its high strength, exceptional high heat capability, and broad chemical resistance put polyamide-imides at the top of performance pyramid.

High temperature and chemical resistance together with good mechanical stability makes polyamide especially suitable for high-pressure and demanding applications.

Polyamide can resist plasticization because of the strong intermolecular interactions arising from the polyimide functions as well as the ability of the polymer chains to hydrogen bond with one another because of the amide bond.

#### **NOZZLE-TIP: One shot moulded ceramic orifice.**

Ceramics offer many advantages compared to other materials. They are harder and stiffer than steel, more heat and corrosion resistant than metals or polymers and are less dense than most metals and their alloys.



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### mist-air® Fan assisted manifolds

**mist-air®** Stainless steel fan assisted manifolds are normally mounted on the roof beams to produce an extremely fine fog which is blown towards the dust creating area, expanding the fog cloud and separating the fog particles, which bombard the dust particles and prevent them from becoming airborne.



### Specifications

- Fan assisted manifolds IP54 fitted with up to 20 Ceramic tipped nozzles.
- Cowls and manifolds manufactured from stainless steel
- Rated Fans 450mm diameter.
- Weight with brackets 10 kg.
- 270-Watt motor. 1.3 amps.
- 64 dB at 1 meter
- 3mm.galvanised steel brackets.
- Brackets mounted on to roof beams with steel clamp bolts.
- No drilling or hot work required.





### Deviation

Mist Air Dust Suppression System is a Commercial Packaged off the Shelf Solutions (COTS) which is then adapted to satisfy the needs of the purchasing organisation, rather than the commissioning of a custom-made solution. This reduces time and cost required in designing and building bespoke systems. Standard components of the product cannot be changed to a custom-made solution.

Mist-Air prevents dust issues effectively using the minimum amount of water in the form of Dry Fog which is controllable along the whole length of the building.

The standard system is well proven over 40 years and installed in over 5500 sites Worldwide for the control of dust and odours in sites as varied as EFW, waste recycling sites, brick factories, power stations, mining, quarries. etc.

The customer must satisfy himself that the product as offered satisfies his requirements.

### [mist-air® Terms and conditions](#)

This quotation is submitted and valid only subject to the following conditions. By ordering this system it is understood by the purchaser, that their own terms do not override these terms stated in this quotation.

### Layout of equipment

The layout of the fans and manifolds as shown on the sketches in the quotation form the basis of this quotation. Any deviations requested by the customer after the order has been place, which involves extra time and materials to install will be additionally charged for.

Alterations requested by the customer to the layout as agreed, will not be undertaken without a signed variance form signed by the customer.

### Installation

Every effort is made by our installation engineers to work flexibly and in harmony with your organization, However, this quotation does not include working at weekends or working before 7am or later than 8pm.in the evening, unless by prior written agreement.

The customer must stop machinery and operations when necessary, during the installation to enable our Engineers to safely install the equipment as agreed during normal working hours.

Our engineers must not be prevented from working on the agreed installation dates. The work will be completed much faster if access is granted to the areas they need to get to.

Pipe and cable runs are securely attached to *existing* cable trays, girders, beams or suitable machine structures, using steel beam clips and plastic cable ties. These have proved durable and secure on over 5000 installations over a 20-year period.

Different fastenings or cable tray requested by the customer will be additionally charged for and must be specified prior to installation to allow enough time for delivery to site.

After the system has been commissioned, return calls for alterations, swapping jets, or general maintenance other than failures due to faulty materials or poor workmanship will be additionally charged for.



If we are unable to test and commission the system when the system has been installed because of failure to provide access, or have water or power available, the return call to test and commission will incur an additional charge.

### **Electrical**

Our electrical equipment is tested prior to delivery to site, and cable runs, and connections are subsequently Tested during installation.

All our tests are done after the isolator supplied which must be installed by your own electrician, who will have carried out relevant electrical testing to the required standards from your main supply to that isolator.

Your electrician must do the final connection from the Base Unit cable to the isolator box during installation so that our engineers can commission the system before leaving site...

Mist-Air Engineers are trained and competent to install, test and commission the pre-manufactured equipment, having competently installed thousands of installations, assemblies and systems, complying with the electrical installation act BS 7671 Amendment 2 Amended to 03/04 and have been trained to use Calibrated MEGA test equipment to ensure the system is tested and complies with the required standards.

Should your site or electrician wish to impose additional electrical tests or not supply an electrician to do the final connection from the isolator to the Base Unit, then an electrician will be hired at your cost to do this final connection and test.

Additional site rules in variance with EU standards involving fitting additional electrical control equipment must be done by the customer at their own cost. If this causes damage to the Mist-Air equipment or causes irregular operation the warranty will be null and void.

Any delays in commissioning, caused by carrying out these additional procedures, will result in additional charges for waiting time, hired in equipment, and additional expenses, for hotels, food etc.

Wiring is SY sheathed cables unless alternative specification is requested prior to installation to allow time for delivery to site.

Fans fitted in the roof areas, do not have finger guards fitted unless specifically specified by the customer prior to ordering the system. Finger guards are fitted as standard only where they can be reached without the aid of a cherry picker. Fans are not isolated from the Base Unit unless specifically requested as an optional extra.

### **Services to be provided by the customer**

The services below must be provided as requested in the quotation, prior to the installation engineers arriving on site.

Delays caused by these services not being provided on time will result in additional charges, particularly if it requires them to return to site later to connect and commission the system, as this is very disruptive, time consuming, and involves the re-hiring of access equipment and almost doubles our costs.

### **Power**

The customer must provide a wall mounted electrical isolator next to where the Base Unit will be sited. 380- 415v three phase and neutral 16 amp per phase.



**Water:**

The customer must provide a potable water supply to the Base Unit, not less than 3 bar pressure .  
Low pressure will necessitate a booster pump to be fitted, otherwise there will be insufficient pressure of water to the header tank, and this will keep running dry.

**Dirty or contaminated water**

This will require an additional UV filter to protect against Weill's Diseases plus a self-cleaning media filter at extra cost to remove the solids from the water.

**Hard water**

If the water supply is unusually hard , the customer must inform us prior to installation, then a salt-based water softener can be fitted. Mist-Air can supply and install this at additional cost.

We can provide all of these at additional cost, but this must be specified when ordering the system as additional components will need to be bought to site and return visits are chargeable.

**Drain**

It is wise to install the Base Unit in a position where it will not damage anything in the unlikely event of a leak or when changing filters.

**Documentation**

Prior to each installation Mist-Air shall provide to the Customer, the following documents:

- Standard Mist-Air Company health and Safety policy.
- Standard Risk Assessment
- Standard Method statement
- Insurance details
- Copies of CSCA & IPAF & PAL certificates
- There will always be at least one trained First Aider on site during installation and servicing.

After installation a USB memory stick will be supplied, containing

- A generic wiring diagram of the base unit,
- Base unit layout
- Exploded parts diagrams,
- Part list
- CE certificate,
- Servicing procedures.
- Legionella prevention measures.
- Details of odour control and Insecticide Chemicals including COSHH sheets
- Service contract



**CE** The system as supplied to yourselves comprising of the Base Unit and Fans assemblies which have been designed, built, and tested in our factory to the following standards: -

According to the following directives:

|   |  |   |
|---|--|---|
| ✓ | PLC Software                             | EN 61131  |
| ✓ | Electrical switchgear                    | EN 61439-1, EN 61439-2 and EN 61010   |
| ✓ | Relay safety circuits                    | EN 62061  |
| ✓ | Panel build                              | EN60204-1   |
| ✓ | Pumps                                    | UNI-EN 29001 1988   |
| ✓ | Design Construction & testing            | BS7671, (EU) No 305/2011  |
| ✓ | Machinery Directive                      | 2006/42/EU  |
| ✓ | Energy related products ErP              | 2009/125/EC   |
| ✓ | Electromagnetic compatibility guidelines | 1992-(S.1.1992/2372) EC-electrical.89/363/CE. 2001 ETS 300 683,1997<br>EN 301 489-03 V1.31 : EN 55022<br>EN61000-4-2. EN61000-4-3   |
| ✓ | Chemical dosing pump                     | (EMC) 2014/30/EU Electromagnetic compatibility.<br>93/68/CEE Variation of electromagnetic compatibility.<br>2014/35/EU Low voltage directive.   |
| ✓ | Solenoid coils                           | 2002/95/EC (RoSH) 2002/96/EC (WEEE)   |
| ✓ | Insulation material                      | BS EN ISO 14001:2015  |
| ✓ | Electrical motors                        | IP65. 2002/95/EC (RoSH). 2002/96/EC (WEEE)  |
| ✓ | Circulation hose                         | DIN 20 022 Pt.1 DNC Cert # P-9789 Min burst press. 17,980 psi   |
| ✓ | Fan units                                | EN 60335-1, EN 50366, EN 55014-1, EN 61000-3-2  |
| ✓ | Heaters                                  | EN 55041-2, EN 61000-3-3, EN55014, EN60555-2, EN60555-3   |
| ✓ | Power isolation device                   | IEC 60364-4-41  |
| ✓ | Electric cables                          | SY/NR ECC # 23400. RoSH (2002/95/EC) Compliant Min. 2.5mm <sup>2</sup><br>2000/95/CE 27/01/2003. Restriction on the use of hazardous substances (RoSH)<br>2002/96/CE 27/01/2003. On the waste from electrical and electronic equipment (WEEE)<br>2003/11/CE 06/02/2003. relating to restrictions on the marketing and use of certain dangerous substances and preparations.<br>EN 50575 |

All components are over engineered rather than built to a cost.

E.g. Circulation hoses are tested to 17,000psi. Whilst operating at a much lower pressure.

All wetted parts are 316 or 304 stainless steel or nonferrous material to prevent any corrosion developing within the entire system.

#### HEALTH & SAFETY REGULATIONS (UK)

The construction (design & management) regulations 2015

Lifting operations and lifting equipment regulations 1998

Control of substances hazardous to health regulations 2002 COSHH

Manual handling operations regulations 1992

The provision and use of work equipment regulations 1998





### **System description and operating limitations...**

#### **Dust control.**

Mist-Air is designed to remove respirable dust from the air space and help prevent flash explosions. It achieves this by meeting the fine dust particles as they form and make them sink so they don't stay in the air. These sinking particles will of course land on the first obstruction they meet. Large quantities of dust forming quickly, i.e. tipping biomass etc. into hoppers, will require more space and time to achieve this.

Mist-Air is not a total panacea. It doesn't make large dust clouds disappear or clean up mechanical spills but acts like an invisible barrier, preventing the movement of fine dust away from the working area and preventing it migrating from buildings.

Detrimental effects on the fog due to extraction fans and negative pressure systems operating in the same area, is the responsibility of the customer and is not in the remit of Mist-Air, as we have no control over systems installed by others.

This quotation contains a drawing showing the approximate layout of the plant, to which we add the position of fan assisted manifolds and static manifolds based on experience of what we consider will achieve best dust suppression for the customer.

The customer has the opportunity at this point to ask for changes if he doesn't think the layout is correct or feels that extraction fans will have a negative effect, so that the drawing and the quotation can be altered to reflect these changes. Movement of manifolds after the installation is chargeable.

After installation, the customer may want to decrease or increase the number of nozzles in a manifold to produce the desired amount of fog for each area, this is the responsibility of the customer as is the replacement of dirty or broken nozzles. This is not covered under warranty.

#### **Humidity**

During operation, this system does not normally cause any wetting to floors or stock, but during times of high humidity, i.e. Precipitation, early mornings, thunderstorms, the air can reach up to 98%, humidity therefore adding mist to this saturated air may cause dampness and condensation to floors, and cold metalwork in unheated buildings.

The system is fitted with intermittent timers for each circuit, so in times of high humidity it makes sense to set the system to deliver fog intermittently to keep just enough humidity in the air without causing dampness.

Fog suppression is not a precise art, and its effect can be altered from day to day by the fluctuations in dust volumes, temperature, humidity, and wind speed / direction.

It may be necessary to increase or decrease the number of nozzles fitted in the fans as the seasons change.

If static manifolds are fitted at conveyor transfer points, the belt may become wet if there is no material travelling on the belt, this can be an issue if the conveyor signals are used to turn the misting manifolds on automatically.



#### **Cooling**

In hot weather the mist absorbs latent heat and gases within the building, which then rises to the eaves. Suitable ventilation must be provided in the eaves, to allow the hot mist to escape and evaporate, thereby allowing evaporative cooling. Failure to do this may turn the building into a Sauna bath and causing the air to become heavy and contaminated, particularly if there are heavy fumes in the air from machinery, or brick kilns etc. *This is only applicable to fume laden air i.e. brick factories and foundries.*

#### **Frost protection**

The Base Unit is frost protected. However the pipe work and misting manifolds can be traced, heated and insulated at additional cost, unless already included in this quotation.

#### **Warranty**

The system carries a parts warranty for 2 years, also a 20-year corrosion warranty.

The system requires servicing which Mist-Air can provide. Which includes flushing the complete system with biocide to help prevent water borne diseases such as Legionella or Weils disease

Fans and manifolds may need regular cleaning in dirty conditions, failure to do so may result in poor performance and dripping causing damp patches directly below the fans.

Failures or poor performance caused by lack of maintenance is not covered by warranty. Unless the customer maintains the system to keep it clean, failures will inevitably occur which are not covered by warranty.

Warranty excludes: - Mechanical damage, blocked and broken nozzles, broken fan blades, frost damage, failure caused by blocked water filters, lack of servicing.

No guarantee is given or implied regarding specific levels of dust or odour suppression achieved or achievable, as day to day variation of materials, humidity, wind, operating procedures, i.e. doors left open, are outside our control can influence the operation of the system.

By ordering a system from Mist-Air it is understood that you have agreed to the above terms and conditions.



**Figure 7-2: Emission Complaints Form (Example)**

| <b>Emission Complaint Report Form</b>                            |  |                                  |  |         |  |
|--|--|----------------------------------|--|---------|--|
| Time and date of complaint:                                      |  | Name and address of complainant: |  |         |  |
| Telephone number of complainant:                                 |  |                                  |  |         |  |
| Date of emission:  |  |                                  |  |         |  |
| Time of emission:  |  |                                  |  |         |  |
| Type of emission:  |  |                                  |  |         |  |
| Location of emission (if not at above address):                  |  |                                  |  |         |  |
| Weather conditions:  |  |                                  |  |         |  |
| Temperature:   |  |                                  |  |         |  |
| Wind strength:   |  |                                  |  |         |  |
| Wind direction:  |  |                                  |  |         |  |
| Complainant's description of emission:                           |  |                                  |  |         |  |
| Are there any other complaints relating to the site or location? |  |                                  |  |         |  |
| Any other relevant information:                                  |  |                                  |  |         |  |
| What was happening on site at the time of the emission?          |  |                                  |  |         |  |
| Action taken:  |  |                                  |  |         |  |
| Form completed by:   |  | Date:                            |  | Signed: |  |

[www.wrapcymru.org.uk/ccp](http://www.wrapcymru.org.uk/ccp)

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