ODOUR MANAGEMENT PLAN

Next Review 06/24

1. INTRODUCTION

This Odour Management Plan (OMP) has been developed to define the measures Stormking Plastics will take to control odours from its production facilities, Site A, Amington Point, Sandy Way, Tamworth, B77 4ED, Site B, Unit 25, Sandy Way, Tamworth, B77 4DU & Site C, Unit 16, Sandy Way, Tamworth, B77 4DT. In addition to defining the control measures, this OMP also includes information on how the Company will respond and manage abnormal and emergency odour situations.

The OMP has been written with reference to the Environment Agency's guidance for odour management and the overarching guidance *How to Comply With your Permit*. Consistent with the guidance provided in the above documents this OMP is structured as follows:

- to provide an overview of the operations at the site;
- identify the sources of odour from the Company's activities;
- identify the sensitivity and location of potential receptors to odour pollution;
- describe the management controls to minimise odours; and
- to provide for contingency and emergency controls.

This OMP applies to all areas within the permit boundary as shown on drawing no. SP01 attached.

2. SITE AND PROCESS DESCRIPTION

2.1 Location

The sites are located on Amington Industrial Estate, Tamworth, Staffordshire (NGR Site A,423848 302796. Site B 423893 302930. Site C 423710 303054). The sites sit to the east of Tamworth town centre, in an area of mixed land uses which include, industrial, commercial, and residential.

2.2 Process Description

Stormking produce canopies, bay window roofs, dormer window roofs and decorative enhancements from Fibre Reinforced Plastic.

The installation is located in three units (Referenced at site A, B & C) on the Amington Industrial Estate. The process involves the use of pre-formulated gel coats and resins that contain styrene. The process involves the polymerisation or co- polymerisation of more than 100 tonnes of styrene in any 12-month period.

The process operated at Stormking can be divided into two production techniques; closed moulding method or open moulding. The resulting component is made of Glass reinforced composite matting which gives the product its rigidity and strength.

2.2.1 Open Moulding

Moulds are cleaned and prepared with a release agent and taken to a spray booth to have the colour and gel coat applied in the same way as the closed mould processes. When the gel coat has cured the mould is taken to another spray booth where chopped glass fibre, resin and catalyst are carefully hand sprayed onto the mould. The wet GRP is then consolidated by compressing it and removing the air by hand with rollers. The GRP is then allowed to cure before the product is removed from the mould. Any styrene emissions from the curing process will be released into the internal factory atmosphere.

2.2.2 Closed Moulding

Moulds are cleaned and prepared with a release agent and taken in separate halves to a spray booth to have the colour coat, known as Gel Coat applied. The Gel Coat is applied using an air-less spray gun that automatically mixes a Catalyst (MEPK) to the material to promote polymerisation as it is

being sprayed. The two mould halves are left to cure completing the polymerisation process. The Gel coat is supplied in a 225 litre drum

Once cured both mould halves (top and bottom tools) are then moved to the injection process where the bottom tool only has dry glass fibre matting laid around the profile. The halves are put together (top lowered onto bottom) into the "closed" condition. A vacuum pipe is connected to a port and vacuum applied to withdraw the entrapped air.

After connecting a special feed pipe arrangement, the vacuumed cavity is now injected with a pre-formulated filled resin, which is mixed with a catalyst as it is being injected.

Curing takes place over the next 30-40 minutes with the mould still in its closed position. This production method prevents any styrene being released into the atmosphere during the polymerisation process, as it is encapsulated within the component.

The two mould halves are then released by disconnecting the vacuum and the component can then be lifted out of the mould.

The closed mould method of production is undertaken predominantly at Site B.

Di-isocyanate foam application

Stormking Plastics manufacture architectural Glass Fibre products to supply directly to UK based construction sites.

These products by design, are required to be energy efficient and are therefore insulated by the application of a foam barrier on the inside of all external faces to prevent any unwanted heat loss.

The foam is applied by a low volume non-atomising pump spray process which dispenses the two components, a resin and a hardener through a pneumatically controlled mechanical pump spray system.

The two chemical components making up the foam are purchased from a proprietary manufacturer and are delivered in sealed IBC's (International Bulk Containers) of 1000 litres capacity. They are then stored in a bunded compound approximately 20 metres from the production factory and are covered by UV shrouds to prevent any undue deterioration through direct sunlight.

An appropriate regime and spill kit is on hand at the point of unloading and storage should there be any damage to the sustained to the container.

When required for production the IBC's are transported by Forklift truck into the production facility and are placed on metal stands to aid the feed by gravity to the pumps.

It is then and only then that the lids to the containers are opened by releasing a "ring pull" breathing hole, thus preventing the implosion of the IBC's as the material is drawn off through a bottom entry tap for use in the process.

One of the IBC's is required to have a moisture trap fitted to the breather to prevent moisture entering the resin causing crystallisation. This also aids suppression of any emissions.

The containers remain sealed, other than the breathers, throughout the process.

Once depleted the IBC's are drained of any remaining dregs and the lids refitted before being transported to a holding area awaiting collection for recycling and re-use.

Any emissions created during the spray foam process are controlled by a dry-back extraction system which has been designed to filter out any particulates and minimise any pollutants reaching the atmosphere.

The process is monitored firstly on a daily basis by a pre-start up inspection regime and secondly by an annual spray booth stack emission test carried out by an external laboratory.

2.3 Potential Receptors

A summary of local receptors is provided in the Table 001:

2.4 Potential Sources of Odour

Potential odour sources from operations are identified in Table 002; abnormal and emergency conditions giving rise to potential odour issues are identified and discussed in Section 4.

2.5 Risk Assessment

This plan is supported by an environmental risk assessment (Ref. RA SK0069) for the site. The risk assessment specifically for odour is repeated at Appendix A to this document. It identifies sources of odour under normal, abnormal and emergency conditions, and describes the management controls in place.

Table 001: Summary of Receptors

Receptor	Type	Distance to site boundary	Direction form Site
Housing Estate [A]	Residential	50m	S
Britvic [A]	Warehouse	20m	E
Marina Café [A]	Retail	140m	E
Guardian Insulation [A]	Industrial	0m	W
Offices [A]	Commercial	0m	W
Polesworth Garage [B]	Commercial	0m	N
Apollo Chemicals [B]	Industrial	0m	W
AW Lumbs [B]	Warehouse	20m	E
Training Centre [C]	Municipal	0m	S
Strongs Plastics [C]	Industrial	0m	N
Aegis Water [C]	Commercial	50m	W
Crown Garage [C]	Commercial	50m	W
Apollo Chemicals [C]	Industrial	70m	NW

Table 002: Potential Odour Sources

Source Description	Potential Odorous Materials	Location	Potential Release Points
Raw Materials	Bulk storage of materials: Resins, Gelcoats, Solvents	Internal warehousing and storage	• Open doors on receipt of delivery • General internal ventilation
		Yard	• Open direct to atmosphere
Production Processes	Various products and associated vapours from production	Internal production floors	• Spray Up process ventilation
			• Hand Lay Up process • ventilation
			• Injection process ventilation
			• Solvent Storage containers
Waste	Process waste	External in IBC's	• IBC if not contained
		External in RoRo containers	• Open direct to atmosphere

3. OPERATIONAL CONTROLS FOR ODOUR MANAGEMENT

Following from the identification of potential sources of odour, this section of the OMP defines the operational controls the Operator uses to manage the activities it undertakes on its site to minimise and manage odours. This section follows the systematic approach defined in the Environment Agency H4 Odour Management guidance through consideration of the following controls to manage odour at the earliest opportunity in the production processes:

- Managing Inventory – (Receipt and management of odorous materials)
- Controlling Evaporation – (Transfer of odorous chemicals to air)
- Containment and Abatement – (Containment of contaminated air / end of pipe treatment)
- Dispersion – (Transport and dispersion)
- Reducing Impacts – (Engaging neighbours / responding to complaints)

3.1 Summary of Controls

The following table (003) details the controls applied to potential odour sources identified above. A description of the controls follows the table.

Table 003: Summary of Operational Controls

Source Description	Potential Odorous	Potential Release Points	Op Control Techniques
Raw Materials	Bulk storage of materials: Resins, Gelcoats, Solvents	• Open doors on receipt of delivery • General internal ventilation	• Managing Inventory • Dispersion • General Operational Controls
		• Open direct to atmosphere	
Production Processes	Various products and associated vapours from production	• Spray Up process ventilation	• Containment • Dispersion • Control of Evaporation • General Operational Controls
		• Hand Lay Up process • ventilation	
		• Injection process ventilation	
		• Solvent Storage containers	
Waste	Process waste	• IBC if not contained	• Containment • Dispersion • Control of Evaporation • General Operational Controls
		• Open direct to atmosphere	

3.2 Managing Inventory

The majority of the raw materials received and stored on the site are not considered to be odorous or at risk of becoming odorous, for example glass fibre etc. However, the following measures are applied:

- All raw materials are subjected to quality assessment prior to acceptance to ensure that the materials are received in a suitable condition for use and have not become malodourous.
- Raw materials which are inherently odorous, such as resins, gelcoats & solvents are received in the same manner, as palletised sealed plastic and metallic containers
- At the point of delivery all materials are loaded directly from the delivery vehicle

into an internal storage area or directly to an external storage bund.
- Stock rotation is in place to ensure that oldest products are used first to avoid raw materials going out of date.
- Conditions within the factory are optimised for the storage of raw materials, avoiding direct sunlight onto raw materials and keeping temperatures under control.

3.3 Controlling Evaporation

Controls in place to minimise the transfer of odours to air are as follows:

- All solvents are stored in designated areas which do not receive direct sunlight.
- All solvents, resins & gels are stored in sealed containers.
- All solvents when in use are stored in lidded containers and operatives are trained to keep lids closed immediately after use.

3.4 Dispersion

The venting of the air from the production floors (providing general ventilation) occurs via several extraction systems, Wet back spray booth systems are vented externally & subject to annual stack emissions and a weekly program of Legionella testing due to the presence of water contained in tanks. Further extraction is via a drywall system in the spray foam booth again subject to emissions testing.

3.5 Reducing Impacts

The operator has established channels of communication for the local community. Any member of the community can contact the company by post, email, online complaint, in person or by telephone. Any complaint received is managed in accordance with the Operator's complaints management procedure as follows:

- All complaints received, irrespective of how the complaint was communicated is entered into the Operators call management software;
- The software forwards the complaint to the appropriate manager who will review the complaint and determine the relevance of the complaint in the context of the potential odours from the site;
- If it is determined that the complaint is unlikely to be due to odours arising from the factory no further action is taken;
- Where it is deemed likely that the source of the odour complaint is related to the potential sources of odour at the factory, further investigation work is undertaken.

In keeping with EA guidance, this investigation will require the following information to be obtained from the Complainant:

- The time and date of the complaint
- The location of the Complainant (e.g. postal address or grid reference)
- The weather conditions, temperature, wind direction and strength
- The Complainant's description of the issue including a description of the odour,

its intensity (based on the options provided in the EA guidance), the duration of the odour
- Any further information the Complainant may be able to provide of the source of the alleged odour.

The investigation will then serve to identify the source of the odour, its intensity and to define what action, if any is required to mitigate the odour. This may require a period of monitoring. However, the level of investigation and subsequent remedial action should be proportional to the duration and impact of the odour.

Should the investigation of an odour complaint result in corrective action being necessary, then this is completed and the result of the action undertaken communicated to the complainant. The call management software provides the medium for recording all the details of the complaint, subsequent investigation, and outcomes. Where necessary, monitoring may be required to assess the effectiveness of the corrective action implemented.

3.6 General Operational Controls

In addition to the systematic consideration given to the items above to minimise odour as early as possible in the production processes, the Operator undertakes additional measures to minimise odour from the sources identified in sections 2 & 3. These include:

- Daily cleaning regimes are in place to periodically remove product which is not required from the production areas.
- A centralised secure storage area for production wastes which is frequently serviced by waste contractors
- The provision of equipment for the cleaning of the gradual accumulation of waste in the waste management area
- Regular removal of waste fluids stored in IBC's from the site by sub-contractor.

4. ABNORMAL AND EMERGENCY SITUATIONS

In the event of an abnormal or emergency situation arising, the actions defined in Table 004 below, should be taken to minimise the odour impact from the event and ensure that odour conditions are returned to the pre-event conditions as soon as possible.

Table 004: Emergency Response Actions

Abnormal / Emergency Scenario	Action required to minimise risk of odour from abnormal / emergency situation
Odours arising from spillage of odorous raw material (e.g. spillage of resin or gelcoat)	• Respond to the spill in accordance with the spill response procedure, using the spill kits available on site. • If it is likely that the odour will cause prolonged offence to a local receptor inform the local authority. • Following clean-up - assess if further monitoring is required. • Review response to the incident, identify root causes, and implement any improvements identified to reduce risks of reoccurrence.
Odours arising from release of effluent (e.g. through accidental damage, overflow, deterioration of storage tank, pipeline rupture, etc.)	• Shut down pumps on system and isolate sumps and the storage tank. • Use spill kits to contain the spillage where possible. • Contact waste contractor to schedule collection of residual effluent in tank. • Inform water authority of incident and diversion of effluent to combined sewer • If it is likely that the odour will cause prolonged offence to a local receptor inform the local authority. • Carry out clean up and assess if further monitoring is required. • Review response to the incident, identify root causes, and implement any improvements identified to reduce risks of reoccurrence.

5. MONITORING PLAN

Odours arising from the production of GRP although distinctive are considered to be relatively inoffensive. Under normal conditions odour is not anticipated to occur at a concentration or intensity which would cause offence and as such the Company will undertake monitoring at intervals representative to the risk of odour causing offence being increased. Typically, this will be in response to an emergency situation or as part of the investigations following a complaint, and monitoring will be undertaken to assess the

impact of the odour on the receptor. The following monitoring techniques will be employed.

5.1 Sniff Testing: Sniff testing is accepted as a best practice technique for monitoring odours. Due to the adaptation of the sensitivities of staff working at the site to odours from the site, site staff may not be able to objectively assess the levels of odour. It would also not be suitable to employ anyone who is suffering from a cold, sinusitis or a sore throat to undertake the testing as these conditions may cause the odour to be underestimated.

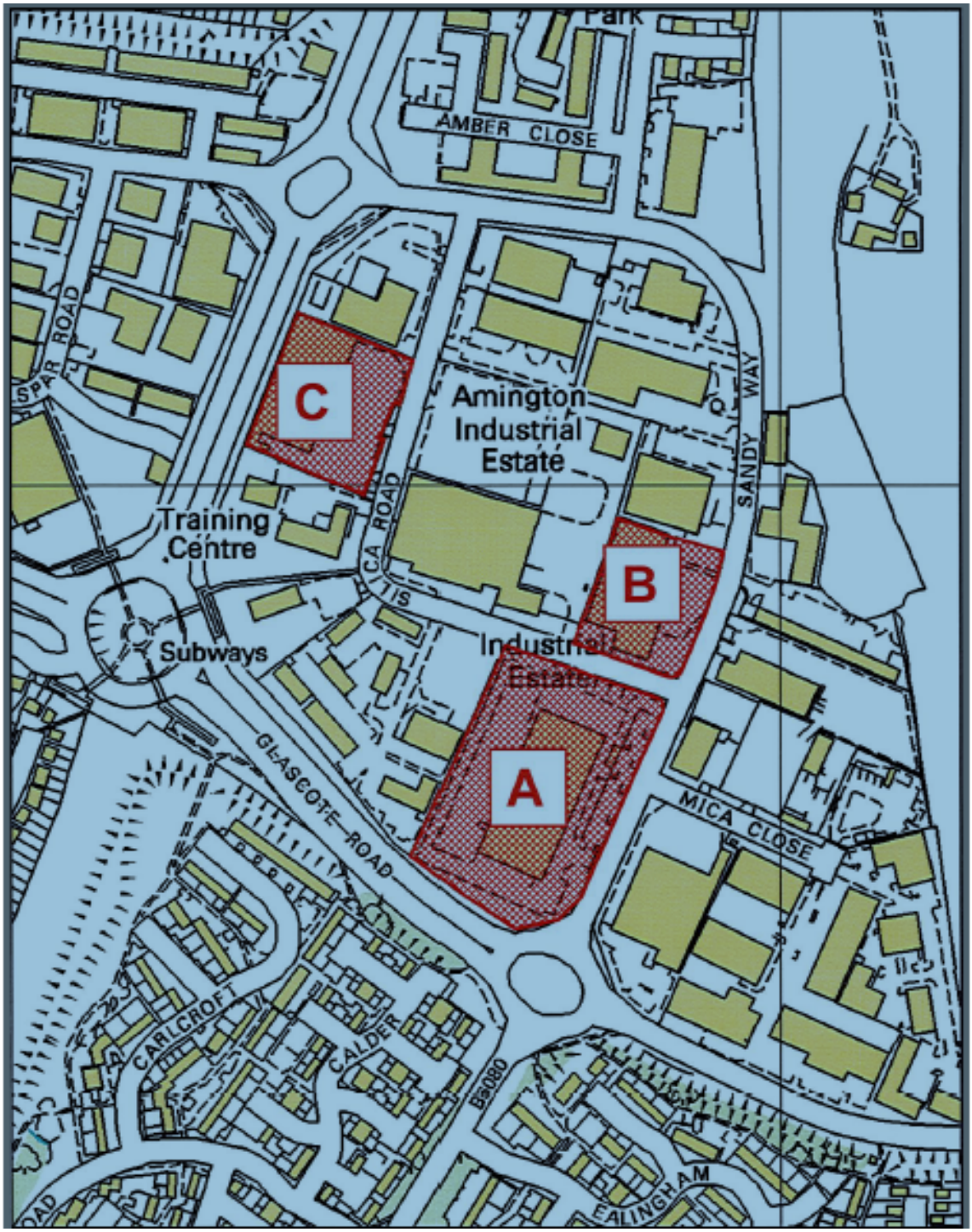
As the approach to monitoring is in response to a complaint or following an emergency situation, the location of the testing will be relative to where the complaint was received from, or the emergency even occurred, in relation to the site. For complaints, the testing will begin at the location where the odour was detected and a route followed back towards the Operator's site in an attempt to locate the source of the odour.

The results of sniff testing will be recorded, and will include:

- The time and location of the test
- The weather conditions
- The temperature
- Wind strength and direction
- The intensity of the odour (On a scale from 0- no odour to 6 extremely strong odour)
- The duration of the test and the nature of the odour in this period (intermittent/persistent)
- What does the odour smell like?
- The sensitivity of the receptor
- Potential sources of the odour (low – footpath or road, medium (e.g. industrial, or commercial workspaces), high (e.g. housing, pub/hotel etc.)).
- Any other comments or odours

Following any remedial action a subsequent sniff test will be conducted to ensure that the actions have been effective in reducing odour.

5.2 Complaints Monitoring: The management of complaints will be handled in the manner outlined under Section 3.5 of this document. Analysis of complaints and assessment of trends will be made where warranted.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