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# Non-hazardous and inert waste: appropriate measures for permitted facilities

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Contents

# 6. Emissions control

These are appropriate measures for emissions control for a regulated facility permitted to store, treat or transfer (or both) non-hazardous and inert waste.

1. You must identify, characterise and control emissions from your activities that may cause pollution.

## 6.1 Enclosure within buildings

1. Enclosing activities within buildings can be an appropriate measure for preventing and minimising

emissions of pollution, given that an appropriately designed building will reduce a range of types of pollutants, in particular, noise, dust and odour. A partially enclosed building may be an appropriate measure on its own, or together with other appropriate measures, depending on the site-specific circumstances.

2. If your waste treatment activities are likely to cause (or are causing) significant pollution at sensitive receptors which cannot be addressed by alternative measures, then you must carry out that waste treatment activity within an enclosed building.

3. You must also carry out non-treatment activities, such as storing and transferring waste (including loading and unloading) in enclosed buildings if these activities are likely to cause (or are causing) significant pollution at sensitive receptors which cannot be addressed by alternative measures.

An enclosed building means a construction designed to provide sheltering cover and minimise emissions of noise, particulate matter, odour and litter. It must be enclosed on all sides. Its doorways must be as small as practicable and covered with fast-acting doors which default to the closed position. You must keep its windows closed unless you need to open them for ventilation. Dirty (process contaminated) air must pass through appropriate abatement before being emitted from the building.

4. Material transfer and storage systems and equipment (for example conveyors, hoppers, containers and tanks) can extend outside the enclosed building so long as they are also fully enclosed.

5. You must regularly assess your enclosed building’s integrity. You should consider using BS EN ISO 9972:2015 to demonstrate building containment. This method is based on fan pressurisation. You should carry out a smoke test at least annually and where potential faults in building integrity are likely to be causing pollution such as odour.

6. Enclosed buildings must be ventilated to provide a safe working environment for employees. Your building's ventilation system must be properly designed and effective in order for the building to provide adequate containment and prevent fugitive emissions and unacceptable noise. The engineer designing the ventilation system must be appropriately qualified. To validate the size of supply points (louvers), and the volume of dirty air that needs to be extracted, the engineer must understand and consider:

- the needs of the occupants working in the building
- heat release
- the volume of moist gas emissions that will be generated

7. The air inside the enclosed building must be maintained under negative pressure, or you must install a localised extraction system that extracts dirty air from sources of pollution within the building. Sources that could potentially benefit from localised extraction include:

- shredders and trommels
- waste loading and unloading areas
- odorous stockpiles

8. You must regularly assess the integrity of your building for damage that could result in fugitive emissions, including noise breakthrough. You must prevent and minimise damage by implementing a maintenance programme.

9. You must implement measures to control door opening, to make sure that the engineered ventilation system works as effectively as possible. It must direct emissions to the abatement system, rather than letting them escape as fugitive emissions through doors or windows. If you use negative pressure, it must be maintained when doors are opened, and you must monitor the pressure to demonstrate its effectiveness. Additional measures to minimise fugitive emissions may be required in some cases, for example installing an airlock entry system.

10. To reduce emissions of noise and vibration, the building must have an appropriate minimum surface density. You must install acoustic seals on doors and windows, following advice from an acoustic specialist.

## 6.2 Point source emissions to air (channelled emissions)

1. You must use appropriate measures to make sure that you collect, extract and direct all process emissions to an appropriate abatement system for treatment before release.

You must identify the main chemical constituents of your facility's point source emissions as part of your inventory of emissions to air. You must include the speciation of volatile organic compounds (VOCs) if you have identified them in the inventory and it is practicable to do so. You must characterise your emissions sufficiently to make sure that your chosen abatement systems are effective.

2. You must make an assessment of the fate and impact of the substances emitted to air, following the Environment Agency's risk assessment (https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit) guidance.

3. To reduce point source emissions to air (for example dust and odorous compounds) from the treatment of waste, you must use an appropriate combination of abatement techniques. Or you must demonstrate to us that your alternative abatement is equally effective. The appropriate combination of abatement techniques would include one of more of:

- adsorption
- biofiltration, biotrickling or bioscrubbing
- cyclone
- fabric filter
- water injection (into a shredder)

4. You must assess and design vent and stack locations and heights to make sure dispersion capability is adequate and noise pollution is

prevented. You may need to carry out dispersion modelling (https://www.gov.uk/guidance/environmental-permitting-air-dispersion-modelling-reports) to establish whether the height of the vent or stack allows emissions to disperse appropriately, preventing any impacts on receptors.

5. Where monitoring is required, including for odour, you must install suitable monitoring points which meet the sampling standard (https://www.gov.uk/government/collections/monitoring-emissions-to-air-land-and-water-mcerts) for the relevant pollutants.

6. You must have procedures to make sure that you correctly operate, monitor and maintain abatement equipment.

7. Your monitoring should demonstrate the effectiveness of the abatement, so that you can take preventative or corrective action as necessary.

8. You should implement contingency measures for abatement system down-time and for any abnormal events, for example biofilter media change. These should include suspending operations until the site is back under control, or having standby abatement available.

9. You should design and operate abatement systems to minimise water vapour plumes.

## 6.3 Fugitive emissions to air

1. You must use appropriate measures to prevent and minimise fugitive emissions to air, including dust, mud and litter (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#dust-mud-and-litter), odour and noise and vibration (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#odour).

2. You must use your waste pre-acceptance, waste acceptance and site inspection checks and procedures to identify and manage wastes that could cause, or are causing, fugitive emissions to air. When you identify any such wastes you must:

- take appropriate risk-assessed measures to prevent and control emissions
- prioritise their treatment or transfer

Where necessary to prevent fugitive emissions to air from the storage or handling of wastes, you should use a combination of the following measures:

- use fully enclosed material transfer and storage systems and equipment outside buildings, for example conveyors, hoppers, containers, tanks and skips
- store and handle the waste within a suitably enclosed area (for example bays), a building or enclosed building
- keep doors closed except when access is required
- keep enclosed buildings and equipment under adequate negative pressure with an appropriate abated air circulation or extraction system, locating air extraction points close to potential emission sources
- use fast-acting or ‘airlock’ doors that default to closed

3. You must have an appropriate, regular maintenance programme covering all buildings, plant and equipment. It must help prevent emissions or minimise them. Your maintenance programme must include:

- a leak detection and repair programme to promptly identify and mitigate any fugitive emissions of organic compounds from treatment plant and associated infrastructure (for example, pipework, conveyors or tanks)
- regular inspection and cleaning of all waste storage and treatment areas and equipment (including conveyor belts) to avoid large scale contamination activities
- preventing plant and equipment from corroding (for example, conveyors or pipes) – including selecting and using appropriate construction materials, and lining or coating equipment with corrosion inhibitors

4. You should monitor and log weather conditions – temperature, wind speed and direction, and describe any precipitation (for example none, drizzle, heavy rain, snow). You can use this information to identify when dispersion conditions are poor (that is, periods of warm, calm weather with wind blowing towards sensitive receptors). You can also use it to inform decisions to implement additional short-term pollution control contingency measures. If you have a weather station you should position it carefully, for example not placing it in between buildings. There is guidance in the World Meteorological Organization's Guide to Meteorological Instruments and Methods of Observation (https://library.wmo.int/index.php?lvl=notice_display&id=12407#.YFsPY17OXIU).

5. Relying on dispersion and wind direction to minimise pollution at sensitive receptors must be a last resort and you must not use it instead of measures that prevent and reduce pollution at source.

**Other measures for dust, mud and litter**

6. If your activities are likely to produce dust and particulates, mud or litter that could cause pollution at sensitive receptors, or if such pollution has been substantiated, you must implement and regularly review a dust, mud and litter management plan (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#dust-mud-and-litter). You must do this following our guidance. Your dust, mud and litter management plan must explain how you will prevent and minimise emissions of dust, mud and litter from your facility.

7. Measures such as litter fencing and micro-netting should be located as close as possible to areas where you load and unload light-weight loose waste, if this activity is done outdoors. You should not rely on fences and screens at the perimeter of your facility to stop litter escaping.

8. Measures such as mist sprays should be located as close as possible to point source emissions of dust, for example at conveyors, trommels, shredders, and at building entrances – except

where this would increase odour from biodegradable waste.

If measures such as using hoses and road sweepers do not prevent mud escaping onto the public highway, you must take further measures and you must consider installing a high pressure wheel wash. Regardless of the measures you use, you must make sure that you minimise water consumption, and that contaminated water does not escape from your facility, unless you can lawfully discharge it.

### Other measures for odour

9. If your activities are likely to produce odour pollution at sensitive receptors, or such pollution has been substantiated, you must implement and regularly review an odour management plan (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#odour-management-plan) following our guidance, which includes H4 Odour management (https://www.gov.uk/government/publications/environmental-permitting-h4-odour-management). Your odour management plan must explain how you will prevent and minimise odorous emissions from your facility.

10. You must reject waste that is highly odorous as part of your pre-acceptance and waste acceptance procedures. This is unless you can handle and treat these wastes within an enclosed building with appropriate odour control measures, including extraction via odour abatement. Otherwise, you should talk to the waste supplier to stop it happening again. You should avoid receiving aged waste, for example by refusing to accept waste from other transfer stations that do not have strict inventory controls and documented holding times.

11. You must make sure that odorous waste arrives at and leaves your facility in covered or enclosed vehicles. Mesh covers are not adequate to control odour. You should minimise how long potentially odorous waste is kept at your facility, in particular under anaerobic conditions. Making smaller stockpiles increases natural aeration, reducing the

risk of anaerobic biodegradation which can cause odour.

12. You should wash empty vehicles before they leave your facility, to remove any residues which may be or become odorous. You must make sure the run-off from this process is contained and lawfully discharged.

13. You should not allow contaminated liquids to pool for long periods of time, as they can be a source of odour. If you do not have a drainage system inside the building that can collect the leachate or dirty water, then you will need other appropriate measures. You should take action to avoid ponding or pooling. Industrial vacuum cleaners can be used to suck up liquids. You should clean any spillages immediately.

14. You must cover odorous or potentially odorous waters or liquids or keep them in enclosed tanks or containers.

15. Using masking agents (for example dry nano systems, ozone systems and ionisation systems) is a way of attempting to disguise an odour problem. If you understand and process wastes efficiently then you will not need to use masking agents. We do not consider this technology an appropriate measure.

### Other measures for noise and vibration

16. If your activities are likely to produce noise or vibration pollution at sensitive receptors, or such pollution has been substantiated, you must implement and regularly review a noise and vibration management plan (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#noise-and-vibration-management-plan). Follow our guidance H3 part 2 noise assessment and control (https://www.gov.uk/government/publications/environmental-permitting-h3-part-2-noise-assessment-and-control). Your noise and vibration management plan must explain how you will prevent and minimise emissions of noise and vibration from your facility.

17. For noise, your noise and vibration management plan must be informed by a noise impact assessment carried out following the methodology of BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’.

18. For vibration, your noise and vibration management plan must be informed by a vibration impact assessment carried out following the methodology of BS 6472-1:2008 ‘Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting’.

## 6.4 Point source emissions to water (including sewer)

1. You must identify the main chemical constituents of your facility’s point source emissions to water and sewer as part of your inventory of emissions.

2. You must assess the fate and impact of the substances emitted to water and sewer following the Environment Agency’s risk assessment guidance (https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit).

3. Discharges to water or sewer must comply with the conditions of an environmental permit and a trade effluent consent.

4. Relevant sources of waste water include:

- runoff from all waste storage and handling areas, including loading and unloading areas
- process water
- condensate collected from treatment process
- waste compactor runoff
- vehicle washing
- washing of containers and vessels
- soil washing effluent
- vehicle oil and fuel leaks
- spills and leaks
- rainwater from bunds around containers and tanks

If you need to treat waste water before discharge or disposal, you must use appropriate treatment techniques. An appropriate combination of treatment techniques, for example, could include silt or solids removal and using an oil separator to manage site drainage.

5. You must segregate uncontaminated water streams (for example clean runoff from roofs) from those that require treatment.

6. You must separate contaminated water streams based on pollutant content and treatment required. For example, you may need to collect and treat separately contaminated surface runoff water and process water.

## 6.5 Fugitive emissions to land and water

1. You must use appropriate measures to control potential fugitive emissions and make sure that they do not cause pollution. See the guidance on emissions to water (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#emissions-to-water) and leaks from containers (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#leaks-from-containers).

2. You must design appropriate surfacing and containment or drainage facilities for all operational areas, taking into account:

- collection capacities
- surface thicknesses
- strength and reinforcement
- falls
- materials of construction
- permeability
- resistance to chemical attack
- inspection and maintenance procedures
- relevant standards of construction
- end use, for example by tracked or wheeled vehicles or vehicle weight

3. Your drainage infrastructure must:

- prevent incompatible wastes coming into contact with each other
- make sure that fire cannot spread

4. You must store and treat all waste on an impermeable surface with contained drainage that meets CIRIA 736 (https://www.ciria.org/ItemDetail?iProductCode=C736F&Category=FREEPUBS) or an equivalent approved standard. The impermeable surfaces must have sealed construction joints. These requirements do not apply in designated areas where the waste being stored or handled does not pose any significant risk of contaminating surface water or ground water. You must appropriately isolate these designated areas from other operational areas so that there cannot be any flows between them. This includes in the event of an accident, for example a fire.

5. You must provide bunds for all tanks containing liquids (whether waste or otherwise) that could be harmful to the environment if spilled. Bunds must meet CIRIA 736 (https://www.ciria.org/ItemDetail?iProductCode=C736F&Category=FREEPUBS) or an equivalent approved standard and:

- be impermeable, stable and resistant to the stored materials
- have no outlet (that is, no drains or taps) and drain to a blind collection point
- have pipework routed within bunded areas with no penetration of contained surfaces
- be designed to catch leaks from tanks or fittings
- have an appropriate capacity
- have regular visual inspections – any contents must be pumped out or otherwise removed under manual control after checking for contamination
- be fitted with a high level probe and an alarm (as appropriate) if not frequently inspected
- have tanker connection points within the bund (where possible), and if not possible you must provide adequate containment for spillages or leakage

- have programmed engineering inspections (extending to water testing if structural integrity is in doubt)
- be emptied of rainwater regularly to maintain the containment capacity

6. All above-ground tanks containing liquids (whether waste or otherwise) that could be harmful to the environment if spilled must be kept on an impermeable surface with contained drainage that meets CIRIA 736 or an equivalent approved standard. You must fit the tanks with alarms and cut-out systems to detect and prevent leaks and spills.

7. You must minimise using subsurface equipment and infrastructure, and decommission it where possible. For subsurface structures, you must:

- establish and record the routing of all site drains and subsurface pipework
- identify all subsurface sumps and storage vessels
- engineer systems to minimise leakages from pipes and make sure they can be detected quickly if they do occur
- provide secondary containment or leakage detection for subsurface pipework, sumps and storage vessels – vessels must be fitted with alarms and cut-out systems to detect and prevent spills when filling
- establish an inspection and maintenance programme for all subsurface structures, for example, pressure tests, leak tests, material thickness checks or CCTV

8. You must provide secondary containment that meets CIRIA 736 (https://www.ciria.org/ItemDetail?iProductCode=C736F&Category=FREEPUBS), or an equivalent approved standard, for all drums and other mobile containers which:

- are greater than 200 litres in capacity and are kept outside
- contain liquids (waste or otherwise) that could be harmful to the environment if spilled

9. You must comply with the oil storage regulations (https://www.gov.uk/guidance/storing-oil-at-a-home-or-business). These apply to non-hazardous wastes such as vegetable and cooking oil, as well as to biofuels and mineral oils.

10. You must provide appropriate buffer storage capacity at your facility to store waste waters, taking into account:

- potential abnormal operating scenarios and incidents
- the nature of any polluting substances and their impact on the downstream waste water treatment plant and receiving environment

You must have appropriate measures to monitor, treat and reuse the water held in the buffer storage before discharging.

11. You must take appropriate measures to prevent emissions from washing and cleaning activities, including:

- containing and directing spray, liquid effluent and wash-waters to foul sewer or collecting them in a sealed system for offsite disposal – you must not discharge them to surface or storm drains
- where possible, using biodegradable and noncorrosive washing and cleaning products
- storing all detergents, emulsifiers and other cleaning agents in suitable bunded or containment facilities, within a locked storage area, or in a building away from any surface water drains
- preparing cleaning or disinfection solutions in contained areas of the site and never in areas that drain to the surface water system or groundwater

12. You must produce and implement a spillage response plan and train staff to follow it and test it.

13. Your procedures and associated training must make sure you deal with spillages immediately. You should follow the manufacturer’s health and safety advice for any products or substances involved.

14. You must keep spill kits at locations close to areas where a spillage could occur and make sure relevant staff know how to use them. You must make sure kits are replenished after use.

15. You must stop spillages from entering drains, channels, gullies, watercourses and unmade ground. You must make available proprietary sorbent materials, sand, booms or drain mats for use when required.

16. You must make sure your spillage response plan includes information about how to recover, handle and correctly dispose of waste produced from a spillage.

17. You must have a documented inspection and maintenance programme for impermeable surfaces and containment facilities and keep records to demonstrate its implementation.

## 6.6 Pests

1. You must manage waste in a way that prevents pests. For example, if you do not manage flies, rats and birds they can affect operations, be a nuisance to neighbours and pose an environmental and health hazard as a potential vector for pathogens. We have produced internal guidance for our officers on fly management. Contact us if you would like a copy.

2. If you expect pests will cause pollution, hazard or annoyance at sensitive receptors, or if this has been substantiated, you must create, use and regularly review a pest management plan (https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#pest-management-plan), following our guidance.

3. Your pest management plan must include procedures for:

- inspecting for and controlling pests
- rejecting loads of infested waste
- treating pest infestations promptly, and removing waste if necessary

- storing, handling and using approved pest control products – you can get information on using chemicals at work (https://www.hse.gov.uk/chemicals/using.htm) from the Health and Safety Executive

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