

Waste & Recycling Sector Workplan 2022-23: Targeted Inspections

Open Government status: Open

Audience: FOD Inspectors, Mechanical, Occupational Hygiene & Process Safety Specialists

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1. Inspection programme

1.1. What are we inspecting and why?

Waste and recycling is a High Risk Sector – it has one of the highest rates of workplace injury and work-related ill-health across all industries. The purpose of this inspection programme is to target a) machinery guarding and b) workplace transport at waste and recycling sites. Together, these two issues account for the majority of serious and fatal injuries in the sector.

HSE has inspected the waste and recycling sector across a number of years, but we are still seeing poor H&S standards in key areas. This is an HSE enforcement inspection campaign so please be mindful of the initial enforcement expectations and that many of the industry standards have been in place for many years.

1.2. What is the extent of the problem?

Over the last 5 years, there has been an average of 8 fatalities annually in the waste industry. Over three quarters of all fatal injuries were related to transport, machinery and being struck by objects. The fatality rate is around 17 times greater than the rate across all industries per 100,000 workers,

There was also an estimated average of 4,000 non-fatal injuries to workers each year over the last 7 years. The main kinds of accidents involve slips & trips, lifting & handling and being struck by objects.

Further details of the waste sectors injury statistics can be found in the HSE's 'Waste statistics in Great Britain, 2021' (<https://www.hse.gov.uk/statistics/industry/waste-recycling.pdf>)

The top two priorities for the sector are:

- To reduce the number of people being struck by moving vehicles.
- To reduce the number of workers being caught in moving machinery.

Workplace transport

Workplace transport continues to remain a key risk within the waste and recycling industry. Over a five-year period between 2016/17 and 2020/21 a third of deaths in the sector involved moving vehicles. The key factors remain workplace transport arrangements on site; suitability and maintenance of vehicles; and the competence and management of drivers.

Machinery guarding and isolation

Machinery guarding and isolation also remain a key risk within the waste and recycling industry. Over a five-year period between 2016/17 and 2020/21 approximately a third of deaths in the sector were the result of persons coming into contact with dangerous parts of machinery. The key factors remain preventing access to dangerous parts of machinery; and the failure to develop, implement and

supervise appropriate procedures for clearing blockages and maintenance (i.e. isolation and lock-off).

1.3. What must be covered at the inspections?

- The key safety risks from the machinery contained in the Initial Enforcement Expectations table in [Appendix 5.3](#)
- The key safety risks from workplace transport
- Any matters of evident concern (MEC) – see [Appendix 5.2](#)
- Any matters of potential major concern (MPMC) - see [Appendix 5.2](#)

You should not complete HRS or PLI inspections in 2022-23 work year to Catalytic Converter Recycling, Collections and Energy from Waste sectors as they will be a focus of future inspection campaigns.

1.4. Application of the Enforcement Management Model (EMM)

Please remember this is an HSE Enforcement Campaign so always consider the full range of enforcement options available to you. This should include consideration of prosecution following inspection in line with our Enforcement Policy Statement. See [Appendix 5.3](#) for EMM Initial Enforcement Expectations and industry appendix pages.

2. Guidance & Support Available

For the latest information you can access the dedicated Waste and Recycling SharePoint site at [SharePoint](#). The sector will also be updating a Q&A section on the SharePoint site as the campaign progresses so please refer to the Q&A's in the first instance if you have a specific query.

Specialist Support type	Relevant specialist
Machinery Safety Standards	Mechanical Specialist Inspectors
Transport Safety Standards	Mechanical Specialist Inspectors (vehicle) Construction Specialist Inspectors (site)
Industry standards & enforcement benchmarks	Waste and Recycling Sector – Tim Small or Lee Schilling

Important Other Guidance for Inspections	Guidance location
Machinery Information Sheets and Machinery Safety Mec Eng Specialist presentations (internal only)	SharePoint
Waste Industry Safety and Health Forum (WISH) guidance – ‘not for profit’ industry body which develops industry guidance and standards for benchmarking	https://www.wishforum.org.uk/ https://www.wishforum.org.uk/wish-guidance/

3. Recording of inspections

Please use the [FOD Inspection Recording Form 2022-23](#) to record inspections.

Capturing information from inspections is essential for the Sector to analyse the outcomes and impact. For all HRS inspections, answers to the following six to ten questions must be recorded in **both of the risk issue** description text areas for **‘Plant and Equipment’** and **‘Workplace Transport’** of the FOD Inspection Recording Form. Answers should include sufficient information to give a clear understanding of the issues and action taken.

Questions

1. What waste processes are carried out and the equipment/vehicles used?
2. Are control measures adequate to manage the risks?
3. If control measures are not adequate, what are the specific control failings (i.e. control measures not being identified, used, checked, or maintained)?
4. Are there any management failings (e.g. policy, planning, information, training, supervision, monitoring, competence, leadership)?
5. Was there any SG involvement?
6. Was there a Material Breach(es) and what Enforcement action was taken?

The following structure should be used (including the question number):

Q1: [answer]
Q2: [answer]
Q3: [answer]
Q4: [answer]
Q5: [answer]
Q6: [answer]

Where inspections are of sites that have been the subject of previous enforcement action in the last **24 months**, the following **additional** questions should be answered:

7. Has there been sustained compliance in the control of those health and safety risks enforced upon at the previous visit?
8. If not, what are the reasons for failing to maintain continued control?
9. Were additional uncontrolled risks identified and if so, what were they?
10. What Enforcement action was taken?

4. Your Health and Safety

General health & safety information for visiting staff is on the [intranet](#)

Additional health and safety precautions in the W&R industry are generally not necessary e.g. two-person inspections.

- **PPE** - You should wear appropriate safety footwear (ankle support, mid-sole protection, steel toe caps) and a high visibility tabard or jacket. Other PPE maybe required **dependent on-site rules** / conditions e.g. eye protection, hearing protection and hard hat.
- **RPE** - it is HSE policy across all industries that Inspectors should not enter any area where there is evidence of a respirable hazard or a need to wear respiratory protective equipment (RPE) to control exposures to substances hazardous to health **unless** they are identified as authorised RPE wearers. See <http://intranet.hse.int/yourhealthsafety/safety/respiratory.htm>.

Be aware of risks whilst working in close proximity to vehicles.

If areas have been classified as having (potential) explosive and/or flammable atmospheres – do not use equipment unless it is intrinsically safe in these areas. For further information see <http://intranet.hse.int/yourhealthsafety/safety/visiting-explosives.htm>.

Ensure good personal hygiene and wash hands on leaving site.

5. Appendices

Appendix 5.1

Initial Enforcement Expectations for Waste and Recycling Activities

NB: Should an Inspector identify that there is (or is likely to be) a risk of serious personal injury arising from any of the situations below, then they should consider issuing a Prohibition Notice, regardless of the IEE indicated in the table.

MACHINERY (Specific and General)			
Type of Machine	Situation	IEE	Comment
Baler Compactor Baling Press	Ability to access compacting parts during baler operation And/or Ability to reach into dangerous parts of machine from any opening (e.g. hopper, feed point, conveyor feed point, discharge point, or inspection hatch) when machine in operation.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1). Interlocked guards. If full and/or partial body access trapped / captive key* interlock should be fitted as minimum. *Trapped/captive key is the preferred method due to the environment. Other equally effective interlocking systems are available e.g. positive and negative interlocking with/without cross monitoring. If full body access is necessary (for maintenance etc... then additional precautions may be necessary e.g. scotching or use of props to deal with risk of residual pressure or gravity fall. NB: Paper baler standards also permit other forms of safeguarding to trapped key e.g. use of presence sensing or two-handed control.
	Safety interlocks and/or guards defeated.	PN and consider prosecution	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1).
	No means to isolate and lock off power supply to machine.	PN	Work equipment not isolated from source of energy – PUWER Reg. 19
	Control devices not clearly visible, marked or reliable, or do not perform function required.	IN	All controls for work equipment are clearly visible and identifiable, including by appropriate marking where necessary – PUWER Reg. 17(1)
	Operator does not have a clear view of all functions of the machine (from control position).	PN	Clear view of the machine, baling box and discharge opening required – PUWER Reg. 17
	No trip wires on and over conveyor feeding baler (e.g. goal post type trip wires).	IN	Provide one or more readily accessible emergency stop controls – PUWER Reg. 16 if access is foreseeable
	Uncontrolled access to discharge area (risk of injury from bales or closing doors/lids).	IN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1) Protect against any article being ejected from work equipment – PUWER Reg. 12
	No protection from materials ejected during compaction (e.g. machine location, fencing etc...).	IN	Failure to protect operator/others from material being ejected from work equipment during operation – PUWER Reg.12

Conveyor	No fixed guard on nip point, where routine access is not needed.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1)
	No interlocked guard on nip point where routine access is needed e.g. for maintenance/cleaning.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1)
	No fixed guard on chain and sprocket drive.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1)
	Poor positioning, inadequate number, or incorrect type of emergency stop devices provided for conveyor system.	PN	Provide one or more readily accessible emergency stop controls – PUWER Reg. 16 Any (safety) control shall bring the work equipment to a complete stop where necessary for reasons of health and safety – PUWER Reg. 15 & 16.
	No trip wires provided on conveyors feeding machines where access is foreseeable.	PN	Provide one or more readily accessible emergency stop controls – PUWER Reg. 16
Crocodile Shears	Machine continuously operates independent of foot pedal.	PN	Inadequate operator control of machine (operation should only be controlled by a shrouded foot pedal) – PUWER Reg. 15, 16 and 17
	No fixed, adjustable, guard on moving (upper) part of machine.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1)
	Position of shears does not prevent persons/vehicles entering danger zones around machine when in operation.	PN	When work equipment is about to start, no person is in a place where they would be exposed to a risk to their health or safety as a result of the work equipment starting – PUWER Reg. 17(3) e.g. operated in a segregated area where only suitably trained and authorised operators are permitted, or additional safeguarding provided to physically protect persons from being struck by ejected materials (screens etc...).
Shredder Granulator Fragmentiser	Ability to reach blades/cutting mechanism through openings e.g. feed opening, hopper, discharge or inspection points, when machine in operation.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1)
	No protection from materials ejected during operation (e.g. machine location, fencing etc...).	IN	Failure to protect operator/others from material being ejected from work equipment during operation – PUWER Reg. 12
Trommel	No protection from materials ejected during operation (e.g. machine location, fencing etc...).	IN	Failure to protect operator/others from material being ejected from work equipment during operation – PUWER Reg. 12
All Machinery and/or work equipment	No means to isolate and lock off power supply to machine (e.g. to enable safe maintenance or to clear blockages).	IN	Work equipment not isolated from source of energy – PUWER Reg. 19 Maintenance operations which involve a risk to health or safety can be carried out while the work equipment is shut down – PUWER Reg. 22 NB: Risks from discharge of residual energy and gravity fall should also be considered.
	Guards removed, damaged or defeated.	PN	Prevent access to any dangerous part of machinery – PUWER Reg. 11(1)

	Additionally, if widespread non-compliance identified.	Consider prosecution	
	Incorrect guard in use e.g. fixed v interlock: mechanical, electrical, hydraulic or pneumatic (depending on process/machine).	IN	Guards must be suitable for the purpose for which they are provided – PUWER Reg. 11(3)
	Control devices not clearly visible, marked or reliable, or do not perform function required.	IN	All controls for work equipment are clearly visible and identifiable, including by appropriate marking where necessary – PUWER Reg. 17(1)
	Safety controls (emergency stop etc...) do not function correctly.	PN	Any (safety) control shall bring the work equipment to a complete stop where necessary for reasons of health and safety – PUWER Reg. 15 & 16.
	Operator not trained in safe operation of machine (e.g. adjustment of guards, systems of work etc...)	IN	Training must be provided (even if no dedicated course available) – PUWER Reg. 9
	No system of work established (and understood by persons who may be affected), for safe maintenance/clearing of blockages e.g. isolation, lock-off of power supply, permit to work etc...	IN	Maintenance operations which involve a risk to health or safety can be carried out while the work equipment is shut down – HASWA s.2 & 3 (PUWER Reg. 22)
	Poor housekeeping arrangements (which could result in persons tripping and falling into dangerous parts of machine).	IN	Workplace maintained in an efficient state, in efficient working order and in good repair – WHSWR Reg.5. Waste materials shall not be allowed to accumulate in a workplace – WHSWR Reg.9

TRANSPORT		
Situation	IEE	Comment
Inadequate segregation of pedestrians and vehicles	IN	Vehicles may use a traffic route without causing danger to the health or safety of persons at work near it – WHSWR Reg. 17
Inadequate collection route risk assessments	IN	Suitable and sufficient assessment of the risks to the health and safety of employees to which they are exposed whilst they are at work – MHSWR Reg. 3
No safe refuges for totters / drivers	PN	Sufficient separation for vehicles and pedestrians using the same traffic route – WHSWR Reg. 17
Untrained drivers/operators	PN & IN	All persons who use work equipment have been provided training in the methods which may be adopted when using the work equipment – PUWER Reg. 9
Inadequate maintenance on vehicles	IN	Work equipment is maintained in an efficient state, in efficient working order and in good repair – PUWER Reg. 6
Failure to thoroughly examine lifting equipment	IN	lifting equipment which is exposed to conditions causing deterioration which is liable to result in dangerous situations is thoroughly examined – LOLER Reg. 9
Raising persons unsafely e.g. on forks of a lift truck / bucket on excavator	PN	Risk of serious personal injury from fall – Work at Height Reg. 6

HEALTH			
Task	Situation	IEE	Comment
Cleaning and Maintenance activities that generate bioaerosols.	No or inadequate RPE.	IN	Cleaning of surfaces where organic waste residues are present e.g. pressure hosing insides of skips, dry brushing/ machine/conveyor surfaces, floors inside tipping halls etc... Some maintenance tasks may require surface cleaning e.g. use of compressed air to clean air filters.
Manual sorting or picking through waste (exposure to bioaerosols)	No or inadequate RPE.	IN	Elimination of dust or aerosol raising cleaning methods should be encouraged. Alternatives such as mechanical shovels, vacuums or damp methods used whenever practicable.
Employees working for prolonged periods near to where waste is being moved e.g. tipping halls. (exposure to bioaerosols)	No or inadequate RPE.	IN	Where this is not practicable, suitable RPE will be required to achieve adequate control (e.g. disposable FFP3 half masks, reusable half mask with P3 filter, powered hood/helmet with P3 filter) - COSHH Reg 7 Wearers not face fit tested (tight fitting masks) (see INDG 479) – COSHH Reg 7 Wearers not trained in how to wear RPE correctly Evidence includes: facial hair, hats, glasses, other PPE interfering with RPE tight fit - COSHH Reg 8. No suitable arrangements for maintenance and cleaning (non-disposable RPE only), storage and replacement. Evidence includes filters with signs of clogging - COSHH Reg 9.
Welding and allied processes	Indoor/outdoor regular high intensity welding		See Manufacturing Sector workplan 2019/20 Occupational Lung Disease OG for IEE's https://www.hse.gov.uk/foi/internalops/og/og-00109.pdf
	Indoor/outdoor sporadic or low intensity welding		See Manufacturing Sector workplan 2019/20 Occupational lung disease OG for IEE's https://www.hse.gov.uk/foi/internalops/og/og-00109.pdf
	Flame cutting/burning metal waste with no controls	IN	Flame cutting/burning can produce significant fume, the following should be considered: Exclusion Zone: The extent of any zone around burning work and downwind should be reviewed. Other workers should not be in the vicinity of the fume unless using appropriate RPE. 'Enclosed' Work: Engineering controls should be considered for flame cutting work in enclosed areas or where there is no natural dispersion away from the burner. Surface Coatings: Surface coatings e.g. old paint, resins may contain other highly toxic components e.g. lead and organic thermal breakdown products. Suitable RPE e.g. powered welding helmet with a A2P3 (organic vapour/particulate) filter should be worn. COSHH Reg 7

Health Surveillance	No health surveillance programme in place where there is a risk from inhalation exposure to a substance that will or may result in occupational asthma.	IN	Inadequate provision: IEE NOC – COSHH Reg 11 Discuss with SG Occupational Health where necessary.
Information, Instruction and Training	None provided to employees who may be at risk from exposure to bioaerosols, welding fume, RCF (catalytic converters).	IN	Employees should be aware of the ill health risks/symptoms associated with exposure and the controls in place to prevent or reduce exposure in their work areas/activities - COSHH Reg 12
Asbestos storage	Not bagged/wrapped or stored within a lockable skip.	IN	Control of Asbestos Reg. 6, 7,11,16 & 24
Asbestos awareness	No/inadequate training.	IN	Topics should include identification of asbestos products, potential risks to health from exposure, safe handling and storage of asbestos waste, emergency procedures including decontamination and RPE. Control of Asbestos Reg. 10
Asbestos Handling	Lack of / inadequate procedures for handling asbestos waste.	IN / PN	A PN would be appropriate where there is evidence of mechanical handling of bagged asbestos waste and/or evidence of significant amounts of asbestos debris around the premises. Control of Asbestos Regs 6, 7,11,12,13,15 & 16

Appendix 5.2. Industry specific information

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Appendix 5.2.1: Waste and Recycling (General)

Introduction
recycling of industrial, commercial and municipal (household) waste. Activities range from collection (e.g. municipal and commercial wastes); reception (e.g. civic amenity sites); transfer/sorting (e.g. waste transfer stations); processing (including, reuse, recycling (metal and non-metal scrap and waste), recovery of materials (e.g. Material Recycling Facilities), biological treatment of organics material (e.g. composting), thermal treatment (e.g. including incineration with or without energy recovery); and disposal (e.g. landfill) activities. Across the range of HRS inspections for the 22/23 work year Inspectors will encounter the following generic priorities below. Additional sector specific backgrounds and priorities can be found in appendices 5.1.2 to 5.1.9.
Generic W&R Priorities
Transport <u>Safe site</u> ➤ Have they assessed the risks from workplace transport at the site? ➤ Is there a clear directional flow of traffic around the site? ➤ Has a one-way system been considered/implemented? ➤ Has reversing been eliminated SFARP? ➤ Are vehicles suitably segregated from pedestrians, including members of the public? ➤ Has the positioning of skips/containers been considered with a view to eliminating blind corners? If not, have mirrors etc... been introduced to improve a driver's view of obscured areas? ➤ Are there physical control measures to prevent access by members of the public to the area during collection of full skips/containers? ➤ Are skips/containers clearly marked to reduce risk of late adjustments and reversing by visiting members of the public? <u>Safe vehicles</u> ➤ Are all vehicles fit for use and suitable for the activities they are performing? ➤ Are all brakes, lights, mirrors, horns etc... suitably maintained? ➤ Have reversing alarms/beacons been fitted? ➤ Have all lifting equipment and accessories been thoroughly examined? <u>Safe drivers</u> ➤ Are only trained workers allowed to drive vehicles? ➤ Are there clear instructions for visiting drivers, especially members of the public? ➤ Are visiting drivers and MOPs supervised and monitored whilst on site? Machinery ➤ Has access to all dangerous parts of the machine been eliminated or restricted SFARP? ➤ Is guarding fixed or interlocked (if access required)? ➤ Are all in-running nips on conveyors guarded (safe by position for operation does not mean safe by position for maintenance)? ➤ Is there a daily / pre-shift guard check system in place? ➤ How are machines maintained and/or cleaned? ➤ How are blockages removed from machines? ➤ Can the machine be isolated and locked off (e.g. maintenance or clearing blockages)? ➤ Are there the means to lock off e.g. personal padlocks, multi hasp locks? ➤ Have all operators been suitably trained in the use of the machine they are operating? ➤ Have risk assessments considered engineering/maintenance activities? Musculoskeletal Risks (MSDs) ➤ Have the risks associated with manual handling activities been suitably assessed? ➤ Are there opportunities to use mechanical aids to replace manual handling? ➤ Are workers appropriately trained?

Structural stability

- Are structures being used to support a load (e.g. wall or bay) adequately monitored and maintained? e.g.:
 - Is the site operator aware of the safe work load/capacity of the structure?
 - How do they ensure that this loading is not exceeded?
- Are the structures routinely inspected (for signs of wear or damage)?
- Are items being stacked in a safe manner e.g. vehicles, bales etc...? e.g. have they considered:
 - The type of material being stacked (e.g. will it disintegrate over time or under excessive loading)?
 - Does the material easily lend itself to stacking (e.g. compacted bales stack more safely than non-compacted vehicles)?
 - How good are the ground conditions (e.g. how flat and firm)?
 - Is the stack inside or outside of a building?
 - If outside, will it get affected by adverse weather conditions (weather, vehicle movements etc...)?
 - Does the stack need some form of stability aid (lengths of wood within the stack, or use of a bay)?
 - What is the volume of traffic movements around the stack, and are there any preventative measures in place to prevent accidental damage?
 - How frequently will operators need access to the stack?

Appendix 5.2.2 Civic Amenity / Bring / Household Waste Recycling Sites

Introduction

A civic amenity site (CA site) or household waste recycling centre (HWRC) is a facility where the public can dispose of household waste and also often containing recycling points. Civic amenity sites are usually owned by the local authority but maybe contracted out and operated by a private company.

Bring Sites are bottle, clothing and paper banks found in public places e.g. supermarket car parks.

Hand sorting of residual black bag waste is an activity which is increasingly taking place at HWRCs. The aim is to increase recycling rates and educate members of the public and may be carried out by the operatives or the MOPs themselves. HSE have clarified the legal position with the industry and stated that, if these activities are to continue, an assessment of the risks must be completed and necessary control measures put in place whether it be for operatives or members of the public. (See Priorities below).

Additional Priorities for Civic Amenity / Bring / Household Waste Recycling Sites**Transport****Members of the Public**

- Are there clear signs at site entrance directing Members of the public to clear parking / drop off zones that are as close as possible to unloading bays?
- Have vulnerable users such as the elderly/disabled/distracted been considered? Are children left in cars?
- Are all provisions in Wish Waste 26 relating to members of the public adhered to?

Musculoskeletal Risks (MSDs)

- Are workers expected to assist members of the public?

Slips/Trips

- Is the ground stable and even around skips / receptacles?
- Are there systems to monitor overflow / waste left outside receptacles (unattended sites)?
- Are there systems for the immediate clear up of spills?

Work at Height

- Have suitable edge protection barriers at waist height (like scaffolding edge protection) been provided?
- Are there systems to ensure skips are loaded evenly and prevent overfilling of skips?
- Where trimming of the load is necessary, are they raking with plant buckets or plant fitted with compaction devices or other tools?

- What are the systems to prevent entering skips to retrieve contaminants or valuable items, eg by: Intercepting them before they enter the skip, or providing 'retrieval tools/poles'?

Asbestos

- Are workers suitably trained to identify asbestos waste?
- Are there appropriate arrangements to deal with unexpected asbestos waste?

DSEAR

- Are dangerous substances (e.g. aerosols, solvents, LPG cylinders, batteries) stored securely and safely?

Bioaerosols

- Are they aware of what bioaerosols are? Are they aware of health risks and symptoms of exposure?
- Have they identified tasks/activities that could generate bioaerosols, for example:
 - Manual sorting or picking through waste;
 - Cleaning of surfaces/equipment where organic waste residues are present e.g. pressure hosing insides of skips, dry sweeping etc...
 - Dismantling of equipment which may have collected or grown organic matter over time (e.g. food deposits/mould in fridges).
 - Working in close proximity to where garden waste is being mechanically moved.
- Have cleaning and dismantling tasks generating bioaerosols been eliminated or adequately controlled e.g. pressure hosing or dry sweeping?
- Where exposure to bioaerosols cannot be adequately controlled, has suitable and sufficient Respiratory Protective Equipment (RPE) been provided (e.g. FFP3 or air-fed masks) in combination with other control measures?
- **COSHH – Hand Sorting of Black Bag Waste**
- Has the HWRC operator assessed the health and safety risks to employees and others (e.g. MOPs) that arise from hand sorting of black bag waste?
- In particular, have they considered:
 - Injection/dermal contact with blood borne viruses/pathogenic bacteria as a result of damage to the skin from sharps (needles, broken glass)
 - Contact with hazardous chemicals
 - Inadvertent ingestion of pathogenic bacteria (from nappies, cat litter etc...) due to poor hygiene measures.
 - Possible inhalation of bioaerosols from organic waste.
- Have all appropriate measures to control the risks identified above been implemented e.g. PPE (gloves, masks, aprons etc... and any necessary equipment (e.g. picking tongs), as well as adequate welfare facilities (e.g. hand washing facilities)?
- Where members of the public are required to hand sort their own black bag waste, have all the appropriate control measures identified above been provided to them, and have operators considered the potential for violence and aggression?
- Is adequate monitoring and supervision in place?

Guidance

[Wheeled loading shovels in waste and recycling - HSE](#) - HSE WPT Safety Alert

[Waste 03](#) – Orphaned gas cylinders in the waste & recycling industry

[Waste 09](#) - Safe transport at waste and recycling sites

[Waste 11](#) - Safety at 'Bring Sites' in the waste management and recycling industry

[Waste 26](#) – Managing health and safety at Civic Amenity Sites

Appendix 5.2.3 - Materials Recovery Facilities (MRFs)

Introduction

Materials Recovery Facilities (MRFs), also known as Materials Recycling Facilities or Materials Reclamation Facilities, may be designed to handle materials collected from a single municipal/household kerbside collection system, or more typically, to sort materials from kerbside collection programmes, as well as recyclables from

commercial and industrial sources. These operations range in size and are operated by local authorities, major private contractors, the third sector and SMEs who may also operate waste transfer stations.

They play an important role in reducing the amount of waste sent to landfill sites. They use specialised plant that receives, separates and prepares dry recyclable materials. The recyclables go through a variety of mainly mechanical and some manual processes to obtain maximum recovery of materials that will re-enter the manufacturing process as a valuable commodity.

MRFs use a range of technologies to sort recyclables by their physical and chemical properties; shape, size, weight, magnetism and optical scanning.

Additional Priorities for MRFs

Transport

Safe site

- If hand sorting “totting” is being performed, have safe refuges been provided or transport movements eliminated in those areas whilst totting is ongoing?

Musculoskeletal Risks (MSDs)

- Has ergonomics been assessed on sorting/picking lines?

DSEAR

- Has a suitable and sufficient DSEAR assessment been undertaken? e.g.:
 - Have the risks arising from dangerous substances been identified and controlled?
 - Have any areas of the workplace where explosive atmospheres may occur been identified and classified, and measures taken to avoid ignition sources?
 - Have plans and procedures been developed to deal with accidents, incidents and emergencies and cascaded to staff?

Bioaerosols

- Are they aware of what bioaerosols are? Are they aware of health risks and symptoms of exposure?
- Have they considered the increased risk of bioaerosol generation during the following activities:
 - Manual sorting or picking through waste;
 - Maintenance and cleaning activities e.g. compressed air, dry brushing etc...;
 - Working inside buildings near to where waste is being moved by heavy plant eg tipping halls.
- Have cleaning and maintenance tasks generating bioaerosols e.g. pressure hosing, compressed air use, dry sweeping been eliminated where reasonably practicable?
- Where exposure to bioaerosols cannot be adequately controlled, has suitable and sufficient Respiratory Protective Equipment (RPE) been provided (e.g. disposable FFP3 half masks, reusable half mask with P3 filter, powered hood/helmet with P3 filter) in combination with other control measures?

Asbestos

- Are workers suitably trained to identify asbestos waste?
- Are there appropriate arrangements to deal with unexpected asbestos waste?

Guidance

[WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf \(wishforum.org.uk\)](#)

[WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf \(wishforum.org.uk\)](#)

[Wheeled loading shovels in waste and recycling - HSE](#) - HSE WPT Safety Alert

[Waste 03](#) – Orphaned gas cylinders in the waste & recycling industry

[Waste 08](#) - Compactor Equipment : Public and User Safety

[Waste 09](#) - Safe transport at waste and recycling sites

[Waste 13](#) - Designing and Operating Material Recovery Facilities (MRFs) safely

[Waste 18](#) – Hand sorting of recyclables (‘totting’) with vehicle assistance

Appendix 5.2.4 - Mechanical Biological Treatment (MBT)

Introduction
MBT is a generic term used to describe several different residual waste treatment processes that involve both mechanical and biological treatment of municipal solid waste (MSW). MBT plants are used to separate mixed waste streams, typically from MSW, into a range of dry products (typically ferrous and non-ferrous metals and glass), high calorific value refuse derived fuels (RDF) suitable for incineration, and wet biodegradable slurries suitable for either composting or anaerobic digestion (AD). MBT technology uses the naturally generated heat produced during biological degradation to dry and stabilise MSW. There are two main approaches and the difference between them is the stage at which the biological part of the waste is treated – either before the mechanical separation process or after it has taken place. MBT itself is a two-stage process where on receipt at a processing plant MSW will be, after mixing and shredding (required to ensure waste is evenly mixed and sized), separated into different fractions using a range of different processes such as: ○ Screening – removal of larger pieces of waste; ○ Magnetic separation – removal of ferrous materials such as tin cans; ○ Eddy current separation – removal of non-ferrous metals such as aluminium cans; ○ Optical separation – separation of certain types of plastic; and ○ Air classification – removal of light materials such as paper. Once separated the materials can go on to be further recycled and the RDF used in energy production. The quality of the end products will depend upon the process that is used. Dry materials are generally of poor quality and only some types can be recycled e.g. glass is used as an aggregate in road construction. The residual biological material is generally of quality that is only suitable for landfill restoration.
Additional Priorities for MBT
Transport <u>Safe site</u> ➤ If hand sorting “totting” is being performed, have safe refuges been provided or transport movements eliminated in those areas whilst totting is ongoing? DSEAR ➤ Has a suitable and sufficient DSEAR assessment been undertaken? e.g.: ○ Have the risks arising from dangerous substances been identified and controlled? ○ Have any areas of the workplace where explosive atmospheres may occur been identified and classified, and measures taken to avoid ignition sources? ○ Have plans and procedures been developed to deal with accidents, incidents and emergencies and cascaded to staff? Bioaerosols ➤ Are they aware of what bioaerosols are? Are they aware of health risks and symptoms of exposure? ➤ Have they considered the increased risk of bioaerosol generation during the following activities: ○ Manual sorting or picking through waste; ○ Maintenance and cleaning activities e.g. compressed air, dry brushing etc...; ○ Working inside buildings near to where waste is being moved by heavy plant e.g. tipping halls. ➤ Have cleaning and maintenance tasks generating bioaerosols e.g. pressure hosing, compressed air use, dry sweeping been eliminated where reasonably practicable? ➤ Where exposure to bioaerosols cannot be adequately controlled, has suitable and sufficient Respiratory Protective Equipment (RPE) been provided (e.g. disposable FFP3 half masks, reusable half mask with P3 filter, powered hood/helmet with P3 filter) in combination with other control measures? ➤
Guidance

HSE webpage “Mechanical biological treatment” <http://www.hse.gov.uk/waste/mechanical-bio.htm>

“Recover paper safely” <http://www.hse.gov.uk/pubns/indg392.pdf>

HSE WPT Safety Alert - [Wheeled loading shovels in waste and recycling - HSE](#)

[WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf \(wishforum.org.uk\)](#)

[WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf \(wishforum.org.uk\)](#)

[Waste 03](#) – Orphaned gas cylinders in the waste & recycling industry

[Waste 08](#) - Compactor Equipment: Public and User Safety

[Waste 09](#) - Safe transport at waste and recycling sites

[Waste 18](#) – Hand sorting of recyclables ('totting') with vehicle assistance

Appendix 5.2.5 - Metal Recycling including End of Life Vehicles (ELV)

Introduction

Metal recycling sites (previously referred to as scrapyards) recycle, process and/or store waste metal. Sites obtain unwanted or unrepairable items (often referred to as “end of life”) such as vehicles, electronic equipment, appliances and general waste metal to remove valuable components for reuse or selling to other traders or the public. Operators utilise a range of processes and equipment to strip, cut or burn waste to extract key metals or components. The industry has a high proportion of small to medium sized enterprises (SMEs).

Certain sites will be authorised to process and recycle end of life vehicles (ELV). An ELV is any motor vehicle that has been designated as waste (due to its age and/or condition) and must be appropriately “de-polluted” - the safe and controlled removal of harmful components and substances such as car batteries, engine oil and fuel.

Additional Priorities for ELV

Petrol drainage

➤ Are they using a safe method to remove petrol e.g. a proprietary fuel retriever or depollution rig?
Have they controlled fire and explosion risks e.g. piercing fuel tanks, draining petrol, potential flammable atmospheres, sources of ignition etc...?

Structural stability

➤ Are vehicles being stored/stacked in a safe manner.

Catalytic converter recycling

➤ See W&R HRS SharePoint site for guidance on catalytic converter recycling.

Guidance

[WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf \(wishforum.org.uk\)](#)

[WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf \(wishforum.org.uk\)](#)

[WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf \(wishforum.org.uk\)](#)

HSE WPT Safety Alert [Wheeled loading shovels in waste and recycling - HSE](#)

“Scrap and metal recycling” <http://www.hse.gov.uk/waste/metals.htm>

“End of life vehicle (ELV) industry” <http://www.hse.gov.uk/waste/dismantling.htm>

[Waste 03](#) – Orphaned gas cylinders in the waste & recycling industry

[Waste 08](#) - Compactor Equipment: Public and User Safety

[Waste 09](#) - Safe transport at waste and recycling sites

[Waste 10](#) - Recovery of petrol from ELVs

[Waste 18](#) – Hand sorting of recyclables ('totting') with vehicle assistance

Appendix 5.2.6 - Skip Safety

Introduction
A skip is a large open-topped waste container designed for loading onto a skip loader lorry. Instead of being emptied into another vehicle, (as is the case with a wheelie bin and a Refuse Collection Vehicle), a skip is removed, or replaced by an empty skip, and its contents disposed of elsewhere (normally at a waste transfer station or landfill). To facilitate its removal, there are usually lugs at the ends of the skip onto which chains can be attached, permitting it to be lifted onto and off the skip lorry. There are several types of skip containers, but the majority can be classified in three groups: Open skips (which allow easier loading of waste materials and are commonly found on construction sites); Closed skips (more secure, prevent unauthorised use of the skip and can help to ensure that the volume of waste does not exceed the maximum limit), and Roll-On and Roll-Off (RORO) skips that are similar to open skips, but instead of being lifted onto a skip lorry by chains, they are rolled on with a hook. One end of the skip sometimes has a large door that hinges down to allow manual loading and unloading. Skips are usually durable and tough, made to withstand rough use by tradesmen and labourers. There are no BS/EN standards for the manufacture of skips and containers – though some industries may have their own standards e.g. offshore. Due to the multi-purpose nature of their use, skips can be found on almost any type of site. Road Traffic legislation requires that the contents of full skips be covered to prevent accidental loss of material – this is normally achieved by sheeting. Automated/mechanical sheeting systems are at the top of the hierarchy of control measures because these systems allow the driver to sheet the load from ground level. Manual sheeting from the vehicle is to be discouraged unless it is not reasonably practicable to use automated sheeting systems or sheet from the ground. Loads can be sheeted from platforms removing the need to climb onto the vehicle or the load. Under no circumstances should anyone be allowed to stand or walk on the load. There has been an issue with skip loader vehicles 'running away' whilst lifting skips on slopes. Most manufacturers now offer all-wheel braking on the chassis of vehicles suitable for converting to skip loaders, but if it is not possible to purchase all-wheel braking on a new vehicle, flat plates should be fitted to stabiliser legs instead of rollers. Similarly, on older vehicles it should be possible to fit all-wheel braking retrospectively, but the converted vehicle must conform with all the current construction and use regulations and it must be approved by application to the DVSA or equivalent. Where this is not possible, flat plates should be fitted to the stabiliser legs.
Additional Priorities for skip safety
For each of the sections below, please also assess how site management ensure sustained compliance with their procedures through monitoring and review to complete the plan, do, check, act management system. Collection/transfer of skips ➤ Does the hoisting mechanism (including any wire ropes or chains that form part of the mechanism) for skip loaders and hook loaders comply with LOLER? ➤ Are skips/containers routinely examined to ensure that they remain in good repair and are fit for purpose? Skips and containers themselves do not require thorough examination under LOLER, but do require inspection under PUWER. ➤ Do drivers report hazardous situations (e.g. grossly overloaded or unsafely loaded skips or containers)? ➤ Is there a safe system for sheeting skips (if necessary)? ➤ Are duty holders transporting loaded skips that are stacked on top of each other? This is regarded by DVSA to be unsafe. DVSA would enforce on the highway. HSE should address the matter if seen leaving / entering site. ➤ Are duty holders transporting stacked empty skips? If so they should not be stacked more than 3 high. Skip management ➤ Have operators selected the correct type of skip for the intended task (e.g. load, stability etc...)? ➤ Are operators and/or collection workers competent to recognise faults and/or damage to skips/containers that could make them unsafe to use? ➤ Is there a system to ensure that damaged and unsafe skips or containers are removed from service for disposal, repair or returned to supplier? ➤ Has the stability of stacked empty skips been considered (e.g. ground conditions, accessibility etc...)? ➤ Loaded skips should never be stacked on top of each other. Transport <u>Safe site</u> ➤ Has the positioning of skips/containers been considered with a view to eliminating blind corners? If not, have mirrors etc... been introduced to improve a driver's view of obscured areas?

➤ Physical control measures to prevent access to area during collection of full skips/containers? Safe vehicles ➤ Have all lifting equipment and accessories been thoroughly examined? ➤ On skip loaders, has the potential for “runaway” during loading been suitably prevented? i.e. ○ Is it fitted with all wheel braking? Retrofitting is possible ○ If all wheel braking cannot be fitted, have the rollers been replaced with flat plates on the stabiliser legs? Asbestos ➤ Are workers suitably trained to identify asbestos waste? ➤ Are there appropriate arrangements to deal with unexpected asbestos waste in skips?
Guidance WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf (wishforum.org.uk) WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf (wishforum.org.uk) WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf (wishforum.org.uk) WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf (wishforum.org.uk) WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf (wishforum.org.uk) HSE webpage “WPT Safety Alert” Wheeled loading shovels in waste and recycling - HSE HSE webpage “Skip hire and waste transfer” http://www.hse.gov.uk/waste/skiphire.htm HSE webpage “Preventing ‘runaway’ skip loader incidents” http://www.hse.gov.uk/waste/skiploaders.htm HSE webpage “Hook Loaders and Skips, Load security when raising and lowering” www.hse.gov.uk/waste/hookloader.htm HSE webpage “Wishbone bale bars – Failure of lifting bars on waste compaction containers (hook bar)” www.hse.gov.uk/waste/wishbone.htm Waste 06 - Skip and Container Safety in Waste Management and Recycling Waste 09 - Safe transport at waste and recycling sites HSE webpage – Waste Management Frequently asked questions When does LOLER apply to Waste & Recycling equipment http://www.hse.gov.uk/waste/faqs.htm HSE webpage – Waste Management Frequently asked questions How do I safely stack bales of waste material Waste Management: Frequently Asked Questions

Appendix 5.2.7 - Waste Electrical and Electronic Equipment (WEEE)

Introduction Waste Electrical and Electronic Equipment recycling (WEEE) is a specialist part of the waste and recycling industry, and includes most products that have a plug or need a battery. There are 10 broad categories of WEEE: ○ Large household appliances e.g. fridges, cookers, microwaves, washing machines and dishwashers; ○ Small household appliances e.g. vacuum cleaners, irons, toasters and clocks; ○ IT and telecommunications equipment e.g. computers, copying equipment, telephones and calculators; ○ Consumer equipment e.g. radios, televisions, hi-fi equipment, camcorders and musical instruments; ○ Lighting equipment e.g. straight and compact fluorescent tubes and high intensity discharge lamps; ○ Electrical and electronic tools – e.g. drills, saws and sewing machines, electric lawnmowers; ○ Toys, leisure and sports equipment e.g. electric trains, games consoles and running machines; ○ Medical devices e.g. (non-infected) dialysis machines, analysers, medical freezers, cardiology equipment; ○ Monitoring and control equipment e.g. smoke detectors, thermostats and heating regulators; and ○ Automatic dispensers e.g. hot drink dispensers and money dispensers.
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A wide range of materials e.g. metal, glass, plastics, ceramics and precious metals can be found in WEEE, and treatment varies enormously according to the type of WEEE and technology that is used. Some facilities utilise large-scale shredding technologies, others use a disassembly process (manual, automated or a combination). Various standards exist for both disassembly and shredding operations and in particular for the removal of certain hazardous substances and components in order to avoid risks to health and safety and damage to equipment.

Health and safety

Inspectors could potentially discover a range of hazardous substances at a WEEE Recycling Plant, including:

- Mercury (which can be found in fluorescent lamps, medical equipment, and mobile phones);
- Phosphorous pentachloride (liberated when processing some glass to remove the fluorescent coating);
- Polychlorinated biphenyls – PCBs (found in capacitors and transformers manufactured before 1986);
- Refractory Ceramic Fibre – RCF (some domestic and building heating appliances);
- Asbestos (found in older appliances such as electric coffee pots, toasters, irons and electric heaters);
- Lead (liberated when processing some glass);
- Radioactive substances (fill level detectors, static eliminators, radium luminised dials, smoke detectors).

Additional Priorities for WEEE

For each of the sections below, please also assess how site management ensure sustained compliance with their procedures through monitoring and review to complete the plan, do, check, act management system.

Substances hazardous to health

- Does the WEEE being processed contain substances hazardous to health?
- Has a COSHH assessment been performed? Do any substances have a WEL? Are any classified as carcinogens, mutagens or asthmagens?
- If relevant, have suitable control measures been introduced to ensure exposure below the WEL and for substances classified as carcinogens, mutagens or asthmagens to as low a level as reasonably practicable?
- Are control measures maintained in a clean state and in good working order?
- For substances not covered by COSHH (e.g. lead, asbestos and radioactive substances) have control measures (in accordance with those specific regulations) been introduced?
- Have adequate emergency procedures been established (if required) and is everyone trained in what to do?
- Has any health surveillance been carried out (if required)?

Musculoskeletal risks (MSDs)

- Have the risks associated with manual handling activities been suitably assessed?
- Are there opportunities to use mechanical aids to replace manual handling?

Bioaerosols

- Are they aware of what bioaerosols are? Are they aware of health risks and symptoms of exposure?
- Have they identified tasks/activities that could generate bioaerosols, for example:
 - Cleaning of surfaces where organic waste residues are present e.g. pressure hosing insides of skips, dry sweeping etc...
 - Dismantling of equipment which may have collected or grown organic matter over time (e.g. food deposits/mould in fridges).
- Have cleaning and dismantling tasks generating bioaerosols been eliminated or adequately controlled e.g. pressure hosing or dry sweeping?
- Where exposure to bioaerosols cannot be adequately controlled, has suitable and sufficient Respiratory Protective Equipment (RPE) been provided (e.g. FFP3 or air-fed masks) in combination with other control measures?

Guidance

[WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf](https://www.wishforum.org.uk/WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf) (wishforum.org.uk)
[WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf](https://www.wishforum.org.uk/WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf) (wishforum.org.uk)
[WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf](https://www.wishforum.org.uk/WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf) (wishforum.org.uk)
[WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf](https://www.wishforum.org.uk/WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf) (wishforum.org.uk)

[WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf \(wishforum.org.uk\)](#)

HSE WPT Safety Alert [Wheeled loading shovels in waste and recycling - HSE](#)

“Waste Electrical and Electronic Equipment recycling (WEEE) <http://www.hse.gov.uk/waste/waste-electrical.htm>

[Waste 03](#) – Orphaned gas cylinders in the waste & recycling industry

[Waste 08](#) - Compactor Equipment: Public and User Safety

[Waste 09](#) - Safe transport at waste and recycling sites

[Waste 18](#) – Hand sorting of recyclables (‘totting’) with vehicle assistance

Appendix 5.2.8 Waste Transfer Stations

Introduction

A waste transfer station is a building or processing site for the temporary deposition of waste. They are used as a convenient tipping point for general waste and recyclable materials. Local waste collection vehicles will deposit their waste, the waste is then bulked up before being loaded and transported in larger vehicles to another location for further treatment or disposal.

Often Waste transfer stations may be a combination of different processes.

Additional Priorities for waste transfer stations

For each of the sections below, please also assess how site management ensure sustained compliance with their procedures through monitoring and review to complete the plan, do, check, act management system.

Transport

Safe site

- Has the positioning of skips/containers been considered with a view to eliminating blind corners? If not, have mirrors etc... been introduced to improve a driver's view of obscured areas?
- Physical control measures to prevent access to area during collection of full skips/containers?
- If hand sorting “totting” is being performed, have safe refuges been provided or transport movements eliminated in those areas whilst totting is ongoing?
- Have risks arising from reverse tipping been controlled e.g. to prevent vehicles reversing into reception pits?

Musculoskeletal Risks (MSDs)

- Has ergonomics been assessed on sorting/picking lines?

Asbestos

- Are workers suitably trained to identify asbestos waste?
- Are there appropriate arrangements to deal with unexpected asbestos waste?

Bioaerosols

- Are they aware of what bioaerosols are? Are they aware of health risks and symptoms of exposure?
- Have they considered the increased risk of bioaerosol generation during the following activities:
 - Manual sorting or picking through waste;
 - Maintenance and cleaning activities e.g. compressed air, dry brushing etc...;
 - Working inside buildings near to where waste is being moved by heavy plant e.g. tipping halls.
- Have cleaning and maintenance tasks generating bioaerosols e.g. pressure hosing, compressed air use, dry sweeping been eliminated where reasonably practicable?
- Where exposure to bioaerosols cannot be adequately controlled, has suitable and sufficient Respiratory Protective Equipment (RPE) been provided (e.g. disposable FFP3 half masks, reusable half mask with P3 filter, powered hood/helmet with P3 filter) in combination with other control measures?

Guidance

For those carrying out hand totting, tatting or picking from floor activities, a [Checklist \(https://www.hse.gov.uk/waste/checklist.htm\)](https://www.hse.gov.uk/waste/checklist.htm) is available. Although it is not comprehensive, the self-audit can be used as an aide memoire.

WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf (wishforum.org.uk) WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf (wishforum.org.uk) WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf (wishforum.org.uk) WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf (wishforum.org.uk) WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf (wishforum.org.uk) HSE WPT Safety Alert Wheeled loading shovels in waste and recycling - HSE Waste 03 – Orphaned gas cylinders in the waste & recycling industry Waste 08 - Compactor Equipment: Public and User Safety Waste 09 - Safe transport at waste and recycling sites Waste 10 - Recovery of petrol from ELV Waste 18 – Hand sorting of recyclables ('totting') with vehicle assistance
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Appendix 5.2.9: Composting

Introduction
Composting is the recycling of organic wastes such as vegetation and food waste to primarily produce fertiliser. Micro-organisms (fungal/mould spores such as the fungus <i>Aspergillus fumigatus</i> and certain types of bacteria called actinomycetes) are encouraged to grow to break down the organic waste - a process that also results in a very large number of these micro-organisms. Any handling of the material that generates dust will create a bioaerosol (micro-organisms made airborne). Commercial scale composting is performed either in open windrows (long heaps of composting material) or in-vessel systems (where the composting material is enclosed; a requirement for treating material containing animal waste). To encourage efficient composting, the material must be well aerated. Aeration of open windrows is achieved by regular turning of the material, which will create bioaerosols. In-vessel systems usually have forced air ventilation which is less likely to create bioaerosols. However, at the end of either process often the compost is screened (sieved) to produce a quality soil supplement and this could create bioaerosols.
Health and safety
Do not stand in close proximity to jet washing/high pressure hosing, which could release bioaerosols into the air.
Priorities
Bioaerosols ➤ Are they aware of what bioaerosols are? Are they aware of health risks and symptoms of exposure? ➤ Have they identified tasks/activities that could generate bioaerosols, for example; ○ turning actively composting material ○ screening composted material ○ maintenance and cleaning equipment. ➤ For those working within a vehicle cab, with an adequate, well maintained, filtration system then RPE may not be needed, but can the duty holder demonstrate the effectiveness of the cab filter and a proper system of work such as ensuring staff keep their cab doors and windows closed. ➤ Where exposure to bioaerosols cannot be adequately controlled, has suitable and sufficient Respiratory Protective Equipment (RPE) been provided (e.g. FFP3 or air-fed masks) in combination with other control measures? RPE is likely to be required by workers when shredding, turning, screening or moving composting material or whenever leachate is either sprayed or transferred from one place to another. This precaution is likely to be required by anyone within 30 metres of such a procedure, and for five minutes afterwards.
Guidance
WISH-WASTE-29-Practical-isolation-and-lock-off-guidance-October-2021.pdf (wishforum.org.uk) WISH-WASTE-33-Principles-of-machinery-safety-recycling-recovery-plant-August-2022.pdf (wishforum.org.uk) WISH-INFO-20-Machinery-safety-belt-conveyors-August-2022.pdf (wishforum.org.uk) WISH-INFO-21-Machinery-safety-trommel-screens-August-2022.pdf (wishforum.org.uk) WISH-INFO-22-Machinery-safety-horizontal-plane-balers-August-2022.pdf (wishforum.org.uk)

HSE webpage "WPT Safety Alert" [Wheeled loading shovels in waste and recycling - HSE](#)

HSE webpage "Composting - Recycling biodegradable waste" <http://www.hse.gov.uk/waste/composting.htm>

Public Health England "What are bioaerosols?"

<http://webarchive.nationalarchives.gov.uk/20140714084352/http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/Bioaerosols/BioaerosolsQandA>

[Waste 09](#) - Safe transport at waste and recycling sites.

[Waste 27](#) - Health and hazardous substances in waste and recycling.

Appendix 5.3

Examples of industry specific Matters of Evident Concern (MEC) and Matters of Potential Major Concern (MPMC)

Inspectors must consider action in relation to Matters of Evident Concern (MEC) or Matters of Potential Major Concern (MPMC) at all visits (see [OC18/12](#)).

Included in the industry-specific appendices are industry-specific examples of situations that could lead to potentially catastrophic events. There are other events common across the industry included here. See OC18/12 for more details.

Inspectors should discuss with Specialist Inspectors if further assistance is required.

Potential Catastrophic Event:	Due to:	Examples of indicative issues:	Existing Guidance:
Fire & explosion.	Lack of General Fire Precautions NB verbal advice only then refer immediately to the local Fire Authority and EA	Stack separation Lack of escape routes	WISH Waste 28 - Fire Guidance EA Fire Prevention Plans
	Uncontrolled release of stored energy at autoclaves / hydroclaves	Lack of / inadequate proactive maintenance system.	http://www.hse.gov.uk/pubns/guidance/pm73.pdf Safety requirements for autoclaves
	Orphan Cylinders	Inadequate pre-sorting of waste Inadequate storage arrangements	Waste 03 – Orphaned gas cylinders in the waste & recycling industry
	Storage of Oily Rags	Inadequate DSEAR assessment Inadequate storage	HSG 140 The Safe Use and Handling of Flammable Liquids Paragraph 118
Exposure to oxygen deficient atmospheres; exposure to noxious gases; engulfment (solids / liquids).	Entry into a confined space / silo / tank	Need to enter confined space has not been designed-out.	INDG258 (rev1) Safe Work in Confined Spaces: A Brief Guide to Working Safely.
		Lack of / inadequate safe system of work for necessary confined space entry.	Safe Work in Confined Spaces. ACOP to the Confined Spaces Regulations 1997
Structural Safety / structural collapse	Collapse of large size precast panels	Damaged or poorly maintained bay / bunker walls Evidence of overloading or overfilling of bays	WISH WASTE 32 - Containment wall safety

Appendix 6.

Sub-sectors NOT to be inspected in Q4 2022 / 23

Note – the following subsectors **should not** be inspected as part of this initiative. Further information on these sectors can be found on the HSE's Waste and Recycling Sector HRS [SharePoint](#) site should Inspectors be required to inspect these activities for other regulatory reasons.

1. Catalytic Converter Recycling
2. Collections (domestic and commercial)
3. Energy from Waste