

MANAGING HEALTH AND SAFETY AT HOUSEHOLD WASTE RECYCLING CENTRES (HWRC)/CIVIC AMENITY (CA) SITES

This guidance has been developed by the Waste Industry Health and Safety (WISH) Forum to help control safety and health risks in the waste and recycling industry associated with the operation of household waste recycling centres (HWRCs). The Health and Safety Executive (HSE) was consulted in the production of this publication. It endorses the sensible, proportionate, reasonable, and balanced advice on managing risk during waste-related activities as set out in this guidance.

For ease of reading, this guidance is split into two sections: Section 1 covers the general risks associated with HWRC site operations, and section 2 the specific risks associated with household hazardous wastes at HWRC sites.

Tips, discussions, case studies, and notes – in WISH documents tips, discussions, case studies, and notes are sometimes provided in green tint boxes. Tips, discussions, and case studies are informal advice, experience, and ideas aimed at helping operators manage risk. They are not part of formal guidance. Notes expand on specific issues, give clarification, highlight issues, and provide explanations. Notes are part of formal guidance.



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Introduction, managing risk and ways of working

HWRC/CA sites have been a feature of GB waste and recycling for decades. Historically, they were sites where members of the public, and sometimes trade customers, could dispose of wastes not normally collected at the kerbside or excess wastes left-over from household collections (where the term 'members of the public' is used in this guidance it includes trade customers). For example, bulky wastes, garden waste, rubble, domestic white goods etc and a limited number of hazardous wastes, such as waste oil, automotive lead acid batteries, gas cylinders etc. Over time the role of HWRCs has expanded to include the separation of a variety of waste types for recycling and an extended range of household hazardous wastes. HWRCs are also unusual because they are open to members of the public, unlike the vast majority of other types of waste site, and increasingly because:

- Greater separation of waste types for recycling usually involves the placement of more-and-more containers on a HWRC site, in many cases without the footprint of the site being expanded. This can pose challenges in areas such as safe traffic management
- Members of the public may act and behave in ways which you as a HWRC site operator would not want them to. Members of the public are not trained and experienced waste and recycling workers and may not be aware of the hazards and risks posed by waste operations (or in some cases they simply may not care)
- Accepting a wider range of household hazardous wastes on the same site can present issues relating to the safe storage, separation, and segregation of such wastes

These issues are included in many of the sections below and you should take account of them in the operation and management of your HWRC site/s.

In the past the term 'CA' (civic amenity) site was typically used, although in some local authority areas alternative names have been used, such as 'tidy tip', 'garbage garden' etc. Nowadays the term HWRC (household waste recycling centre) has become more universal, and is the term used throughout this document, although for many members of the public the sites will always be the local 'dump/tip'.

This guidance is mainly aimed at operators and designers of HWRC sites. HWRCs may be operated direct by a local authority or contracted to a third-party company. This guidance also applies to local authorities as clients – contracting-out does not remove a local authority's safety responsibilities.

Note – it is not the intent of this guidance to repeat advice which is easily available elsewhere, such as on incident investigation and reporting, training and competence, the provision and use of PPE etc. This guidance should not be considered as a 'one-stop-shop' on how to operate a HWRC site safely. However, where there is a HWRC-specific aspect of general safety guidance and law it is covered.

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The process of risk assessment resulting in the production and putting in place of safe ways of working applies as much to HWRC sites as any other type of waste and recycling facility. General guidance on risk assessment is available from the HSE at: [HSE risk assessment webpage](#). Guidance on safe ways of working in waste and recycling operations is available on the WISH website at: [WISH website](#). Specific issues for HWRC sites include:

- **Members of the public** using HWRC sites may not act or behave as expected or as you might want them to – this is foreseeable and should be included in your risk assessments and ways of working, including supervisory requirements, signage etc. For example, virtually all HWRCs have a rule that children should stay in cars, but such rules may not always be obeyed – good levels of supervision are critical at HWRC sites
- **Household hazardous wastes** are often accepted at HWRC sites which would normally only be managed at specialist facilities with specialised personnel. One of the main risk reduction factors is that HWRCs only accept and store small and limited quantities of hazardous wastes. This usually involves removing hazardous wastes frequently to disposal facilities to keep the quantities stored at the HWRC to a low level. Your risk assessments and ways of working should set out the maximum quantities of each hazardous waste type it is safe to store on your site and the processes to ensure that these limits are not exceeded
- **A limited footprint/size** is a feature of many HWRC sites while at the same time being asked to do more-and-more, such as separating more different types of waste for recycling or accepting a wider range of household hazardous wastes. This can pose challenges for HWRC operators and needs to be accounted for in your risk assessments. Ultimately there is a limit to what you can do on any one site safely – you should consider what the limits on your site are and stay within these, even if this means not doing or ceasing an activity, accepting a specific waste type etc. This would also include local authority clients not placing unreasonable or excessive demands on their contractors

Tip – obtain a plan/map of your site, then cut-out pieces of paper/card (to scale) of the various containers and similar on site. For each list any separation and/or segregation requirements, such as gas bottle cages being kept apart (or separated by a suitable fire wall). Consider issues such as safe traffic management, access to containers etc then move the pieces of paper/card around until you achieve the optimal situation. It is far easier to move pieces of paper/card around than to move real containers until you achieve the best outcome. Accept that you may not ‘get it right’ the first time, and that if something changes that you will need to go through the process again.

Note – some HWRC sites operate a ‘shop’ where items for re-use are for sale. This guidance does not directly cover such activities. If your HWRC includes a ‘shop’ you need to consider the risks, such as potential additional traffic movements, and other matters such as public and product liability insurance.

1. HWRCs – general risks

1.1 Traffic management

General guidance on safe traffic management in the workplace is available from the HSE at: [HSE workplace transport webpage](#), and in the HSE's guidance 'A guide to workplace transport safety – HSG 136', available at: [HSG136](#). Waste and recycling specific guidance is also available in WISH WASTE 09 'Safe transport in the waste management and recycling industry', available at : [WASTE 09](#). In addition to the guidance noted above, the information given below is specific to HWRC sites, and see below in this guidance for issues relating to the moving and lifting of containers/skips.

It is a theme of this guidance that members of the public may not behave or act as you would want them to. This applies especially to traffic management, both when the public is driving into and around your site and while they are a pedestrian and out of their vehicle. For example, on its own placing a row of traffic cones to separate an operational area of a HWRC where mobile plant and lorries are moving around, from the public area of the site to prevent the public walking or driving into the operational area is unlikely to be effective. Most members of the public will likely obey the row the cones, but some will not and may simply walk/drive through the row. This type of behaviour is foreseeable, and you should take account of this type of issue in your traffic management planning.

The advice in the traffic safety guidance mentioned above, such as WISH WASTE 09, relating to minimising reversing, one-way systems where practical, appropriate speed limits, adequate lighting etc should be followed. However, it is accepted that for many smaller HWRC sites eliminating reversing and the use of one-way systems may be impractical. In these situations, the only practical control may be to limit the number of vehicles allowed on site at any one time by setting a safe maximum. If the number of vehicles on site reaches this number, you should stop further vehicles at the site entrance and not allow them on site until someone has left – a 'one-in-one-out' system.

In general, HWRC sites have two main traffic flows: members of the public depositing wastes at the site and collection lorries and heavy mobile plant moving and lifting containers etc. Where practical these two flows should be physically segregated. For example, a split-level HWRC site where members of the public are confined to the upper level and operational vehicles/plant to the lower level, or the provision of effective physical traffic barriers to separate public and operational areas. On smaller sites where such physical segregation may not be practical, separation of traffic flows by time may be a practical solution. For example, only allowing lorry movements, lifting, and moving containers etc out-of-hours or temporarily shutting a site/area of a site. In all circumstances, it is not acceptable to have mixed public and operational traffic flows in the same area.

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Other issues to consider include:

- Use 'Highway Code' standard signs to indicate vehicle routes, speed limits, pedestrian crossings etc – this type of sign is what the public is used to on the road
- For larger sites, the use of clearly marked speed-humps or similar can be useful, in particular at HWRC site entrances or around the site where vehicles may be able to 'speed-up'
- Providing a reception employee at the site entrance ('meet-and-greet') can help to reduce congestion, direct the public to the waste container/s they require to avoid them driving 'aimlessly' around site, stopping traffic at the gate when the maximum safe number of vehicles on site is reached, directing queuing vehicles waiting to enter the site etc
- Clear and easy to read signage at site entrances can assist in members of the public following the correct traffic routes, identifying the containers they need etc
- Providing high-level waste container contents signs (mounted on poles etc) can help the public find the container/s they want more easily
- If queuing onto the public highway is an issue, liaison with the highways' authority (typically the local authority) and the police may be required
- Provide separate designated car parking/unloading/drop-off zones. Consider using traffic barriers, bollards, kerbs, painted road markings etc to demark these
- Display site rules clearly and obviously, such as that children and pets are to remain in cars and that if members of the public are unsure where they need to go on site etc that they can and should ask a site employee for help
- Take account that some members of the public may be elderly or disabled – again a meet-and-greet employee can assist here
- During the Covid-19 pandemic many HWRC sites put a 'pre-booking' system in place involving the public booking a timeslot to visit their HWRC in advance. Some HWRCs have continued this practice after the pandemic as it helps 'smooth-out' peaks and troughs in traffic flows, reduce any queuing onto the public highway etc, in particular during busy periods
- In all cases, good levels of supervision on traffic safety (in particular with the public) is required



From left to right: road markings, pedestrian crossing, inline parking etc at a HWRC site, example of a split-level HWRC, high-level container signage, example one-way system

- Some HWRC sites include a 're-use' shop or similar where items 'rescued' before they are disposed of etc are offered for sale. As noted in the introduction to this document such facilities are not directly included in this guidance. However, re-use shops and similar may pose specific traffic issues. For example, at some HWRC sites the re-use shop might be located on land adjacent to the HWRC site itself, sometimes with its own car parking to encourage the public to use the shop even if they are not using the HWRC itself. Some site rules may be relaxed in such adjacent areas, such as rules requiring children to remain in cars. In these cases if there is access from the re-use shop etc area onto the actual HWRC site itself effective traffic management and segregation should be in place – children may not always obey signs, a row of cones etc. If your HWRC site/s include re-use shops or similar you should include any specific risks from such in your traffic risk assessment and plan.

1.2 Moving/lifting skips/containers and compacting wastes

At all HWRC sites waste containers need replacing/lifting, and at some HWRCs wastes in larger containers are compacted using mobile plant or similar for more efficient off-site transport.

Lifting and moving containers

Full containers at HWRCs need to be removed and replaced with empty ones. This is either achieved by lifting the container direct from where it is normally located on the site and replacing it or by moving the container to another part of the site to await lifting and moving an empty container into its place. Lifting of containers can be via typical waste collection lorries, such as skip motors, hook-lift/roll-on-off collection lorries etc, or by other types of lorry, such as hi-ab for glass bottle and clothing banks, curtain-sided lorries loaded by forklift for automotive battery containers etc. Guidance on typical waste containers and their lifting is available in WISH WASTE 06 'Skip and container safety' at: [WASTE 06](#). Other WISH guidance and advice on waste collection activities also contains useful information and is available on the WISH website at: [WISH website](#).

For smaller containers, such as wheeled bins, moving full containers to another part of the site and replacement can often be achieved by hand. However, for larger containers movement is typically by using mobile plant or a lorry – they are too large, heavy etc to be moved manually.

- Whether containers are being lifted, replaced, or moved there should be sufficient space available for the lorry or mobile plant involved to operate safely, including for manoeuvring and foreseeable events such as a container 'coming-off' lifting equipment during replacement. Roll-on containers in particular can travel a considerable distance directly away from the vehicle if they come off their hook as they are being lifted (see case study below)
- Pedestrians should be excluded from the area when containers are being lifted, replaced, or moved by mobile plant/lorries. This can be achieved by physical means, such as at a split-level HWRC or where a site is physically split into a public area and operational area by effective fixed traffic and pedestrian barriers, or by temporarily closing an area of a site when containers are being replaced or moved, or for small sites either only replacing and/or moving containers out-of-hours or temporarily closing the whole site during such operations
- If an area of a site is to be temporarily closed during lifting etc of containers, then careful consideration should be given to the method used. For example, using a row of traffic cones or simple mobile barriers on their own is unlikely to be completely effective – there are numerous examples of members of the public still trying to place their wastes into containers while they are being lifted. More substantial mobile pedestrian barriers such as used at roadworks may be more appropriate than cones and are likely to be more effective. However, and whatever physical provision is used, supervision is also required, such as one or more employees stood at the row of cones/barriers instructing pedestrians to keep clear

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- Whichever method is used, it should effectively keep pedestrians (employees and public) at a safe distance. If a pedestrian does enter the area lifting, moving etc of containers **must** stop immediately and not recommence until the area is clear, and it is safe to do so

Case study – a roll-on container was being lifted at a HWRC site. The driver believed the hook had engaged fully with the lift bar on the container – it had not. The container came-off the lift hook and rolled 10 metres before coming to a stop. Either keep all pedestrians well (at least 10 metres) away or provide adequate and robust stops/barriers to prevent such ‘runaway’ containers.

Compacting wastes and ejecta

This section covers the compaction of wastes in containers using heavy mobile plant, such as a backhoe loader equipped with an ‘elephant’s foot’ or similar, or the use of a ‘roller-packer’ attachment etc. It does not cover the use of static compactor units (for compactor units see below). In addition to traffic issues (see above on lifting of containers), the use of heavy mobile plant, roller-packers etc. often poses the risk of ejecta during compaction. This can depend on waste type. For example, waste wood is more likely to be ejected during mobile plant etc compaction than ‘softer’ waste materials. Ejecta can be a significant issue – incidents have been recorded where pieces of waste have been ejected 20 or 30 metres during compaction causing damage to cars and injuries.

- Consider first whether you really need to compact wastes – does the benefit in transport cost reduction outweigh the potential risks involved?
- Mobile plant should be used considerably when compacting wastes – pushing down on the waste rather than using the plant’s attachment/bucket as a ‘pile driver’ (such use can also promote accelerated wear and damage to plant linkages etc)
- Pedestrians (employees and the public) and cars/vans should be excluded from the area during compaction. The extent of this exclusion zone may mean that for smaller sites the HWRC needs to be temporarily closed or that compaction only takes place out-of-hours
- Ejecta fencing can assist, but needs to be high enough to effectively block ejected items



From left to right: sliding gates at a split-level site – closing the gates prevents the public loading containers during lifting, example of a roller-packer, example containers lifted by hi-ab – suitable space is required for lifting etc

1.3 Slips, trips, and falls

Slips and trips are one of the main causes of accidents on waste and recycling sites, and at HWRCs are a common cause of civil claims from members of the public. Falls from a height are less common but pose the risk of serious injury or worse. General guidance on slips and trips is available from the HSE's website at: [HSE slips webpage](#), and on working at a height at: [HSE work at height webpage](#).

Slips and trips

The general provisions of guidance on slips and trips, such as maintaining floor surfaces in good condition, well drained, free from potholes and similar, use of salt/grit in icy weather, prevention of liquid spillages, good housekeeping, lighting levels etc apply equally to HWRC sites. However, specific issues for HWRC sites include:

- Empty or replace waste containers before they are completely full to reduce the risk of slips and trips from waste spillage – any 'walking on wastes' should be avoided
- Where liquids are stored, such as waste oil tanks, provide bunding, spillage kits, absorbent granules etc and clean-up spillages promptly
- At some containers wastes may be decanted from smaller containers, bags etc. For example, green waste containers where the public are asked to tip wastes out of plastic bags before depositing their waste or waste oil tanks where the public may pour oil from a smaller container/can. Disposal facilities for the small containers, bags etc should be provided, such as providing a bin at the container to place plastic bags, emptied oil cans etc into
- Most guidance on slips and trips includes the use of suitable footwear. This can be controlled for employees. However, and despite signage advising that 'stout and appropriate' footwear should be worn, members of the public will still attend HWRC sites in flip-flops, high-heels etc – your slips and trips assessment/s should take this into account

Platforms, ramps, and steps

Many containers at HWRCs can be accessed at ground level, such as bottle and clothing banks, oil containers, standard skips etc. However, for larger hook-lift/roll-on-off etc containers the sides are too high for loading from the ground. This is not an issue for split-level HWRC sites. At other sites often platforms accessed via steps or ramps are provided. These can pose significant slip and trip hazards.

The decision whether to provide ramps or steps can be difficult and there are pros and cons associated with each. For example, ramps can offer an easy, consistent incline, and may allow the use of mechanical handling aids (barrows, trolleys etc) but they also have the risk of run-away of such barrows etc (barrows, trolleys etc used at ramps should have braking systems that activate automatically and need to be 'held-off' by the person using the barrow, trolley etc). Conversely, for example, ramps usually occupy more space than steps.

Ramps should:

- Not be excessively steep (for example, the maximum recommended incline for wheelchair ramps is 1:20 – this can be used as a ‘rule of thumb’ at HWRC sites)
- Ideally, have a ‘dogleg’ or other 90 degree or similar bend in them to help stop ‘runaway’ barrows/trolleys, sliding members of the public etc (such bends can also help to minimise the floorspace taken-up by ramps)
- Be surfaced in or constructed of slip resistant material/s

Steps should:

- Have broad treads, so far as is practical in the space available
- Be fitted with risers to fill the gaps between treads to prevent feet being caught
- Tread ‘nosings’ should be clearly visible such as by being painted yellow (or other bright colour), fitted with yellow and black hazard tape etc
- Resist the build-up of contaminants, detritus etc (the use of fine gratings as tread material can help with the shedding of fluids, allow finer solids and detritus to fall through etc)

Both ramps and steps should:

- Be fitted with handrails. Signs asking the public to use handrails have been shown to reduce slip and trip frequencies at steps and ramps. Good practice would be for handrails to be at least 1.1 metres high. However, sections alongside bins/containers where members of the public deposit wastes may be lower for manual handling reasons, although adequate levels of fall protection should still be maintained
- Be maintained in good condition, kept free of detritus, spilt wastes, liquids etc so far as practical. Members of the public slipping/tripping on spilt wastes is a common accident type at HWRCs and particular emphasis should be placed on clearing spilt wastes from steps and ramps as soon as practical
- Be included in daily and routine checks and inspections: in good condition, stable, welds/nut and bolt fastenings etc undamaged, tight etc, free from detritus etc and clean (it may also be advisable to inspect for detritus, spills etc through the day and record these checks). You should also consider periodic independent structural inspection, such as via your insurer
- Platforms at the top of ramps and steps should be of a sufficient size, fitted with handrails, slip resistant, kept free of detritus etc, and included in daily and routine checks and inspections
- Some steps and ramps are fitted with wheels. These should be included in routine checks and inspections to ensure they are working, rotate freely, are undamaged etc (see case studies below). Braking systems and/or locking mechanisms to fix steps/ramps to containers should also be in place to prevent unintended movement of wheeled steps and ramps

Case studies – at a HWRC site the wheels on a set of access stairs had become damaged. As a result, operatives had taken to ‘levering’ the steps around using scaffold poles. Almost inevitably one operative sustained a serious back injury. At several HWRC sites operatives have forgotten to engage brakes on wheeled steps and ramps resulting in the steps/ramps rolling-away, sometimes with a member of the public still on them. In a similar manner, there have been multiple occasions at HWRCs where mechanisms to lock steps/ramps to containers have become damaged and ineffective or operatives have forgotten to engage the locking mechanism, again resulting in steps/ramps rolling away. Checks and inspections should be aimed at structural and mechanical condition, and also that braking/locking mechanisms are still operative and are actually used.

Falls from a height

The general content of guidance such as that mentioned above on falls should be followed, for example the provision of appropriate fall protection fencing at any significant drops. However, specific issues for HWRC sites can include:

- Climbing onto or into skips, hook-lift/roll-on-off and similar containers is unsafe (both because of the fall risk and other reasons such as exposure to wastes) and is not acceptable. This applies equally to employees and members of the public. If a non-conforming waste is identified in a container, then reach tools or similar should be used to extract it, or if this is not practical the receiving off-taker warned so that the non-conforming item can, if practical, be removed when waste is tipped at the off-taker. Trimming of loads should be conducted from ground level or by the use of mobile plant
- For containers which require sheeting, collection lorries should be fitted with auto-sheeting systems, or the container sheeted from ground level without climbing, or a suitable sheeting gantry provided, and used
- Members of the public can have a habit of climbing on fall protection fencing, railings, handrails at access platforms etc. This issue should be included in supervision and monitoring, and any such behaviour challenged



From left to right: two examples of ramps at HWRC sites, and two examples of steps

1.4 Manual handling and moving heavy items

HWRC site operations can pose significant manual handling risks. Guidance on manual handling is available from a variety of sources, including from the HSE at: [HSE manual handling webpage](#). This guidance should be used as an input to your manual handling assessment/s and safe ways of working. In addition to such guidance, specific HWRC site issues can include:

- Handling aids such as sack-trucks and pump-trucks, should be provided as relevant to the tasks performed. For example, sack-trucks to move domestic white goods such as fridges (note – such handling aids need to be subject to routine checks and inspections, as would be the case for any such item of work equipment)
- Where waste items are placed in open-ended containers, ramps should be provided at the container opening to allow items to be moved into and around the inside of the container
- At some HWRC sites 'plant assist' is used to move larger items such as fridge-freezers, for example using a telescopic handler. In these cases a safe way of working should be in place. In brief, with all pedestrians at a safe distance the item of mobile plant moves to the area of the lift and its bucket lowered to the ground, then engine off and keys out (as the plant operator often helps with loading the item into the bucket, keys should be retained by the plant operator). The item is loaded into the bucket and all pedestrians move to a safe distance before engine restart and lifting of the bucket. Unloading is the reverse. The principle being to avoid the unintended movement of the bucket while an item is being loaded into or unloaded out of it. Buckets should also be of a sufficient size and design that the item being moved sits safely within the bucket and cannot fall-out during transit
- Consideration should be given to matching containers to the method of removal/replacement. For example, if WEEE (waste electrical and electronic equipment) is stored in a caged stillage which is collected by a tail-lift lorry, then the stillage should be wheeled, or moved by a pump truck etc, to allow easy loading onto the tail-lift of the lorry
- One reason people dispose of items is because they are damaged or broken. Employees should be aware of this. For example, instructed to test 'handholds' before lifting to avoid incidents such as a handhold breaking/coming-off partway through a lift/moving the item
- Standard 'lifting a box from the floor' manual handling training is unlikely to be sufficient. Waste items brought to HWRC sites are often an odd shape, difficult to hold onto, weighted more to one end than the other (such as old cathode ray tube televisions) etc. Training should be tailored to the type and nature of the tasks performed

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- It is common for HWRC site employees to assist members of the public, such as in lifting items out of the cars etc. However, you should consider what the limits to such assistance are. For example, assisting an elderly person with their green waste bags may be good service provision. However, you may decide, for example, that if a person arrives at your HWRC with a large fridge-freezer which took three people to get into the member of the public's car that they should have brought the same three people to help them unload rather than assuming that HWRC employees will assist. This is a decision for your manual handling assessment/s
- Members of the public can bring all sorts of unforeseen items to HWRCs many of which can be hazardous if an attempt is made to lift or move them inappropriately. HWRC staff should be encouraged to bring such items to the attention of management and **not** to attempt to move or manipulate them until a carefully considered plan of action has been agreed which ensures that all of the risks have been eliminated or minimised (see case study below)
- At some HWRC sites hinged 'chutes' are provided at the top rail of fall fencing around containers so that members of the public can place heavier items onto the chute and push the waste into the container rather than having to lift items over fall railings etc
- At some HWRC sites straps/chains and mobile plant are used to move heavy items. This **must** only be done when adequate training has been provided, appropriate equipment, such as lifting-eye attachments, are in place and used, a lifting plan has been written and is in effect and all of the other requirements of LOLER (Lifting Operations and Lifting Equipment Regulations) are in place, including routine inspection of lifting straps/chains and attachments. It is not acceptable to simply 'loop' a chain over an item of mobile plant's bucket to lift/drag an item around site, or similar

Case study – at a HWRC site a member of the public arrived with a large refrigeration unit in a trailer. It took five site operatives to lift the unit out of the trailer and put it on the floor, stood on one end. The unit was 'top heavy' with most of the weight at the upper end. The operatives attempted to place the unit on its side to load into a loading shovel's front bucket for movement to another part of the site, the unit toppled-over onto one of the operatives resulting in serious crush injuries. If unusual items are presented at a HWRC site operatives should not just 'carry-on' and try to solve a problem in an ad-hoc manner. Advice should be sought, the issue risk assessed, and a safe way of working arrived at.

1.5 Machinery safety and compactor units

At some HWRC sites waste compactor units are used, of the type commonly placed at commercial waste customer premises. These machines are large and powerful and can pose significant risks.

General safety guidance on machinery used in waste and recycling is available in WISH WASTE 33 'Principles of machinery safety recycling and recovery plant' at: [WASTE 33](#), and specific guidance on isolation and lock-off in WISH WASTE 29 'Practical lock-off advice recycling equipment' at: [WASTE 29](#). WISH guidance on compactor units is also available in WISH WASTE 08 'Compaction equipment user and public safety', at: [WASTE 08](#). If you have compactor/s on your HWRC you should read and understand all of this guidance and take account of their contents in your assessments and safe ways of working.

Compactor units come in various designs, although they all have some common features. Waste is fed into the compactor via a hopper. The hopper may be open-topped or covered with a feed opening through which wastes are fed into the hopper. Whether open-top or covered it is common for hinged or sliding doors, hatches etc to be fitted at feed hoppers. These are often interlocked (although see below on not relying on interlocks). Once in the hopper wastes are compacted via a hydraulic ram. The two most obvious, and usually serious, machinery 'danger zones' are the front movement of the ram as it compacts wastes and the reverse movement of the ram as it retracts after compacting the waste (hydraulic rams move backwards with as much force as forwards). For the forward movement of the ram at the feed hopper safeguarding is usually provided by the height of the loading edge on the hopper (or for covered hoppers, the height of the lower edge of the feed opening) preventing 'reaching-over' access. For the rear of the ram, an access hatch is also usually provided for maintenance, cleaning etc. These hatches are typically bolted in place – fixed guarding. Specific issues with compactor units at HWRC sites include:

- Compactors **must** have a means of secure isolation such as an isolation switch, not just hard-wired into a power supply and reliant on the 'ignition key' in the unit's control panel
- Compactors **must** be securely isolated and locked-off at their isolation switch when being loaded by members of the public, even if the compactor is fitted with an interlocked hinged hatch, sliding door etc at its load hopper – interlocks on compactor units are nearly always of a low 'safety performance level' and should not be relied on – they can and have failed and/or have been defeated
- Secure isolation and lock-off **must** also be in place for any access to the rear (or front) of the ram, such as for cleaning, maintenance, blockage clearance etc. Emergency stops **must not** be relied upon as isolation or lock-off

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- Steps, pallets, or other 'platforms' **must not** be placed in front of feed hoppers/openings – these may defeat the 'reaching over' distance protection provided by the height of the hopper edges/lower edge of openings
- Hopper load height **must not** be modified in any way, such as by cutting-away part of the lower edge of an opening/hopper load edge to make loading easier
- At some HWRC sites only employees are allowed to load compactor units – members of the public deposit their wastes into a marked 'drop-off-zone' from which site employee/s take the waste and load the compactor unit. Experience is that this approach can reduce the incidence of blocks and 'bridges' in compactor feed hoppers and may be the preferred option
- At other sites members of the public are allowed to load their wastes direct into compactor feed hoppers. In this case, when compactor load hoppers are 'full' members of the public should be effectively excluded to a safe distance before the compactor unit is started and wastes compacted. As with traffic safety, simply dropping a traffic cone or similar in front of a compactor unit to stop members of the public from approaching, trying to put wastes into the hopper etc is unlikely to be completely effective and supervision is also required. Where members of the public are allowed to load compactor units, they should be supervised closely by a HWRC site operative
- Compactor unit control panels should not be easily accessible by members of the public. In some cases to achieve this a hinged, lockable hatch over the control panel may be required
- Some compactors have a gap between their lower edge and the ground. If this gap is too wide there is the potential for a person to crawl under the compactor and access the ram and its components. Any gap should be narrow enough to prevent this
- Various technical and 'EN' standards include requirements on acceptable gaps/openings in guards and other safeguarding measures. Typically, these allowable gaps/opening are based on adult ergonomic data. While virtually all HWRC sites have rules requiring children to remain in cars, it is foreseeable that such rules may not always be obeyed. You should consider this relating to gaps such as those under compactor units and whether any gaps/opening would be effective at preventing child access as well as adult access
- Some compactor units are mounted on rails or tracks and are designed to be moved ('dollied'), such as between containers. During such 'dolly' members of the public should be kept at a safe distance
- Many HWRC sites suffer from trespass and vandalism, in particular overnight. At the end of the day compactor units **must** be securely isolated and locked-off, and daily 'before-use' checks and tests should include looking for damage and tampering, in addition to the normal items to be checked such as all guarding in place, emergency stops and interlocks working etc (see WISH WASTE 33 for details on checks and tests)

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- At some smaller HWRC sites static compactor units may not be used, but at busy times a RCV (refuse collection vehicle – bin lorry) is parked on site and members of the public deposit their wastes into the RCV's load hopper. In these cases the RCV's engine should be turned off and the keys removed while loading is taking place. As with static compactor units when waste requires compacting the public should be excluded from the area before the vehicle's engine is turned back on and the lorry's compaction system is activated
- Some local authorities offer a 'mobile HWRC' service. Typically, this involves a RCV parked at a convenient external location and members of the public deposit their wastes into the vehicle's load hopper. The same requirements as above apply – when the public are depositing wastes engine off and keys out and the public excluded from the area when compaction is taking place. Such mobile HWRCs are only suitable for 'standard' wastes compatible with the RCV's compaction equipment. Close supervision is required to ensure that members of the public do not load incompatible items, such as gas cylinders, heavy construction waste etc, into the RCV hopper



From left to right: compactor unit with a covered hopper – wastes are fed into the hopper via the opening in the side of the unit, open-top hopper compactor unit being fed by members of the public, example of too wide a gap under a compactor unit allowing crawl access to the ram, children trespassing at a HWRC site

1.6 Violence and aggression

The threat of abuse, aggression, and physical violence to staff at HWRC sites can be a very real issue, and a contributor to stress at work. Work-related violence is not just physical – it includes verbal abuse and threats. It is more common in jobs where employees have face-to-face contact with the public, such as at HWRCs. When physical violence is involved, the injuries to those workers affected are usually obvious (industry incident records show that HWRC workers have been stabbed, beaten with baseball bats, threatened with firearms etc). However, those subjected to constant and repeated verbal abuse and threats may suffer stress, anxiety, or depression. Research indicates that work-floor-level waste and recycling operatives are as likely to suffer from work-related stress and depression as management.

- All incidents of abuse, aggression and violence should be reported and investigated, including to determine why the incident occurred. For example, irritation over an overlong queuing time, frustration at not being able to find the correct waste container quickly, discontent regards a restriction at a HWRC site (see discussion green tint box below) etc
- The results of investigations should be analysed periodically, and any patterns addressed with the aim of reducing any 'flashpoints' for abuse and aggression
- Serious incidents should be reported to the police and followed-up
- Training may be considered, such as conflict resolution training, to help HWRC site employees deal with and manage incidents of aggression and abuse
- Publicity, such as on local authority websites, on any restrictions can help with members of the public understanding the restrictions so that they expect these in advance rather than unexpectedly being informed once at a HWRC site and reacting 'off-the-cuff'
- Where queuing is an issue placing boards stating how many minutes it will likely take to enter the site can help, such as those sometimes in place at airport security queues etc
- Physical measures can be considered, such as security screens at weighbridges, providing a secure refuge (lockable building, room etc) that employees can retreat to etc
- Use of CCTV, personal cameras ('bodycams'), ANPR cameras etc, and clear signage that such surveillance is in use, that any incidents will be reported, and that abuse and aggression towards employees will not be tolerated
- Consideration can be given to providing free and confidential counselling and advice services to employees so they can talk-over any issues with an independent and trained person
- Instruct employees to walk-away from abuse or aggressive persons rather than confront them
- Some HWRC sites are in remote locations and may only be single-person operations, or there are times when only one operative is on site. Consideration should be given to communications, in particular where mobile telephone reception may be poor – radio or other systems may need to be considered

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- Other measures may also need to be considered, such as 'panic buttons' which activate a site alarm allowing assistance to be summoned quickly

More information on managing violence at work is available on the HSE website at: [HSE violence webpage](#), and on stress at work at: [HSE stress webpage](#). A series of videos on the topic of violence and aggression in waste and recycling operations, including at HWRC sites, is also available from the SWITCH (Scottish Waste Industry Training, Competency, Health & Safety Forum) website at: [SWITCH violence and aggression videos](#).

Discussion – many HWRC sites have restrictions/rules in place. For example, that trade waste is banned or charged for, a requirement for members of the public to prove they are residents of the local authority area the site is located in to stop 'waste tourism' from an adjacent local authority area, charging for or restricting specific types of 'quasi-domestic' and DIY wastes etc. While such restrictions may have a valid, usually economic, basis, they can be a 'flashpoint' for abuse, aggression, and violence if they are seen to be non-sensical, petty or 'jobsworth'. Local authorities and their contractors should consider the benefits of such restrictions, and how enforceable they are, compared to the risk of abuse and aggression, and how much time and effort is required to enforce them when site employees may be better occupied supervising etc. For example, one local authority imposed a restriction at a series of HWRC sites that only one item of sanitaryware (toilet, basin, bath, shower tray etc) was allowed. This being aimed at reducing the volumes of 'DIY-type' waste received by the sites. Typically, all this restriction resulted in was members of the public visiting multiple HWRC sites to deposit all of their unwanted bathroom suite: toilet at one site, bath at another, basin at a third etc. This restriction was a known flashpoint for abusive behaviour towards the HWRC site operatives in the area. Poorly conceived rules can create flashpoints for abuse and aggression and raise employee stress levels. They can put workers in the uncomfortable position of trying to enforce a rule they know may produce an abusive and/or aggressive response, raising their stress levels in advance.

1.7 Welfare, hygiene and first aid

During a recent round of HSE inspections at waste and recycling sites, 47 of the 564 sites visited were found to have welfare facilities below the required legal standard. That is, sites failed to provide basic toilet, washing etc facilities for employees that reached even the minimum legal standard. Hygiene is important in waste and recycling and is critical in reducing contamination and infection risks.

- Suitable toilet, washing facilities, and sanitary product disposal should be provided, and kept clean, including provision of hot and cold water, soap/handwash, towels or hand driers etc
- A clean, warm, and safe area should be provided for employees to eat, drink and rest in. For smaller sites this may only be part of a main office room or similar, but should still be provided
- Employees should not eat or drink in operational areas of HWRC sites
- Some HWRC sites are covered or in a building, but most are outdoors. Clothes drying facilities/area should be provided in case work has to be carried-out in the rain and suitable wet and cold weather clothing should be provided
- Provision of sunblock, moisturising creams etc should be considered where employees are expected to work outside for extended periods of time
- Where employees may not have quick and easy access to main buildings, such as meet-and-greet employees, provision of shelter such as a 'sentry box' or similar should be considered
- Where a smoking/vaping area is provided for employees, consideration should be given to locating this out-of-sight of members of the public – if a member of the public sees a site employee smoking/vaping they may decide they can also smoke/vape, anywhere on site
- Employees should be discouraged from 'liberating' furniture etc arriving at the site for use in either rest facilities or around the site. Such items are unlikely to be in a sanitary condition and can be infested with insects, pests, and harmful pathogens
- Dependent on potential exposures and your risk assessment you may wish to consider occupational health surveillance (see WISH WASTE 30 for advice at: [WASTE 30](#))

As for any other type of site, first aid and first aider provision is required at HWRC sites. This should also consider members of the public – despite advice, signage etc stating that members of the public should wear gloves, sensible shoes etc some do not, resulting in injuries which require treatment.

Case study – a HWRC operator decided as part of its first aid assessment that it would install AEDs (automated external defibrillator) at its sites. The rationale being that HWRC sites are places that significant numbers of the public visit so the risk of someone suffering a heart attack on site was a real possibility. Two weeks after installation, a middle-aged gentleman who had spent all day doing gardening passed-out while depositing green waste at one of the HWRCs. The emergency services attending commented that the use of the site's newly installed AED had likely saved the man's life.

1.8 Managing waste separation

For good sustainability reasons, HWRC sites are increasingly being asked to separate more-and-more different types of waste for recycling. In most cases this means more and a wider variety of containers. This can pose issues such as for safe traffic management (see above). It can also increase the risk of members of the public inadvertently placing their wastes into the wrong container/s. Some containers may be easier to identify and difficult to confuse, such as bottle and clothes banks – what else could they be for? However, what wastes to put in some other specific waste containers may confuse members of the public, or if they cannot find the correct container quickly and easily, they may be tempted just to put their waste into the nearest one, or in some cases they seem simply not to care.

The consequences of members of the public putting the wrong waste into the wrong container can vary. There may be a quality issue, such as plastic bags in garden waste reducing the quality of compost produced from the waste. There may be more serious consequences, such as a block of concrete or large steel item placed in a wood waste container which subsequently damages a shredder at the wood recycling site the waste is consigned to. Or a damaged cordless garden strimmer containing an embedded lithium battery being placed in a hard plastics container (the strimmer likely has a hard plastic shell, and the member of the public may not consider the risk of the lithium battery) resulting in a fire either at the HWRC or at the plastics recycling plant the waste is consigned to. It is accepted that ensuring that members of the public always put the right waste in the right container requires constant attention and will never be 100% effective. However, and dependant on the level of risk posed by different waste types and containers:

- Signs can be ignored, but good signage can help members of the public select the correct waste container. Examples of waste signage are available from several sources, including from WRAP (Waste and Resources Action Programme) at: [WRAP webpages](#). However, care should be taken to avoid signage 'overload' or a 'forest' of signs which may confuse
- Site supervision of members of the public should include advising members of the public which container to put their wastes into, such as by employees looking for higher-risk waste types being carried by the public and guiding the person to the correct container
- Frequent inspection of open-top and similar containers for non-conforming wastes before they become 'buried' under more waste (see above regards not climbing into containers)
- Use of a meet-and-greet employee can help – asking members of the public when they arrive at a HWRC site what wastes they have and then advising them on the location of the correct waste container/s
- For higher-risk waste-types use of 'see-through' containers, such as using cage stillages for SDAs (small domestic appliances – a category of WEEE waste) so that employees can see into the container more easily to identify non-conforming wastes

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- For higher-risk wastes consider the use of 'drop-zones' – a marked area in front of a waste container where members of the public deposit their waste rather than putting it straight into the container. Site employees can then transfer the waste to the container identifying any non-conforming wastes and/or higher risk wastes while doing so

In recent years, some HWRC sites have started splitting/opening black bags received on-site to separate the wastes inside them for recycling. At some sites this activity is carried-out by employees while at others volunteer members of the public undertake the task. This activity poses various hazards and risks, from manual handling and potential exposure to hazardous substances to bio-aerosol exposure and sharp objects in wastes. In 2019 the HSE has issued a position statement on the practice. This statement was included in a WRAP (Waste and Resources Action Programme) information document. However, this document is no longer easily available. WISH has produced the text from this position statement as a reference document (WISH REF 12) as it provides information which HWRC site operators may consider as part of their risk assessment process. WISH REF 12 is available at: [WISH reference documents page](#). This type of activity requires careful consideration and assessment, in particular if carried-out by members of the public, who are unlikely to be trained waste and recycling operatives and may display a degree of 'over-enthusiasm'. Strict and continuous supervision of members of the public undertaking this type of task is likely to be required. Information on bio-aerosols is available in the WISH information note INFO 23 'Bioaerosols in waste and recycling', available at: [INFO 23](#).

Signage is mentioned above relating to waste separation and also in other sections of this guidance. Where practical signs should include pictograms as English may not be the first language of some HWRC visitors. However, it is accepted this may be difficult for some signs, for example a sign stating that children should stay in cars would be difficult to portray as a pictogram. Signage has its limits and good supervision is also required.



From left to right: example waste type signage

2. HWRCs – household hazardous waste specific risks

2.1 Principles of good risk management for household hazardous wastes

Household hazardous wastes include items/substances such as lead-acid batteries, waste oils, gas cylinders, domestic batteries, fluorescent tubes, paint thinners etc. The term ‘hazardous waste’ (‘special waste’ in Scotland) is from environmental law. Many hazardous wastes would also be described as ‘dangerous substances/goods’ under health and safety law. For guidance on the environmental aspects of managing household hazardous wastes see information on the websites of the EA (Environment Agency) in England, SEPA (Scottish Environment Protection Agency) in Scotland, and NRW (National Resources Wales) in Wales.

Most HWRC sites accept and store limited quantities of household hazardous wastes. The key term here is ‘limited quantities’ – HWRC sites are not dedicated hazardous waste transfer stations and usually do not have the specialist staff and facilities of such sites. More detail is given in the sections on storage and for specific types of household hazardous wastes below. However, you should assess both the safe quantities for each of the different types of household hazardous wastes you accept at your HWRC/s and overall safe quantity. This will be informed by issues such as safe separation and segregation of some hazardous wastes. For smaller sites this may mean some types of household hazardous waste are not accepted because there is insufficient space to store them all safely.

Note – there have been examples when a HWRC site/s has reached its safe capacity either for a specific type of household hazardous waste or overall capacity because of problems with offtake and, as a result, wastes have been taken off-site to another location to be ‘stockpiled’ until the offtake problem has been resolved. This may be a valid short-term measure. However, if larger quantities of household hazardous wastes of any type are to be stockpiled elsewhere the location of storage should be suitable and managed adequately to take account of the higher risk levels associated with larger quantities – simply applying the measures in place at a HWRC site is unlikely to be sufficient.

The sections below on specific types of household hazardous waste are aimed at HWRC site operations. However, general guidance on the storage of dangerous substances is available in the HSE document HSG71 ‘Chemical warehousing – storage of packaged dangerous substances’, available at: [HSG71](#). This HSE guidance applies regardless of the size of a storage facility and includes a brief section on hazardous wastes. Much of the guidance given below is based on a pragmatic interpretation of HSG71, considering the limited quantities of household hazardous wastes/dangerous goods/substances stored at HWRC sites. You should read and understand HSG71 alongside this guidance. Please note that HSG71 does not include asbestos – see specific section below on asbestos.

Other legislation and guidance are also applicable to household hazardous wastes/dangerous substances, including but not limited to:

- DSEAR (Dangerous Substances and Explosive Atmospheres Regulations). These apply to household hazardous waste such as flammable liquids (thinners, solvents etc), flammable gases (LPG, butane, propane cylinders etc), aerosols etc. Guidance on DSEAR is available at: [HSE DSEAR webpage](#)
- COSHH (Control of substances Hazardous to Health). These apply to harmful substances in the workplace, including most household hazardous wastes. Guidance on COSHH is available at: [HSE COSHH webpage](#)

As noted in the introduction to this document, this guidance does not aim to be a one-stop-shop for the operation of HWRC sites – you **must** also still comply with the requirements of the law, including legislation such as the above relating to DSEAR and COSHH.

General principles

In basic terms, household hazardous wastes are managed at HWRC sites in stages:

- Reception and identification
- Segregation and movement to storage
- Storage
- Off-take

In addition, there are the issues of security and emergency planning.

HWRC sites should have procedures, processes and safe ways of working covering the above for each type of household hazardous waste they accept. In addition, a first consideration is whether there are alternative methods of managing household hazardous wastes other than their acceptance at HWRC site/s. For example, some local authorities contract specialised household hazardous waste collection services which collect wastes from households rather than them being taken to HWRC sites. Others require members of the public to take waste asbestos direct to a specialised asbestos disposal/transfer contractor in the area rather than to their local HWRC site.

In some other local authority areas a 'hybrid' approach is taken with some higher-risk household hazardous wastes (such as asbestos, pesticides etc) being collected from households and other lower-risk types (waste oils, paints etc) being accepted at HWRC sites. Assuming that the above approaches are not practical, then the stages listed above for the handling and management of household hazardous wastes at HWRC sites need to be considered.

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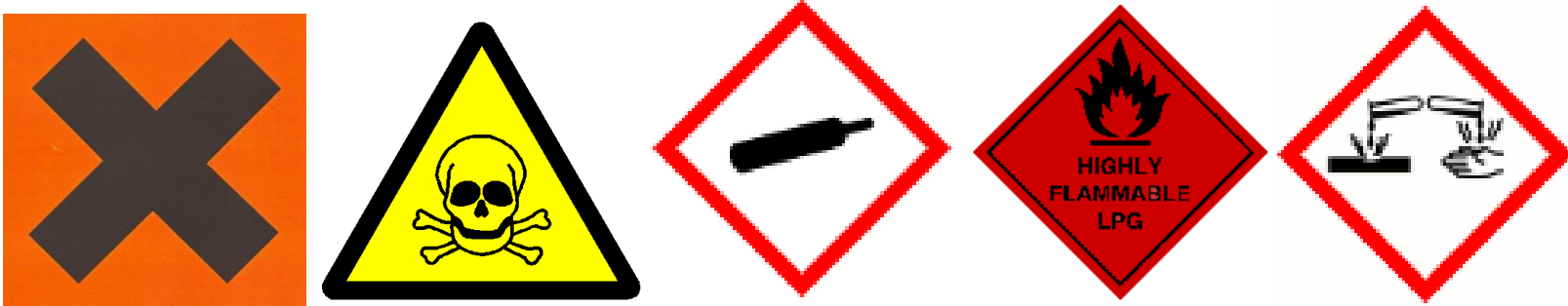
Unless the required competencies are available on site, HWRCs that accept hazardous waste should have access to competent, specialist advice. This should be readily accessible to all those operating and working at the site, including frontline employees. The source of competent advice may be from within the organisation/company, such as internal safety advisors and professionals, or through an external adviser, such as a consultant retained by the organisation/company.

Reception and identification

Ideally, household hazardous wastes should be identified at the HWRC site gate, for example by use of a meet-and-greet employee who can then direct members of the public to the correct container and/or summon another employee to assist the member of the public. If a meet-and-greet employee is not in place close supervision is required to identify and intercept household hazardous wastes as members of the public unload them. Good clear signage can also help, such as informing members of the public to seek assistance for gas cylinders, flammable liquids etc, although signage should not be relied on and is no substitute for good supervision. Publicity can also assist, such as information on a local authority's website advising the public to seek assistance when they arrive at a HWRC site if they are carrying various types of household hazardous waste.

Identification of different types of household hazardous waste is key to ensuring they are separated from general waste streams, allocated to correct storage, and managed safely. Site employees should be trained, instructed, and informed so that they can identify the types of household hazardous waste their site accepts and the condition of any packaging, container etc including:

- The types of container that household hazardous wastes accepted on a HWRC site are usually in, such as different types of gas cylinder (colours etc), differences between similar waste types, such as that between an automotive lead-acid battery and a lithium equivalent etc
- Understanding the hazards and risks posed by different types of household hazardous waste (HSG71 includes a section of the different hazard classes of dangerous substances, the signage/labelling used, the risks and hazards posed by each hazard class etc – this can be a good place to start regards employee information, instruction, and training)



Examples of hazard warning signs found on household hazardous wastes. Note – orange warning signs are no longer used but may appear on older containers received at HWRCs. Non-standard signs may also be used. Employees need to be aware of this type of issue and still be able to identify hazards

- Warning/hazard signs which may appear on packaging for the different hazard classes of dangerous substances (see HSG71 the HSE's website at: [HSE hazard class pictograms](#))
- To inspect the condition and integrity of packaging, containers etc, such as looking for damaged and leaking valves on gas cylinders, leaking lead-acid batteries, damaged lithium batteries, leaking pesticide bottles, damaged flammable liquids containers etc, and what to do if they do identify a damaged, leaking etc container
- That hazardous wastes they cannot identify should be taken to quarantine, if safe to do so, and assistance summoned
- That if they are not sure they should seek competent advice and not make assumptions

It can be a good idea to have information displayed, such as in the site office or other suitable location, so that HWRC site employees can refer to it easily. For example, charts showing the different types of gas cylinder, their colours, and markings etc, or posters etc of the different hazardous substance classes, the signs/labels used, and their associated hazards and risks.

HWRC site workers should not place themselves in danger when inspecting wastes. For example, if the valve on a gas cylinder is damaged and/or leaking, they should not attempt to rectify the fault, but clear the area and seek help. When inspecting potentially hazardous wastes, employees should wear suitable personal protective equipment (PPE), such as eye protection, gloves, and overalls/appropriate clothing.

It is not expected that HWRC site employees be experienced graduate chemists. It is expected that they have been given sufficient information, instruction, and training to be able to effectively identify the different types of household hazardous wastes accepted at their site, the hazards and risks posed, and be able to allocate hazardous wastes to their appropriate storage location.

Segregation and movement to storage

Once identified household hazardous wastes can be segregated and moved to their storage location. In some cases this may be a matter of pointing the member of the public to the correct container. For example, directing a member of public carrying aerosols to the cage stillage where they are stored. For other hazardous wastes employees may guide the member of the public directly rather than allow them to find-their-own-way, or HWRC site employees may themselves take the item to storage.

Some HWRC sites use 'drop-off-zones' for some types of household hazardous waste. For example, a marked area in front a gas cylinder cage for cylinders to placed-in awaiting movement into the cage by a site employee, or a table next to a lead-acid battery container where members of the public put their batteries so that site employees can inspect them, tape terminals, and place the batteries considerably and safely into the container. However, where such systems are used wastes should not be 'left-out-all-day' and should be placed promptly into storage.

Non-conforming wastes, wastes which cannot be identified, and hazardous wastes in damaged, leaking etc containers should be taken to quarantine if it is safe to do so. Quarantine areas should be as far away from other stored wastes as practical, have impermeable flooring and preferably bunded, such as by a concrete 'hump' at its entrance, and where practical physically segregated, such as a three-sided block bunker. Alternatively, some HWRC sites use a robust steel container as their quarantine 'area'. If enclosed the container should be appropriately ventilated to allow the escape of any gasses, vapours etc from the waste in it. Household hazardous wastes placed in quarantine should be taken off site as soon as practical to avoid quarantine areas becoming a 'dumping ground' for a mix of potentially incompatible hazardous substances.

Routine inspections of waste containers, skips etc may identify household hazardous wastes which have been inadvertently placed in general wastes. For example, a gas cylinder placed into a green waste skip, or lead-acid automotive battery put into a wood waste skip. If it is safe to do so such items should be removed (see above regards not climbing into skips and containers and the use of reach tools etc). If the item cannot be removed safely, then the whole container may need to be classed as contaminated and disposed of appropriately.

Storage

Different types of household hazardous waste need storing differently. For example, gas cylinders in appropriate cages, automotive lead-acid batteries in an enclosed, non-conductive box/container etc. You should determine the appropriate and safe type of container for each of the types of household hazardous waste you accept at your site. Guidance on specific waste types is given below. The types of container used for each household hazardous waste should be recorded in your written site storage plan, which should also include at the least:

- A site plan indicating the storage locations for each household hazardous waste type and location of the site's quarantine area
- Descriptions of the conditions of storage for each type of household hazardous waste accepted, such as separation and/or segregation requirements from other types of hazardous wastes, ignition sources etc, how the wastes should be stored, such as gas cylinders upright, whether lids and similar on containers are required to prevent water ingress etc
- Maximum safe storage capacity for each storage location/container for each type of household hazardous waste accepted and how you will ensure these limits are not breached, such as ceasing to accept a specific waste when a safe storage capacity is approached
- Monitoring requirements such as daily checks for leaks, the need to keep a log/inventory of stock for some types of hazardous wastes etc
- Reception and inspection procedures for specific wastes
- Handling requirements for the wastes

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A competent person/s should draw-up your storage plan. Consultation with employees during this process should be undertaken – they often know more about how a HWRC site operates and the problems and issues encountered than management. HWRC site employees should be instructed and trained on your storage plan, and this training reinforced periodically.

For some types of household hazardous waste, such as gas cylinders and flammable liquids, an up-to-date inventory should be kept. For example, a simple sheet on a clipboard kept in a weatherproof box at the location of storage, such as at each gas cylinder cage. At the end of the working day such inventories should be moved to your site's emergency services box (see below on emergency planning), or a copy kept and placed in the emergency services box.

Where household hazardous wastes are stored in cupboards you **must** ensure that incompatible classes of substance are not mixed. For example, pesticides should not be stored with flammable liquids. There should be adequate separation in cupboards to avoid the mixing of incompatible substances, including separate drip/spill trays to prevent spills mixing. Separate cupboards for each class of hazardous substance can reduce the risks of incidents.

The HSE's document HSG71 'Chemical warehousing – storage of packaged dangerous substances', available at: [HSG71](#) includes much useful information on storage and should be an input into your site household hazardous waste storage plan.

Off-take

The best risk reduction method for household hazardous wastes at HWRCs is to remove them from site. Your off-take arrangements should be based around this principle. For example, if you are aware that arranging off-take for a specific type of household hazardous waste can have a lead-time of several weeks you should start arranging for off-take well before the safe storage capacity for that waste is reached. This type of detail should be included in your storage plan.

Operators of HWRC sites consigning household hazardous wastes off-site need to understand the requirements to classify hazardous waste/dangerous substances and control their carriage on the road. Many household hazardous wastes would also be classified as dangerous for transport. You will likely need access to competent advice on this topic such from as a dangerous goods safety advisor (DGSA), internal safety and environmental specialists and/or the EA/SEPA/NRW as applicable. For further information on the transport of dangerous goods see HSE guidance available at: [HSE CDG webpage](#).

Security and emergency planning

Your site emergency planning process and written emergency plan should include household hazardous wastes. Your first aid provision should also include hazardous wastes, such as the provision of eye wash bottles close to where liquid household hazardous wastes are stored. Examples of the household hazardous waste issues you should include in your site emergency plan include:

- Spillage containment, clean-up, and removal procedures and where spillage handling materials and equipment are located, such as absorbent granules and drain covers
- Contact details for specialist assistance/competent advice, such as for damaged gas cylinders
- Any specific fire extinguisher etc use, such as the use of foam extinguishers with flammable liquids fires or not to use water extinguishers or hoses with lithium battery fires (lithium is water reactive and classed as 'dangerous when wet')

A copy of your emergency plan, and site storage plan, should be kept in an 'emergency services box' near the site gate so that the fire and rescue services etc can access them out-of-hours. Such boxes should be clearly marked and easy to identify and locate. Inventory sheets of specific household hazardous wastes should also be kept in your emergency services box out-of-hours and should be updated daily. You should consider inviting your local fire and emergency services to your site on a 'familiarisation visit'. Your employees should be trained and drilled in your emergency plan, and such training and drills should be repeated periodically.

HWRC sites are often subject to trespass and vandalism. Household hazardous waste containers should be clearly hazard marked/signed, kept secure and locked when not in use, and constructed to resist attempts to break into them.

The sections below give guidance on the handling and management of specific types of household hazardous waste. As for the rest of this guidance, the advice given is not intended to be comprehensive and is only one input into your risk assessments and safe ways of working. For some of the types of hazardous waste listed below links are provided to further reading and guidance to assist you in compiling your assessments and safe ways of working.

2.2 Aerosols

Most aerosols use a flammable propellant, such as butane, posing a fire and explosion risk. They may also pose other hazards, such as aerosols containing pesticides. The majority of aerosols accepted at HWRC sites are likely to be empty or near empty – one reason people dispose of aerosols is because they have ‘run-out’. However, you cannot assume this. For example, a member of public who has had a ‘garage clear-out’ may attend your HWRC sites with full or partially full aerosols. Available research supports this variability indicating the proportion of full or partially full waste aerosols in waste streams ranges from less than 5% to more than 10%. Aerosols contain less gas than larger cylinders. However, when stored together the cumulative volume of gas may be significant.

- Aerosols should not be punctured, crushed, or emptied. At least one fatal accident has been recorded at a waste and recycling site when an employee attempted to bale aerosols using a small hand-fed baler. The assumption made was that the aerosols were empty - they were not
- Aerosols should be stored in a suitably ventilated container, such as a cage container or mesh/caged stillage. In all cases the container should be fitted with a closing top. The top should be kept closed and locked when the container is not in use
- Aerosol storage containers should not be stacked
- Containers should be fitted with warning signs prohibiting smoking and naked flames, and with a flammable gas warning sign
- Storage should be segregated from other flammable wastes by at least 3 metres and by at least 6 metres from potential sources of ignition, such as electrical systems and waste battery storage containers
- No combustible material should be present at the container or in the storage area
- Do not expose aerosols to excessive heat, direct sunlight, or other thermal sources
- Wear eye protection and gloves when handling aerosols

Further information on aerosols, including waste aerosols, is available from the British Aerosol Manufacturers Association (BAMA) at: <https://bama.co.uk/library/108>.

2.3 Bonded asbestos products

This section covers the reception and storage at HWRC sites of bonded asbestos products, such as 'ridged' bonded asbestos cement roofing panels, asbestos bonded into bitumen, resins, rubber etc (although experience is that by far the most common form of asbestos received at HWRCs is bonded asbestos cement product). It does not cover fibrous and other forms of asbestos product, such as lagging, insulation, and insulating board. However, advice is given on what to do if fibrous or other types of asbestos are brought to a HWRC site by a member of the public.

A total ban on the use of all asbestos materials was not implemented until 1999, although some types of asbestos were effectively banned before this. It is estimated that perhaps 1 million buildings in GB still contain some form of asbestos. However, as time has moved-on significant amounts of the higher-risk types of asbestos have been removed from buildings. Industry experience is that asbestos containing materials brought to HWRCs by the public are now almost always bonded asbestos cement products such as roofing panels. As noted above, this section does not cover directly other forms of asbestos products that have a high tendency to release fibres and are more friable in their nature, such as lagging, insulation and asbestos insulating board. General guidance on asbestos, where it is found, what it looks like, who can work on it, its hazards, and risks, and how to handle it is available on the HSE's website at: [HSE asbestos webpage](#).

Before deciding to accept bonded asbestos product at a HWRC site, you should first consider if there is an alternative. For example, in some local authority areas members of the public are required to take bonded asbestos product direct to a specialist disposal site or specialised waste transfer station rather than to their local HWRC. In other areas a household hazardous waste collection service is offered where asbestos is collected direct from households. If you do decide to accept bonded asbestos product at your HWRC site/s the specific equipment and resource required, training needs etc are considerable and need consideration.

Accepting bonded asbestos products involves a significant training requirement, PPE/RPE (personal protective equipment/respiratory protective equipment) and other resources, suitable location for and type of container etc (for detail see below). You will also need access to competent advice, either from an internal department and/or an external consultant. If you do not have all of these in place, then you **must not** accept asbestos waste. You may decide only to accept bonded asbestos product at one or two sites out of a wider series of HWRCs to avoid these resource and training requirements being needed at all sites, or only accepting asbestos at larger sites where there is more space to locate an asbestos container in an isolated location. These issues are matters for your specific risk assessment.

Containers

Skips/containers used for asbestos should be fully enclosed (no open skips) and in good condition (no holes, no excess corrosion, no bent doors/hatches, no gaps in doors/hatches etc). In addition:

- Skips/containers for storing asbestos cement waste should be dedicated to that sole purpose and not used for any other waste type
- They should be lockable with well-fitting doors/hatches. For example, door/hatch secured with a suitable and secure padlock. The keys to locks/padlocks should be retained in a secure place by a responsible person on site
- Containers/skips should be kept locked and secure at all times when not in use
- Skips/containers used for bonded asbestos waste should be clearly labelled with a sign, preferably on its door/hatch, such as 'bonded asbestos waste only'. They should also be prominently marked with an appropriate standard 'warning contains asbestos' sign
- Containers/skips used for asbestos should be located well away from other containers in an isolated part of the site. In some cases this may mean locating the skip/container in a part of the site not usually accessible by the public, such as in an operational part of the HWRC. In these situations appropriate traffic management needs to be in place when the skip/container is being accessed (see section above on traffic safety)
- Skips/containers should be on a hard surface, such as tarmac or concrete, to allow easier clearing-up of any spills or contamination
- A water supply should be in place near to the skip/container with a hose fitted with an appropriate spray head for the purposes of damping material down in the event of any spillage etc. **Note** – spray heads and water pressure should not result in too powerful a spray stream/pattern resulting in asbestos being 'blown-around'

Packaging requirements

Guidance on the safe packaging of asbestos is available from the HSE's website at: [HSE common problems with asbestos webpage](#). While this HSE webpage is aimed at the transport of asbestos it contains useful information and a summary table of requirements. This table is reproduced below for reference. You should also liaise with your off-taker as they may have specific requirements, and your environmental regulator may also have specific rules in place.

Notwithstanding the above, this guidance document is about HWRC sites where members of the public bring wastes to the site. The public are rarely asbestos experts, and you should expect that they will not always package bonded asbestos products correctly. Some may package asbestos waste correctly (or even sometimes take a very cautious approach), while others may simply arrive at your site with a 'boot full of asbestos'. You should anticipate this variability and include it in your risk assessments and procedures.

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Some HWRC sites keep a stock of 'UN approved' (certified) or similar heavy-duty bags with asbestos warning labels in place and suitable plastic sheeting which are available for the public, who can visit the site and obtain bags/sheeting either free-of-charge or at a cost. This type of service is usually advertised on the local authority's website and at the HWRC itself. One advantage of this approach is that when a member of the public attends a HWRC site to collect asbestos bags/sheeting they can be informed of packaging and other requirements and given advice on how to handle asbestos, such as damping-down the material with water before packaging, double bags to be used, sealed, and taped shut, double sheeting to be used and taped and sealed etc.

Table below is an edited summary of packaging requirements from the HSE's website. It includes various types of asbestos containing material. The type most relevant to HWRC sites is bonded products (fourth row in table, highlighted in green tint).

Substance	Application of ADR	Carriage requirements
Fibrous asbestos waste, such as insulation and insulation board	UN 2212 or 2590 Class 9	Certified packaging (usually double 'red and clear' polythene bags). Other aspects of the CDG (carriage dangerous goods) Regulations apply. Hazardous/special waste legislation
Large items containing fibrous asbestos, such as pipes or ductwork	UN 2212 or 2590 Class 9	Certified packaging (usually polythene 'pipe bags'). Other aspects of the CDG Regulations apply. Hazardous/special waste legislation
Waste rubble or soil contaminated with asbestos	UN 2212 or 2590 Class 9	Certified packaging (up to 2 tonnes capacity bags) within skip or freight container. Bulk transport not allowed. Other aspects of the CDG Regulations apply. Hazardous/special waste legislation
Bonded products, such as asbestos cement panels, floor tiles etc	Does not apply by SP 168	HSE requires plain heavy-duty bags with asbestos warning label, alternatively, wrapped twice and taped shut if large pieces. Hazardous/special waste legislation
Other manufactured articles containing asbestos, such as asbestos insulation panels	Does not apply by SP 168	If fibres not bonded, HSE requires certified packaging etc. alternatively, if large, wrapped twice and taped shut (thus other aspects of the CDG Regulations – including marking and labelling - will apply). Hazardous/special waste legislation

Personal protective equipment (PPE)/respiratory protective equipment (RPE) for asbestos

Guidance on the selection and use of PPE/RPE for work with asbestos is available from the HSE at: [HSE PPE/RPE guidance](#). Work **must not** commence if any item of required PPE/RPE is missing. In overview, PPE/RPE should include:

- Disposable coveralls fitted with a hood and with elasticated and well-fitting cuffs and ankles (waterproof overalls may also be required in wet weather). Elasticated cuffs should be worn over gloves and elasticated ankles over boots not inside
- Respiratory protection (RPE) to FFP3 standard (disposable or reusable – if reusable RPE should be cleaned and stored correctly between use). RPE should be fit-tested to the individual employee and wearers should be ‘clean-shaven’ with no facial hair or similar which could reduce the effectiveness of RPE. Mask straps should be worn under coverall hoods not over
- Boots with no laces such as ‘wellingtons’ (laced boots are more difficult to clean/decontaminate effectively) or use of disposable boot covers (boot covers may be preferable but can pose slip risks – areas around skips/containers should be kept clean and free of slip hazards)
- Single-use, disposable protective gloves
- Other PPE may also be required based on risk assessment, but beware of PPE ‘clashes’ such as eye protection interfering with RPE fit

Note – any deviation from the above should be thoroughly risk assessed. For example, if the bonded asbestos product waste is undamaged, 100% correctly wrapped/bagged etc then you may decide coveralls are not required. However, RPE and gloves are essential and should **not** be part of any deviation/reduction in PPE/RPE levels no matter what your risk assessment says. You **must** also consider the training and competence of employees when making such decisions.

Employees should be trained in the correct methods for donning and removing PPE/RPE, its disposal or cleaning and storage (for non-disposable RPE only). Removal of potentially contaminated PPE/RPE is particularly important. In overview, the removal of PPE/RPE used with asbestos should follow the process:

1. Remove disposable coverall/suit by rolling it inside-out carefully and place in an asbestos disposal bag (if you have put goggles and/or mask straps over your hood, or have not put the elasticated wrists over your gloves or tucked suit ankles into boots you will not be able to do this correctly)
2. Then remove disposable boot covers (if worn) and place them in the waste bag or clean-down wellington boots etc
3. Now remove gloves by rolling them off carefully and only touching the insides of the gloves with your bare hands and put them in the asbestos waste bag

4. Remove other PPE which may have been required (based on your risk assessment) such as goggles and wash them down thoroughly into the skip/container or disposal bag (if not 100% sure all asbestos has been removed, put them in the bag)
5. If hard hat or boots have been contaminated wash these down – again if in doubt as to whether all asbestos has been removed put them in the waste bag
6. Finally remove your RPE – always do this last. If disposable, place into the waste bag, if reusable clean thoroughly (if non-disposable RPE has been heavily contaminated, dispose of it)
7. Securely tape the top of the disposal bag up and place it into the asbestos skip/container (potentially contaminated PPE/RPE should not be left in the workplace)

If any other clothing or similar has become contaminated this should also be disposed of into the asbestos waste bag, before removing RPE. If skin becomes contaminated wash hands thoroughly, again before removing RPE. Removal of PPE/RPE should take place next to the asbestos skip/container and not in welfare facilities etc.

Training, information, and instruction

Training is required to enable workers to identify asbestos, and its different types, and ensure operatives are competent to accept and handle bonded asbestos product waste safely. Training and information should ensure they understand what asbestos is and what the risks and health effects are from exposure. Training should also cover the procedures, controls and precautions needed to carry the work out safely. Typically, the basic components of such training include:

- Identification of the different types of asbestos and the forms these typically occur in (roofing panels, lagging, insulation etc). Photographs can be useful, such as those which can be found on the HSE's website at: [HSE asbestos locations and identification](#)
- The hazards and risks associated with asbestos, the health effects, and routes of entry into the body and how to avoid this
- Legal requirements – usually an overview rather than in-depth
- PPE/RPE requirements, including putting-on and taking-off PPE/RPE – this should also involve employees demonstrating putting-on and removing PPE/RPE to check they have understood
- Packaging (plastic sheet wrapped, double-bagged etc) and labelling requirements
- Procedure to follow to ensure safe working
- Non-normal event procedures, such as for spillages, inadvertent receipt of asbestos other than bonded asbestos product etc
- Where to go to for competent advice if there is something 'out-of-the-ordinary' (internal department and/or external consultant) including contact details

Untrained employees **must not** undertake work with asbestos. If trained and competent staff are not available on site, such as on holiday, off work ill etc, then asbestos **must not** be accepted. Training, information, and instruction should be reinforced, reviewed, and updated as required to ensure its continued effectiveness and repeated periodically.

Note – there have been numerous occasions when members of the public have arrived at a HWRC site wearing shorts, 'T' shirt and flip-flops with asbestos waste in their car to be confronted by a site employee wearing full PPE/RPE. This has sometimes been used as a justification for employees not to wear full PPE/RPE because it may cause the member of the public to become concerned. That a member of the public may become concerned is not an employee health and safety issue and is not a valid reason for employees not to wear PPE/RPE. In addition, HWRC workers dealing with asbestos are likely to handle the material far more often and frequently than members of the public – their potential exposure frequency is higher.

Bonded asbestos product – information for the public

The public should be encouraged to pre-book if they want to dispose of asbestos at a HWRC site. For example, via messaging on local authority websites. Pre-booking allows the site to prepare in advance for reception, and where practical the member of the public can be requested to visit during quiet periods. Other information can also be included in messaging to the public, such as:

- That asbestos should be double-bagged and taped or suitably double-wrapped and taped in heavy duty plastic sheeting before being brought to the site
- Large pieces should not be broken or cut to fit into plastic bags, but should be double-wrapped and taped in plastic sheeting and the sheeting wiped clean
- Not to transport asbestos with other items which may puncture bags, rip sheeting etc
- To wear gloves when handling asbestos and be aware of protruding nails, bolts etc
- To make themselves known to site operatives as soon as they arrive at site

However, not everyone reads local authority websites, and you should anticipate that members of the public will arrive unannounced. In these cases the member of the public should be instructed to wait until site preparations are made. Signage, at site gates and/or at other relevant locations such as construction waste skips asking the public to speak to a site employee if they are carrying asbestos can also assist. However, again this cannot be relied on, and employees should monitor for asbestos being carried by members of the public and asbestos placed in the wrong skip/container.

Bonded asbestos product – procedure

By whatever means bonded asbestos product arrives at a HWRC site, you should have in place a good quality procedure backed by risk assessment for its reception and movement to storage. Typical components of a procedure might include the below (note – this is only an example with comments - you will need to produce your own procedure tailored to your specific site and situation):

- If the asbestos skip/container is in an operational area of a site put in place temporary traffic safety measures. If the skip/container is in an area where other members of the public may gain access, cordon-off the area and supervise to ensure no other member of public approaches while asbestos is being deposited
- Ask the member of the public to drive slowly to as close to the asbestos skip/container as practical – the greater the distance asbestos is carried the more likely it may be dropped. Some HWRC sites use carts, trolleys etc to move asbestos to the skip/container. Such double handling may increase the risk of droppage and should be avoided if practical. In all cases the member of the public should be accompanied by a trained employee at all times
- Once at the skip/container, the trained HWRC employee puts-on RPE and gloves, then asks the member of the public to open their car boot/tailgate. The trained employee visually inspects the waste asbestos – at this stage asbestos wastes, even if packaged, should not be handled. Inspection should include issues such as:
 - Is the waste bonded asbestos product or another type of asbestos? If friable, such as asbestos insulation, the site procedure for dealing with these situations should be followed (see section below) and/or competent advice sought
 - Packaging – is the asbestos correctly wrapped/bagged, are there any signs of fibres and/or dust on sheeting/bags, is all of the asbestos in the sheeting/bags? Note – if the asbestos is securely bagged etc but the contents cannot be seen. For example, solid colour opaque plastic used, such as black bin-bags or standard solid colour rubble sacks (not every member of the public will use 'UN' approved bags/sheeting) do not open bags, unwrap sheeting etc to inspect, follow normal procedure, but as there is a degree of uncertainty regards bag/sheet contents full PPE/RPE **must** be worn
 - Is the asbestos material largely intact – not a bag of broken asbestos cement sheet fragments etc?
- If the asbestos is not packaged correctly offer to damp it down while it is still in the member of the public's car. They may not be 'keen' as this will wet their car interior, but the offer should still be made – only use the minimum water needed to damp (for gross contamination competent advice should be sought before proceeding)

- If the asbestos is not friable, is largely intact and 100% correctly packaged it may be acceptable not to wear full PPE (subject to risk assessment) although RPE and gloves must always be worn in case the waste is unintentionally dropped or the packaging splits. However, if the asbestos is friable, fragments and/or dust is apparent, or packaging is not 100% correct etc then full PPE **must** be donned before proceeding. Some HWRC operators allow deviations from full PPE such as noted above, others require full PPE to be worn at all times with no deviation. This is a matter for you to decide based on your risk assessment, and with the input of competent advice
- Once preparation and inspection are complete, the water hose fitted with a sprinkler head at the skip/container is in place and ready to use etc, the skip/container door or hatch can then be opened to receive the asbestos (note -skip design should be such so as to reduce the risk of damage to bags etc, such as not having a high load height over which bags need to be thrown)
- The asbestos waste can then be lifted from the member of the public's car and placed into the skip/container, as gently as is practical to avoid breaking-up material already in the skip/container or damage to the new material being placed into it
- Only one bag or sheeted item should be placed into the skip/container at a time, larger sheeted items should not be broken-up to make loading easier, and checking should take place during the process to ensure that no fragments or pieces of asbestos have been dropped
- Once the material has been placed into the skip/container, check the area for any dropped asbestos (see below on spillages), including any spillage on the skip/container door/hatch or the skip/container itself. The member of the public can then be asked to leave the area
- The trained employee then removes their PPE/RPE (as above), places the discarded items into the skip/container and secures the container, such as by replacing and closing a padlock and taking the key back to the responsible person

Bonded asbestos spillages

While all possible care is taken, it is almost inevitable that bags or sheeted bonded asbestos items may sometimes be dropped, pieces of bonded asbestos product may fall out of packaging etc. This is foreseeable, and you should have a procedure in place for this type of spillage. The components of such a procedure should, in outline and for example, include:

- Requiring the member of the public depositing the asbestos, and any other non-authorised persons, to leave the area and cordon it off using cones, warning tape and signs or similar (how you cordon-off the area will depend on your specific site situation)
- Full PPE/RPE **must** be worn for all spillage clearance
- Damp-down the spilt material and the area around it with water
- Clean the spillage up, preferably, and as practical, using tools such as a shovel

- Place the cleared-up asbestos into bags, or sheet as appropriate (larger items may be placed direct into the skip/container if not friable etc)
- Place the bagged/sheeted items into the skip/container
- Any tools used should be washed-down using the water spray into the skip/container – if they cannot be thoroughly decontaminated also place them into the skip/container
- Remove PPE/RPE as above – PPE used during spillage clearance should be assumed to be contaminated and treated as such

In addition to having a procedure in place for bonded asbestos product spillages, you will also need to have a supply of appropriate labelled asbestos bags ('UN' approved or other approved type or similar) for double-bagging and 1,000-gauge (or thicker) polythene sheeting and tape to use during clearance.

Dealing with other types of (non-bonded) asbestos

As noted in the introduction to this section, the vast majority of asbestos brought by members of the public to HWRC sites is bonded asbestos (typically cement) product – it is becoming rare for other types of asbestos such as friable asbestos insulation, to be presented at HWRCs.

However, should a member of the public arrive with asbestos which does not appear to be bonded asbestos product (such as asbestos insulating board), you should make the member of the public aware of the potential hazard and not allow them to unload until you have sought competent advice. If the asbestos is securely bagged/packaged it may be safe and practical to follow 'normal' procedure, although full PPE/RPE must always be worn no matter how well packaged other types of asbestos are. If the other type of asbestos is not securely and correctly bagged, then you may need specialist assistance – you should seek competent advice and not try to deal with the issue in an ad-hoc manner. You may also need to contact your environmental regulator (Environment Agency, Scottish Environment Protection Agency, or Natural Resources Wales as appropriate).

If other types of asbestos are placed into a skip/container dedicated to bonded asbestos cement product you should also contact your off-taker – they will need to know the waste being consigned to them is not 100% bonded asbestos product.

Asbestos inappropriately placed

Should a HWRC employee see a member of the public disposing of material they believe to be bonded asbestos (or any type of asbestos) into a general waste container they should stop the individual and summon a trained employee to visually assess the material (RPE and gloves at least should be worn). If following inspection it is suspected that the waste is asbestos it should be damped-down with water, bagged or wrapped as appropriate and disposed of in the site asbestos skip/container following the general process outlined above (full RPE/PPE **must** be worn during such operations).

If the waste suspected of being asbestos has already been placed in a general waste container, or asbestos is suspected of having been included in a general/construction waste received such as from a small local building company, and it is easy to reach (without getting into the container) and it is safe to do so it should be damped-down with water, removed, bagged, or wrapped as appropriate and disposed of in the site asbestos skip/container following the general process outlined above (full RPE/PPE **must** be worn during such operations). Employees **must not** climb into containers to remove bonded, or any other type of, asbestos. If any asbestos deposited into the wrong container cannot be easily and safely removed the whole container may need to be classed as hazardous and disposed of appropriately. If in any doubt stop and seek competent advice.

Note – HWRC sites which accept trade, and in particular construction and demolition, wastes may have a higher risk of asbestos contamination being present in loads from such sources. Site employees should be instructed to be specifically vigilant when such loads are received.

2.4 Batteries – lead-acid automotive batteries

Lead-acid automotive batteries from cars, vans, motorcycles etc pose three main hazards:

- They contain concentrated sulphuric acid posing significant exposure and corrosive risks
- If not discharged they can produce high-energy sparks if shorted-out, such as by accidentally dropping a metal object across the battery's terminals, and in some cases, batteries can rupture and/or explode. Shorting-out is often violent enough to 'weld' the metal item to the battery and poses a significant fire ignition/explosion risk
- Lead-acid batteries can also produce hydrogen, which is highly flammable. This combined with the ignition risk of the battery itself poses an additional fire and explosion hazard

Older lead-acid batteries are often fitted with removable caps at each cell of the battery to allow them to be topped-up. If these caps are loose or missing the concentrated acid in the battery can spill if the battery is not kept upright. Newer batteries are often 'sealed-for-life' and do not suffer from this risk. However, they can still short-out, split or rupture etc. Note – some modern high-performance cars and motorcycles are fitted with lithium rather than lead-acid batteries or have been retrofitted with lithium batteries (to save weight). HWRC site operatives who handle automotive batteries should be aware of this and trained to identify the difference between a lead-acid and lithium automotive battery. Lithium batteries **must not** be stored with lead-acid batteries.

When handling automotive lead-acid batteries:

- A face shield, acid resistant long-arm gloves/gauntlets and suitable (non-synthetic) clothing such as an apron or strong overalls should be worn
- Eyewash bottles should be provided close to automotive battery containers
- Conductive items, such as bracelets, long necklaces etc, should be removed before handling lead-acid batteries – they can drop across the battery terminals causing a short
- Any spillage should be cleaned-up immediately using absorbent granules – full protective clothing/PPE, including a face shield, should be worn during spillage clearance
- Damaged lead-acid batteries and batteries with loose or missing 'top-up' caps should be double-bagged in polyethylene bags at least 85 microns thick and sealed
- If practical lead-acid battery terminals should be taped-up using electricians, duct, or similar robust and non-conductive tape to reduce the risk of shorting before they are placed into their storage container

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When storing lead-acid automotive batteries:

- Store in a non-conductive (plastic or similar) well-ventilated container fitted with a lid. The lid should be kept closed when not in use. Containers should not have drainage and similar holes
- Containers should be fitted with the corrosive warning sign and clearly labelled as being for automotive/vehicle lead-acid batteries only
- Other battery types, such as domestic batteries, should not be stored with lead-acid batteries
- Lead-acid battery containers should be located at least 6 metres away from flammable substance stores, such as flammable gas cylinder cages and flammable liquids containers, and well away from any drainage systems or suitably bunded
- Containers should be inspected frequently during the day to check for leaking batteries etc and to ensure that metal items (including domestic batteries) have not been placed in them
- Lead-acid battery storage containers should not be stacked

At some HWRCs a table or similar is provided next to lead-acid battery containers for members of the public to place their batteries on rather than direct into the container or they require the public to place automotive batteries on the floor next to the container. This can assist HWRC site employees to inspect batteries, tape-up terminals etc before placing the battery into the container. However, in these cases batteries should be placed into their container promptly and not left-out all day.



From left to right: example typical type of container used for lead-acid automotive batteries, example corrosive warning sign to be fixed to lead-acid battery containers, two examples of small domestic battery containers

2.5 Batteries – domestic and similar, including lithium batteries

Domestic batteries come in a wide variety of sizes and types, from small 'AA', 'AAA', PP9 etc batteries used in torches, radios etc through to bigger batteries such as used in communications and IT devices and the relatively large batteries used in cordless hand tools, garden tools, vacuum cleaners etc. Increasingly, these domestic type batteries are lithium based, and in particular lithium ion. Lithium is a water reactive metal which burns energetically.

Most data indicates that lithium batteries are currently the cause of more than a third of all fires at waste and recycling sites (some data places this at nearly half of all fires). Whatever is the case, it is certain that lithium batteries are a significant fire risk at waste and recycling sites, and that the problem is growing as society's use of lithium batteries increases. While not specifically aimed at HWRCs, for more information see WISH INFO 08 'Fire risk and rogue lithium batteries' available at: [INFO 08](#).

In many waste and recycling fires caused by lithium batteries the battery simply provides the ignition source which sets-fire to other combustible wastes/materials around the battery, resulting in a 'standard' fire. However, where there are accumulations of multiple lithium batteries the fire may be a 'true' lithium fire. Lithium fires are extremely energetic and difficult to fight. Specialised extinguishers (typically metal powder) are required, along with specialised training and protective equipment. These are very unlikely to be in place at a HWRC site – if you have a lithium fire in batteries stored at your HWRC site you should not try to fight it, rather evacuate, and call the emergency services. In particular, as lithium is a water reactive substance water fire extinguishers and hoses **must not** be used to try and fight a lithium fire.

Some lithium batteries will be presented at HWRC sites as separate batteries, such as smaller domestic 'AA' etc batteries. Larger lithium batteries may be presented separately, or are easy to remove, such as the detachable batteries used with many cordless hand drills, garden strimmers etc. However, others are 'embedded' in the device/equipment and are not designed to be easily removed, such as most communications and IT devices, some cordless vacuum cleaners etc. If a battery is presented at your HWRC site separate, or is easily removable, they should be stored separately as batteries. You should not attempt to remove embedded lithium batteries – this is a task for a specialist WEEE (waste electrical and electronic equipment) recycling plant. They should be left in place and the device/equipment managed and stored as the appropriate class of WEEE waste.

In recent years larger-and-larger lithium batteries have started being presented at HWRC sites, such as those used to power e-bicycles and e-scooters. The larger the battery generally the larger the potential risk. Larger lithium batteries of this type should be treated carefully,

Discussion – over recent years e-vehicles (fully electric, plug-in hybrid and hybrid cars, vans etc) have become more popular and are being encouraged for environmental reasons. Currently, most of these cars, vans etc are relatively new and likely to be serviced by a main dealer, and some manufacturers offer lease-back type arrangements for the battery packs. However, over time these vehicles will enter the second-hand market and over the years into the 'lower end' of the second-hand market. It seems likely to be inevitable that at some point an enthusiastic amateur mechanic will attempt to change an e-vehicle's battery pack themselves and present the old battery pack at a HWRC site. There are indications that amateur work on e-vehicle batteries is occurring even now – used e-vehicle battery packs are already being offered for sale on the internet. WISH has been asked several times what a HWRC site should do in the event of an e-vehicle lithium battery pack being presented. The only advice able to be given currently is to cordon-off the area and call the emergency services. Society is very likely to continue to use more-and-more and larger-and-larger lithium batteries. You may want to consider this and plan for it, as relevant with local authority clients.

Small domestic batteries

'AA', 'AAA', PP9 etc small domestic batteries, including lithium small batteries:

- Should be stored in non-conductive, well-ventilated containers. Various designs of small domestic battery container are available on the market (two examples are shown in the photographs above). Most are plastic. However, some are cardboard or similar – these are designed for indoor use and should not be used outdoors at HWRC sites
- If small domestic battery containers are stored within a second larger container, such as a walk-in large container, this second container should also be well-ventilated
- Containers should have a lid (always kept closed except when batteries are actually being deposited) or closed top, such as an enclosed plastic 'tub' with a hole/s in its upper side to accept batteries. This type of design allows ventilation while preventing water ingress
- Entry holes in containers should be small enough to prevent larger and/or vehicle batteries etc being placed in them (for open top containers with a lid signage should be in place advising members of the public not to place larger, automotive etc batteries in the container)
- All containers should be clearly marked as for dry batteries only
- Containers for small domestic batteries should be at least 3 metres away from automotive, lead-acid battery containers to reduce the risk of any corrosive leak damaging the domestic small batteries container
- Battery containers should not be dropped, knocked, or otherwise maltreated
- Battery containers should not be located within 6 metres of any flammable gas or liquid store, such as flammable gas cylinder cages, flammable liquids stores etc
- Small domestic battery containers should be replaced before they are completely full (battery containers are likely to be heavy and manual handling issues need consideration)

Larger domestic batteries

While small domestic batteries tend to be limited in their design and shape ('tube-shaped' like 'AA', 'AAA' batteries, or 'box-shaped' like PP9 batteries), larger domestic batteries are more variable in their design, shape, size, power output etc. In addition, some have exposed terminals, some do not, some have protective systems to prevent damage and over-heating from shorting, some do not. In all cases, it should be assumed that the battery is faulty and/or may be damaged – in general people tend not to throw-away fairly expensive batteries if they are in good working condition. Larger domestic batteries:

- Should be stored in non-conductive, well-ventilated containers
- If larger domestic battery containers are stored within a second container, such as a walk-in large container, this second container should also be well-ventilated
- If stored outside, larger domestic battery containers should have a well-fitting lid (always kept closed except when batteries are actually being deposited)
- Clear signage should be in place indicating that the container is only for larger domestic batteries and not for small batteries or lead-acid batteries
- Containers should be inspected frequently to ensure that metal or other similar non-battery items have not been placed inadvertently into the container
- If practical, and safe to do so, exposed terminals should be taped over with a non-conductive tape such as electrician's or duct tape
- Containers for larger domestic batteries should be at least 3 metres away from automotive, lead-acid battery containers to reduce the risk of any corrosive leak damaging the domestic small batteries container
- Larger battery containers should not be dropped, knocked, or otherwise maltreated
- Larger battery containers should not be located within 6 metres of any flammable gas or liquid store, such as flammable gas cylinder cages, flammable liquids stores etc
- Containers should be replaced before they are completely full (battery containers are likely to be heavy and manual handling issues need consideration)

Inadvertent placement in general waste containers

Equipment/devices containing embedded batteries often have a plastic casing/shell. The public may not consider that their waste equipment/device has an embedded battery and inadvertently place it into the wrong waste container. For example, placing a battery-powered child's toy into a hard plastics waste container (rather than in a WEEE goods container) because the toy has a hard plastic shell.

WEEE recycling plants usually expect items to arrive with embedded batteries and are aware of the risk, general/plastics recycling sites may not. HWRC site employees should be aware of this issue and supervise for it, and you may want to use techniques such as a drop-off zone in front of, for example, hard plastics containers so that employees can inspect items before they are placed in the container.

Tip and case study – current research indicates that more than 5 million ‘vapes’ are disposed of each week in the UK. Many of these are incorrectly disposed of in mixed domestic waste streams, public waste bins, or appear in street cleansing wastes (it is estimated that only 17% of people dispose of vapes correctly). Industry experience is that vapes are increasingly being presented at HWRC sites. The vast majority of vapes contain a small lithium battery. They also include a heating element and can suffer from ‘auto-fire’ (inadvertent activation of the heating element as the result of damage, faults etc with switches and control systems within the vape). Some HWRC operators are now seeking to accept, and store, vapes separately from other WEEE goods. In these cases a suitable non-conductive container is required with a lid, which should always be in place unless vapes are actively being put into the container. For example, a plastic clip-top drum. To mitigate the risks associated with storing waste vapes some operators are also using vermiculite or similar as a ‘buffering agent’: after a batch of waste vapes have been placed into the container a site operative covers them with vermiculite awaiting the next batch of vapes to be placed into the container. If your HWRC site/s decide to separate waste vapes you need to take appropriate precautions based on your risk assessment, and you need to take into account the precautions listed above for any lithium battery.

2.6 Fluorescent tubes, cathode ray tubes etc

Fluorescent tubes ('flo-tubes') can contain mercury and other hazardous substances. If broken, the hazardous substance can be released as a vapour posing health risks. Cathode ray tubes (CRTs – as used in older televisions, computer monitor screens etc) also contain various hazardous substances. Cathode ray tubes if damaged can also implode violently ejecting glass fragments.

Fluorescent tubes:

- Should be handled carefully and placed in a secure robust container with a closing lid, door, cap etc – tubes should not be stored outside of containers
- Eye protection, gloves, and suitable clothing (such as robust overalls with long sleeves) should be worn when handling fluorescent tubes
- If fluorescent tube containers are in a larger container, such as a walk-in open-ended container, this outer container should be well ventilated
- Any breakages should be cleared-up promptly using a spill kit. Dependent on factors such as the degree of ventilation respiratory protection (RPE) may be required during clean-up operations – you should seek competent advice

Cathode ray tubes:

- Should not be broken, 'smashed-up', mishandled etc
- Care should be taken not to drop TVs, computer screens etc which contain cathode ray tubes
- Manual handling assessments and training should take account of the weight imbalance of many CRTs – most televisions, monitors etc are much heavier at one end
- Do not 'stack' televisions, monitors etc, as weight or unstable stacks may result in breakage
- Clear up any breakages promptly. Debris should be placed into a suitable robust plastic bag which is then sealed and taped shut for disposal



From left to right: two examples of fluorescent tube storage (the first being loaded by a member of the public), fluorescent tube waste signage, cathode ray tubes being stored in an open-ended walk-in container

2.7 Garden chemicals (pesticides, fertilisers etc)

Garden chemicals (pesticides, herbicides, fungicides etc) are typically non-reactive toxic/eco-toxic substances (some such as sulphides are reactive). Some fertilisers are oxidising agents, and some can self-heat if exposed to water. Pesticides, herbicides etc **must** be stored separately from fertilisers.

Pesticides should be stored in a secure cupboard (as for flammable liquids). Reactive substances (such as sulphides) **must** be stored separately. Pesticides, herbicides etc should:

- Be stored in a separate locked cabinet with ventilation and internal bunding/spill containment
- Shelves in the cabinet should be gridded or similar allow spills to fall through
- The cabinet should be at least 3 metres away from flammable gas/liquid storage containers
- Warning sign/s indicating a toxic hazard (hazard diamond) should be fitted
- Cabinets should be checked regularly for spills – including for leaking containers in the cabinet
- Absorbent granules should be used to clean up any spillages promptly
- Eye protection, gloves, and suitable clothing, such as overalls, should be worn during handling
- Solids (pellets etc) and liquids should be separated within the cabinet - solids at the top and liquids towards the bottom on separate shelves to prevent liquids leaking onto solids
- Stock levels should be managed to keep stored quantities to a minimum

Fertilisers, either solid or liquid, can sometimes be classed as oxidising agents, such as some ammonium nitrate fertilisers. Some fertilisers can also self-heat if exposed to water, such as some 'NPK' (nitrogen, phosphorous, potassium) type fertilisers. Storage of liquid fertilisers and small volumes of solid fertilisers should in general be to the same standards as above, although cabinets should be labelled with an oxidising agent warning sign. However, if larger amounts of solid fertilisers are accepted (such as waste part-empty bagged solid fertilisers):

- A robust weatherproof container with a closed lid should be used – some oxidising agents may 'self-heat' if exposed to water and the container should be kept dry and not left open
- The container should be fitted with an oxidising agent hazard warning sign

Note – the term 'garden chemicals' covers a wide range of products and potential hazards and risks, and it should be anticipated that older garden chemicals may be presented, including types which may have been banned over time (such as from long overdue garden shed clear-outs etc). Many garden chemicals may be fairly benign, but others are not. Leaking and damaged bottles/containers should be placed in robust plastic bags and sealed – in addition to eye protection and gloves you may also need to wear RPE when doing this. This can be a specialised area - if in any doubt on any aspect of waste pesticides, herbicides etc seek competent advice before handling.

2.8 Gas cylinders

Compressed gasses are split into three hazard classes:

- Flammable gasses, such as propane, butane, LPG (liquified petroleum gas) etc
- Toxic gasses, such as chlorine, fluorine, phosgene etc
- Non-flammable/non-toxic gasses, such as oxygen, helium, carbon dioxide, N₂O etc

All of these three hazard classes have their own risks and separation and segregation requirements (see HSG71 'Chemical warehousing – storage of packaged dangerous substances', available at: [HSG71](#) for more detail). Usually three gas cylinder cages, or similar appropriate containers, would be required as part of satisfying these separation and segregation requirements. However, toxic compressed gasses are rarely presented at HWRC sites and for the vast majority of sites only two cages would be required (or in some cases one cage with a suitable fire wall between flammable and non-flammable/non-toxic gasses, although usually two cages are more effective, economic, and simpler to manage). If a toxic compressed gas cylinder is presented by a member of the public at your HWRC site, it should be quarantined and removed from site as quickly as possible – you should also seek competent advice before handling the cylinder.

Industry experience is that the incidence of gas cylinders at HWRC sites varies across the country. For example, butane and propane cylinders (camping, caravanning etc cylinders) may be more common in holiday areas than urban locations. Conversely, helium cylinders (used to fill 'party' balloons) may be more common in urban areas. You should use your site's experience (and the experience of your employees) to account for such variation in your storage planning. The same principle applies to off-take of waste gas cylinders – industry experience is that some HWRC sites have no problems with off-take whereas others have significant issues arranging removal. If your HWRC site/s has an issue with off-take, such as delays with arranging off-take, you should include this in your storage planning and start arranging off-take well before your gas cages are full.

Guidance on gas cylinder identification, inspection, handling and storage is available from various sources, such as in WISH WASTE 03 'Orphaned gas cylinders in the waste and recycling industries', available at: [WASTE 03](#). This document also includes information on cylinder take-back and off-take schemes. Guidance is also available in UKLPG Code of Practice 7, available at: [UKLPG code of practice](#) (note - this is a paid-for publication), and more generally from the BCGA (British Compressed Gas Association) at: [BCGA webpage](#). Specific BCGA guidance on waste cylinders is available as a free download at: [BCGA guidance waste cylinders](#).

Inspecting and identifying gas cylinders

Cylinders and their contents should be properly identified. Cylinder identification charts showing the different cylinder colours, markings etc are available and can help employees in identification. Printing and posting a copy of a suitable gas cylinder identification chart in an easily accessible location, such as site office, welfare facility etc, can help employees and act as a reminder for cylinder identification. If a cylinder cannot be identified, such as because labelling, paint etc has worn-off, you should seek competent advice before handling and storing the cylinder. Knowing the detail of gas cylinder identification is important. For example, some helium cylinders have a disc which can be 'punched-out' by members of the public to ensure it is empty. This is the type of detail employees need to know. Visual inspection of cylinders before movement to storage should cover issues such as:

- Overall condition, damage, excessive corrosion etc
- Specific damage to the valve or valve housing
- Signs of leaking (hissing noise, odour etc, but do not get too close when assessing)

Dependent on the degree of any damage, and if safe to do so, damaged cylinders should be quarantined and removed from site as quickly as possible. Excessively damaged and leaking cylinders should not be moved, the area should be cordoned off and competent advice sought.

Handling gas cylinders

When handling gas cylinders, such as moving them to storage:

- Eye protection and gloves should be worn as a minimum
- Cylinders should not be lifted by their valves
- Cylinders **must not** be rolled along the ground (for larger cylinders use a cylinder trolley or similar mechanical handling equipment – they should be upright for movement)
- Do not cut into or attempt to puncture cylinders
- Do not drop cylinders, bang them together or maltreat them
- No attempt should be made to discharge or empty gas cylinders
- While many gas cylinders have a protective valve guard some do not, take specific care not to damage valves during handling

Storing gas cylinders

As noted above, usually at least two gas cylinder cages (or other appropriate storage containers) should be available. One for flammable gasses such as camping gas, barbeque gas cylinders etc, and one for non-flammable/non-toxic gasses ('the rest'). Flammable gasses **must not** be stored with any other type of compressed gas. See also section above on principles of risk management for household hazardous wastes – a written inventory of gas cylinders stored on site should be kept and placed in an emergency services box out-of-hours. In general on the storage of gas cylinders:

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- Gas cylinders should be stored in fully enclosed 'cages', or solid containers with a suitably strong and secured mesh roof to prevent ejection in the case of a fire and to provide ventilation. Standard gas cylinder cages are easily available and are usually the most convenient, economic, and safest option – they are designed specifically for storing cylinders
- Cages/containers should be kept secure at all times, such as the access gate/door being padlocked with the key retained by a responsible person on site, except when cylinders are being moved in or out of the cage
- Cylinders should be stored upright unless instructions on the cylinder state otherwise. Small cylinders can be stored, for example, in a plastic crate or similar within a cylinder cage
- Flammable gas cages should be clearly marked with a flammable warning sign/s, the types of gas stored, and prohibiting smoking and naked flames
- Non-flammable/non-toxic gas cylinder cages should be clearly marked as not being for flammable gasses
- Cages should be well drained to prevent water pooling leading to corrosion of cylinders
- Cages should be at least 3 metres apart or separated by a suitable firewall, and flammable gas cages should not be located within 6 metres of ignition sources, such as electrical systems and waste battery storage containers
- Unless the area outside the site is completely clear or a suitable protective structure is in place, cages should not be located within 3 metres of the site boundary
- Cages should be positioned to prevent and/or protect them from vehicle impact
- The area around cages **must** be kept free of combustible materials, such as blown wastes, dry grasses, and other vegetation etc, including outside of a site's boundary fence
- Inventories of cylinders in cages should be recorded on a daily basis and managed to keep stored quantities to a minimum

Note – in recent years the number of N₂O (nitrous oxide, also called 'NOX/NOS' and 'laughing gas') cylinders being received at HWRC sites has increased. Some of these are from legitimate activities, but many are from the illicit use of N₂O as a euphoric (at one recent major festival more than 4,000 small 8g 'whippet' N₂O cylinders were collected during street cleaning in one day, and larger 640g, 2,000g etc N₂O cylinders are becoming more common). N₂O is an oxidising agent and a fire accelerant. N₂O cylinders of whatever size **must not** be stored in flammable gas cylinder cages.

Note – while rare, on occasion acetylene cylinders have been brought to HWRC sites by members of the public. There is a good argument that acetylene is not a household waste (there are no valid domestic uses) and should not be accepted. Notwithstanding this, if an acetylene cylinder is presented at your HWRC it should be quarantined (if safe to move – if not cordon the area off), competent advice sought, and the cylinder removed from site as quickly as possible.

2.9 Household chemicals and paints and adhesives

Household chemicals include a wide range of potentially hazardous substances such as bleaches, hypochlorite, peroxides, detergents, various cleaning products etc. These are usually presented as part empty containers. In basic terms, household chemicals can be split into relatively lower-risk substances, such as detergents, washing powders etc, and higher-risk substances, such as bleaches and peroxides. In general:

- Higher-risk hazardous household chemicals should be kept separate from lower-risk substances, if for no other reason than to make off-take easier and more economic
- Higher-risk hazardous household chemicals should be stored in a dedicated secure cabinet or similar with drip and spill protection and internal segregation to prevent substances mixing
- Some household chemicals can react together to produce toxic, irritant etc gasses and vapours. Because of the small volumes stored at HWRC sites, all of the requirements of guidance such as HSG71 'Chemical warehousing – storage of packaged dangerous substances' may not be fully appropriate. However, you should seek competent advice before moving to more 'bespoke' storage arrangements to avoid incompatibilities
- At the least, eye protection and gloves should be worn when handling higher-risk substances
- Lower-risk household chemicals can be stored in a suitable container with a closing lid

Paints and adhesives are usually presented at HWRC sites as partially empty tins, bottles, tubes etc. In general, they can be split into solvent-based substances and water-based substances, although in recent years there has been a move towards more water-based paints in particular and away from solvent-based paints. Solvent-based and water-based paints and adhesives should be stored separately. In general:

- Separate containers should be provided for solvent-based and water-based paints and adhesives. At some HWRC sites a 'drop zone', such as a bunded tray, is provided for members of the public to place paints and adhesives into. This allows site employees to sort paints and adhesives. At other sites the public deposit paints and adhesives themselves direct into storage containers. If the latter, clear signage and supervision should be provided
- Containers should be robust, fitted with a lid or similar, and capable of being locked
- Containers for solvent-based paints and adhesives should be well ventilated, labelled with a flammable warning sign and located at least 6 metres from ignition sources, such as electrical systems, waste battery storage containers etc
- Employees should wear eye protection and gloves when handling paints and adhesives
- Paints and adhesives should be placed carefully into storage containers and not thrown in

2.10 Thinners, solvents, and other flammable liquids

Small quantities of flammable liquids may be brought to HWRC sites. Typically, these are often liquids such as white spirits, paint thinners, barbeque lighter fluid etc in small bottles/containers (large containers should be quarantined if they are received and removed from site as soon as possible). Household hazardous waste collection for larger quantities may be more appropriate.

Guidance on the storage of flammable liquids is available on the HSE's website in HSG51 'Storage of flammable liquids in containers', at: [HSG51](#). As with HSG71 'Chemical warehousing – storage of packaged dangerous substances' this guidance is not aimed specifically at HWRC sites and the relatively small volumes of flammable liquids they usually store. However, HSG51 is the starting point you should use, and any deviations should be subject to risk assessment and in liaison with your source of competent advice. Guidance is also available on the handling and use of flammable liquids in HSG140 'Safe use and handling of flammable liquids' at: [HSG140](#). However, this document is aimed at activities such as small chemical manufacture and automotive paint spraying and should be considered more as a source of information than directly applicable guidance.

Flammable liquids should be left in the containers/bottles they are presented in unless leaking or in poor condition (in which case spill kits and a suitable container for the used absorbent granules etc should be used). In general on the handling and storage of flammable liquids at HWRC sites:

- Storage should be in a robust cabinet/container with internal segregation, bunding and good ventilation. Any shelves should be 'gridded' to allow spills to fall through and not sit on a shelf
- The cabinet/container should be kept locked at all times, such as by a padlock with the key retained by a responsible person on site, except when bottles etc are being placed or removed
- Storage cabinets/containers should be at least 6m from any ignition source such as electrical systems and waste battery storage containers
- Cabinets/containers should have the flammable liquids warning 'diamond' sign and 'no smoking or naked flames' signage affixed to them in a clearly visible position
- HWRC site employees **must not** attempt to 'bulk-up' flammable liquids by pouring them into larger containers/bottles
- Employees should wear eye protection, gloves, and non-synthetic clothing/overalls (fire risk associated with synthetic clothing) when handling flammable liquid bottles etc
- A suitable (foam) fire extinguisher and eye wash bottle should be located close to the cabinet
- Regular checks for spills and leaking bottles etc in the cabinet should be undertaken (during hot weather more frequent checks may be required)
- Inventories should be managed to keep stored quantities to a minimum

2.11 Waste oils

Many HWRC sites accept waste oils, such as from car, van, and motorcycle servicing, although some have started accepting other waste oils such as cooking oils and similar. Oils are flammable and pose a fire risk. However, from industry experience, the most common type of accident at waste oil stores is slips resulting from spillages (and one of the most common causes of civil litigation against HWRC site operators). In general, waste oils should be stored and handled:

- Waste oils should be stored in a suitably strong and bunded tank/container, on hard standing such as tarmac or concrete (to assist in spillage cleaning) and away from drainage systems
- Waste oil tanks/containers should not be located within 6 metres of any gas cylinder cage or ignition source such as waste battery containers and electrical systems
- A 'flammable' warning sign should be attached to waste oil tanks/containers in a clearly visible position. It is advised that signs to warn people of the risk of slips also be in place
- Areas around waste oil tanks/containers should be inspected regularly and any spills cleaned-up promptly using spill kits and absorbent granules (locating a spill kit neat to the tank/container may assist in prompt clean-ups)
- Tank/container access hatches should be lidded, and lids kept closed when not in use. If the tank lid is heavy (such as on many metal tanks), a prop or similar hold-back device should be provided to minimise the risk of trapping a finger when opening/closing the lid
- A mesh over access hatches will reduce the risk of containers, oil filters etc falling into tanks
- Providing a bin/container to dispose of emptied oil cans into next to the oil tank/container can assist in reducing the risk of spills or used cans etc being dropped on the floor
- Employees should wear gloves when there is the potential to come into skin contact with waste oil – used engine oils etc can cause dermatitis and, in extreme cases, lead to skin cancer



From left to right: new waste oil tank being 'road tested' (note – flammable liquid etc signage not fitted as yet), waste automotive oil and cooking oil containers with bins next to them for waste cans, bottles etc, signage

2.12 Other items and substances

The household hazardous waste types listed and described above are typically those most commonly accepted at HWRC sites. Many HWRCs do not accept all of the above types for reasons such as insufficient available space to allow the required separation distances, limited resources and facilities, decision not to expend the time and resource required for training, supervision etc. Some HWRC sites accept types not listed above. If your HWRC site/s accepts a type of household hazardous waste not listed above your starting point should be guidance such as HSG71 'Chemical warehousing – storage of packaged dangerous substances', then in liaison with your source of competent advice you should risk assess the reception, handling and storage of the waste type and put in place appropriate measures and storage facilities.

This guidance cannot cover every possible eventuality, nor is it intended to be a comprehensive 'one-stop-shop' on how to operate a HWRC site. Industry experience is that members of the public sometimes bring the most unusual and odd hazardous items and substances to HWRC sites, from firearms and munitions, through unstable compounds and explosives to items posing significant biological hazards – on more than one occasion 11 Explosive Ordnance and Disposal Regiment RLC (aka "bomb disposal") has had to attend a site. Thankfully, such events are fairly rare. HWRC sites are not specialist facilities. Having access to competent advice is key, as is having risk aware employees who do not try to deal in an ad-hoc manner with unusual and/or unknown hazardous items and substances. When accepting household hazardous wastes at HWRC sites the general 'mantra' should be 'if something unusual is presented, stop and seek competent advice'.

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Further information

This guidance is issued by the Waste Industry Health and Safety (WISH) Forum to help control safety and health risks. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance, you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.