

Pollution Prevention Guidelines:

May 2011

Safe storage

Drums and intermediate bulk containers: PPG 26

These guidelines are produced by the Environment Agency for England and Wales, the Northern Ireland Environment Agency and the Scottish Environment Protection Agency, referred to here as 'we' or 'us'.

Pollution Prevention Guidelines (PPGs) are based on relevant legislation and reflect current good practice. Following the guidelines will help you manage your environmental responsibilities to prevent pollution and comply with the law.

If you cause pollution or allow it to occur, you may be committing a criminal offence.

You can find our contact details at the end of these guidelines.

This document is produced in accordance with the Code of Practice on Guidance on Regulation, reference 1.

1. Introduction

These guidelines will help you if you're responsible for storing and handling drums and Intermediate Bulk Containers (IBCs). They're written for site operators of industrial and commercial premises.

They're our good practice guidelines to help you store and handle drums and IBCs safely. Following them will help you reduce the risk of pollution from your site - to land, surface waters and groundwater - from the storage, maintenance and handling of drums or IBCs.

The guidelines give information and advice about storing liquids, for example oil and chemicals, in:

- small containers
- drums, up to 205 litres
- IBCs up to 1000 litres

where these containers aren't directly connected as an input to, or outflow from, a process, for example part of a manufacturing system, no matter how many containers are being stored. You may have containers that are a slightly different size from the sizes given. This guidance also applies to other sized containers.

These guidelines refer to environmental legislation you '**must**' follow in England, Northern Ireland, Scotland and Wales, including details for oil storage. Where our recommendations aren't a legal requirement, we say you '**should**'.

You should consider these guidelines on a site by site basis, and we advise you to consult us for help.

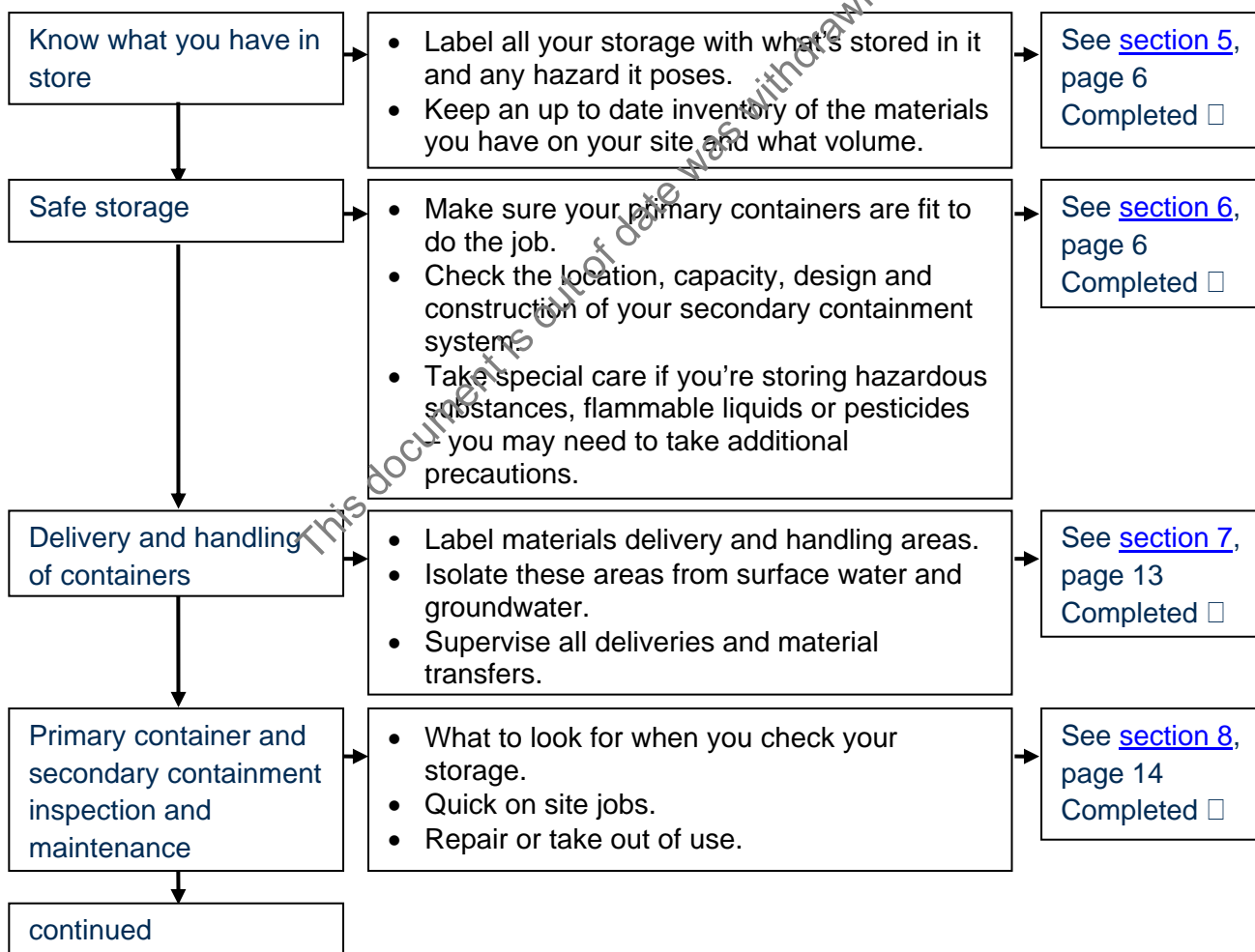
The guidance doesn't cover:

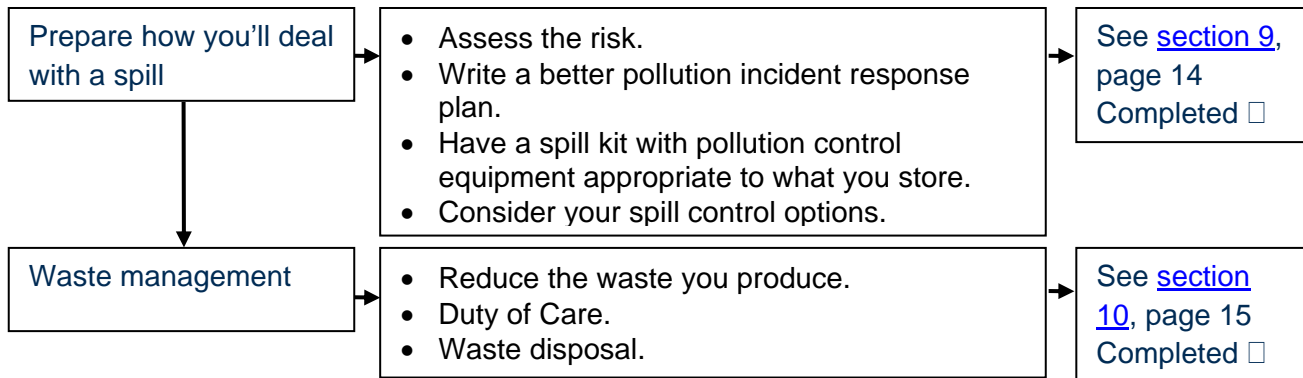
- containers above 1000 litres;
- bulk storage in fixed tanks or mobile bowzers;
- underground oil or chemical storage;
- fire prevention and control;
- air quality, although following the guidelines will help to protect air quality;
- dangerous substances stored under Control of Major Accident Hazards (COMAH) Regulations;
- regulations about transporting goods;
- health and safety requirements, for example labelling and confined spaces.

Guidance for these activities is available in references 2, 3, 4 and 5 and from the Health and Safety Executive (HSE), Fire and Rescue Services (FRS) and your local authority.

2. Safe drum and IBC storage key points

You should consider the following points to make sure you store and handle drums and IBCs safely. Each point has further detail in the listed sections.





3. Background

Businesses routinely store and move a variety of potentially polluting materials in containers ranging in capacity from a few litres up to drums of 205 litres (45 gallon) and 1000 litre IBCs. You must store these materials in accordance with:

- appropriate legislation;
- HSE requirements;
- any other relevant guidelines such as those issued by the FRS.

3.1 What the problems can be

Containers of oil, chemicals or other potentially polluting materials can pollute surface water and groundwater. Pollution can be caused by spills from:

- incorrect storage and handling of containers;
- accidental leaks;
- vandalism;
- overfilling or failure of storage structures;
- run-off from fires and contaminated firewater;
- incorrect or damaged drainage systems.

These are all potential hazards. There are many substances that aren't harmful to humans but that will cause pollution if they're spilt, for example liquid food and drinks, detergents and paper sludges.

3.2 How a spill can escape from your site

Pollutants can escape into the environment from your site or where a spill happens off site via different routes or pathways:

- through the surface water drainage system;
- direct run-off into a watercourse;
- through the soil or via soakaways, drains or damaged surfaces to groundwater;
- through the foul sewer system, where pollutants:
 - may be discharged through storm overflows;
 - could pass through the sewage treatment works;
 - may reduce the performance of the works so it can't treat sewage properly.

Good management practices can, in most cases, prevent a pollution incident. You need to make sure your staff and contractors use the management practices you have in place. If they understand the

potential links between the hazard sources, pathways and receptors and how this can affect your business, they will understand why your processes are important.

4. Legal background

Our responsibility as environmental regulators is to protect and improve the environment. We are responsible for enforcing environmental legislation and can take legal action to ensure you comply.

You must check which legal requirements apply to your activities under relevant environmental legislation. The government on-line business advice and support service, see useful websites, can help you identify which regulations apply to your type of business or activities.

Regulations for which we are responsible include:

In England, oil storage is regulated by the Control of Pollution (Oil Storage) (England) Regulations 2001, (OSR England). Oils covered by these regulations include petrol, diesel, vegetable, synthetic and mineral oils. The regulations apply to most industrial, commercial and institutional sites storing oil outside in containers over 200 litres, including drums and IBCs and to domestic premises storing more than 3500 litres.

In Northern Ireland, oil storage is regulated by the Control of Pollution (Oil Storage) Regulations (Northern Ireland) 2010, (OSR NI). This includes petrol, diesel, vegetable, synthetic and mineral oils. The regulations apply to industrial, commercial and institutional sites storing oil in containers over 200 litres, including drums and IBCs, and to domestic premises storing 3500 litres and over. They came into effect on 20 March 2011 and their implementation is being phased in. You should check with the NIEA to find when your oil storage must comply.

In Scotland, oil storage is regulated by the Water Environment (Oil Storage) (Scotland) Regulations 2006, (OSR Scotland). These regulations apply to any kind of oil including petrol, diesel, mineral oil, heating oil, lubricating oil, agricultural fuel oil, waste oil, and vegetable and plant oil. They don't include uncut bitumen. The regulations apply to the storage of any volume of oil at industrial, commercial and institutional premises, including farms. They don't apply to private dwellings storing oil in a container with a capacity of 2,500 litres of oil or less. There are more prescriptive requirements applying to premises storing over 200 litres of oil.

We've highlighted text indicating areas that must be complied with under these oil storage regulations.

Where the highlighted term 'must' is used, this refers to the legal requirement in relation to storing oil under the OSR England, OSR NI or OSR Scotland where they apply (see References 6 and 7 and useful websites).

Even if your drum and IBC storage isn't covered by these or other Regulations, following these guidelines is good practice and will minimise the risk of pollution from your site. In some sensitive locations we may ask for, and are able to enforce, more stringent environment protection measures than are described in these Regulations.

Similar regulations for oil storage may follow in Wales. You can contact us for more advice.

A range of Oil Care Campaign literature and stickers, covering the complete life cycle of oil, are also available from us, see useful websites for details.

The Environmental Damage Regulations or Environmental Liability Regulations, depending on where you are in the UK (see reference 8), require people who operate an 'economic' activity to prevent or limit the environmental damage they cause. This includes:

- private businesses
- farming
- manufacturing businesses
- construction and demolition businesses
- waste management businesses
- forestry operations
- public sector – schools, hospitals and government departments or agencies
- charitable and voluntary organisations.

These Regulations require polluters to prevent serious environmental damage from their activities or to take action to remedy it. Environmental damage includes:

- serious damage to surface water or groundwater;
- contamination of land where there is a significant risk to human health;
- serious damage to EU protected species or natural habitats, or damage to Sites of Special Scientific Interest (SSSIs) in England and Wales or Areas of Special Scientific Interest (ASSIs) in Northern Ireland.

They follow the 'polluter pays' principle. If there's a risk of damage from your business activities, you must do your best to prevent the damage occurring.

In England and Wales, the Environmental Permitting Regulations, reference 9, define when you must have a permit or register an exemption before you make any discharge to the water environment, surface water or groundwater. If you make a discharge without a permit, or that doesn't meet the conditions of your permit, you are committing an offence. We don't automatically grant a permit and in environmentally sensitive areas may refuse to grant a permit to protect the environment.

In Northern Ireland, the Water (NI) Order 1999 means you need a consent for discharge from NIEA before you make any discharges into the water environment, surface water or groundwater. If you make a discharge without a consent, or that doesn't meet the conditions of your consent, you are committing an offence. Pollution Prevention and Control Legislation regulates certain types of businesses. If your business carries out an activity regulated by the PPC legislation, you will need a PPC Permit from the NIEA.

In Scotland, discharges to the water environment (surface waters and groundwater) are regulated through the Water Environment (Controlled Activities) (Scotland) Regulations (CAR) and you will need an authorisation from us; see Water Regulation pages in useful websites. If you have a Pollution Prevention and Control (PPC) Permit, see useful websites, it will contain conditions covering any discharges to the water environment that will meet requirements of CAR. If you make a discharge without authorisation, or that doesn't meet the conditions of your authorisation, you are committing an offence.

5. Storage basics

To control the pollution risk from your site you need to know what and how much you're storing and be able to identify it quickly. You should only store materials that you are allowed to.

We recommend you:

- clearly label individual containers with details of what they contain and any hazard they pose;
- label storage areas with details of what can be stored in them;
- fit warning signs, for example appropriate hazardous substances symbols (pictograms), at access points to dedicated stores;
- store different materials separately so they can't mix if there's a leak (it's easier to deal with a spill of just one material than a mixture); this may be a legal requirement for some substances – see information from the HSE;
- only keep the minimum working quantity of materials on site;
- protect storage from extremes in weather whenever possible, for example sunlight, frost;
- keep storage areas away, or isolated, from on site drainage, surface waters and groundwater and vehicle routes.

Make sure your product inventory is kept up-to-date and contains detailed information including, product types, trade names, UN numbers, Control of Substances Hazardous to Health (COSHH) Regulations data, volumes, and location on site or within the store.

There may be other legal requirements for your storage, for example health and safety requirements. It's your responsibility to find out what applies to your storage and make sure you comply.

Other sections of this guidance cover storage, primary and secondary containment, special storage requirements, delivery and maintenance procedures and how to deal with a spill.

6. Safe storage

6.1. Primary container

Make sure your primary storage containers have sufficient strength and structural integrity so they don't leak or burst in normal circumstances. For example, rusty or dented containers are unlikely to be fit for use. Containers with a packaging certificate and marked with United Nations (UN) inspection would normally be considered structurally sound as they are inspected and tested at regular intervals. But they should still be examined before use in case they have been damaged since their last inspection.

Repair or remove any damaged or unsuitable containers as soon as they are identified. Store hazardous substances according to relevant legislation (see Section 4).

Unless legal requirements say otherwise, you should store primary containers inside a building, under cover or protected from the elements by another method. Steel drums stored outside in a vertical position are at risk of rusting from rainwater, while plastic containers can deteriorate over time and become brittle.

We recommend that you don't store drums directly on top of one another because this greatly increases the risk of drums splitting under pressure or falling over.

If you're reusing containers, it's your responsibility to make sure what it's made from is suitable for the product you're planning to put into it and has a life expectancy suitable for your needs. You should also make sure that any residues from the previous contents are unlikely to contaminate or react with the new contents. See section 10 for information about how you can dispose of any residues legally and safely.

6.2. Secondary containment systems

It's good practice to store all drums or IBCs on, or in, an impermeable secondary containment system.

Secondary containment systems are designed to catch leaks or spills from the primary container while it's in use. **Make sure all your drums and IBCs are stored on, or in, a suitable secondary containment system**; this will significantly reduce the risk of a spill causing pollution. It will also allow the controlled recovery or treatment of any spilled material, and may stop burning liquids from spreading. **The secondary containment should not have any drainage.**

Containment methods include a bund (which can be around, or incorporated into, a storage facility), a drip tray, kerbs and any other system that will prevent a spilled product escaping. The system you choose will depend on:

- how close your site is to environmentally sensitive areas;
- existing on-site facilities;
- your operational needs;
- the quantities and nature of materials you store;
- their location within the site;
- relevant legislation.

The most common secondary containment options include:

Drip Tray

- A simple tray placed under storage containers to collect minor leaks and spills.
- Suitable for use with a single drum or a few small containers.
- Ideal for small containers or drums in storage or at their point of use.
- **If you store oil on a drip tray in drums, the tray must be able to contain at least 25% of the total drum volume.**



Dispensing sump trolley

- Proprietary system used for transporting and then dispensing a single drum or small container.
- Not suitable for use with IBCs due to their weight when full.
- Good where products need to be stored next to their point of use. Fully bunded when in horizontal position.



Sump pallets

- Pallets to hold containers with a sump to contain spills.
- Suitable for use with small containers, two, four or eight drums, or up to four IBCs.
- Containers are kept off the ground and containment is provided.



Bunded dispensing station

- Designed to allow drums or IBCs to be stored safely and collect any drips or spills while they're in use.
- Still providing secondary containment volume but with extra space to allow small containers to be filled over the secondary containment.



Decking

- Decking units allow containers, of any size, to stand off the ground on a grid while providing containment underneath.
- Proprietary units can be added to cover the floor area required, either in the area of use or in a dedicated store.



Drum racking, indoor storage

- Racks specifically for storing drums, either vertically or horizontally. They may have facilities that allow you to dispense from the drums.
- They are stored off the ground with integral bunding or can be used in dedicated stores.
- Drums stored horizontally would ideally be turned so both outlets are horizontal with each other (i.e. at 3 and 9 o'clock) this means not all the product will be lost if there's a leak.



Racking, external storage

- Similar to drum racking but designed for use outside.
- Manufactured with a roof and doors to keep rainwater off the drums or IBCs and the integrated sump.
- Drums stored horizontally should be turned as above.
- You need to consider the security of the area to reduce the risk of vandalism.



Dedicated internal store

- Purpose-built or adapted store room/area.
- Can be built to be suitable for any size container or a mix of containers.
- Ideal where substantial storage capacity is required.
- Containment can be provided using stepped or ramped access, kerbing, bund walls, sloping floors or use of a proprietary system.



Dedicated external store

- Purpose-built, or adapted, external storage area, for any storage container, incorporating containment design features, for example ramped access.
- Useful for storing large quantities of materials, particularly where ventilation is important.
- Containment provided as above. In addition, containers should be protected from the elements by roofing (which will also prevent rainwater accumulating) and be stored off the ground. Consider the need for fencing for security and to prevent containers being ejected in the case of fire.



For all the secondary containment options above, different manufacturers or suppliers may provide options that are manufactured from other materials, look different and have additional features from the examples shown. We don't endorse any of the products shown here.

6.2.1. Where's the best place to put your secondary containment and storage?

You should carefully consider where you put the store of each material you have on site.

The best option, unless health and safety would be compromised, is to store your drums and IBCs indoors. This reduces the risk of vandalism. It prevents the build up of rainwater in the containment which could become contaminated by any drips, leaks or spills and also reduces risks from extremes of temperature that can affect the integrity of the storage containers.

We recommend that you don't have storage areas or containers within 10 metres of surface water or 50 metres of a borehole, well or spring.

You should also consider how close your storage areas are to other environmental features and hazards including:

- surface water drains;
- sensitive groundwater areas, for example Source Protection Zones in England and Wales;
- flood plains, including high tidal water levels;
- designated vehicle movement areas;
- ignition sources;
- people who could be affected by odours, fire or spills, for example schools and houses;
- other storage areas that contain materials that would react with those in this storage area.

You can check if there are sensitive groundwater areas, Source Protection Zones or flood plains near your site on our websites or by contacting us. See reference 10 for guidance about storing materials in sensitive groundwater areas.

If you're planning to store any materials close to these areas you may need more protection than the minimum levels of secondary containment described in this PPG, for example bollards to protect storage areas from vehicle traffic. You may also need to protect your storage and secondary containment from rising flood waters. If you're in any doubt about the type of secondary containment you need, or where it can be placed, ask us for advice.

6.2.2. How big does your secondary containment need to be?

The amount of liquid your secondary containment facilities can hold should take account of the maximum volume of product you may be storing at any one time. If you have a fixed fire-fighting system you will need additional capacity for the quantity of fire-fighting media likely to be used.

Container type	Minimum secondary containment volume
Single drum	Secondary containment for drum storage can be provided by a drip tray with at least 25% of the volume of the drum. In Scotland, if you don't use a drip tray as secondary containment, you must have secondary containment with a minimum of 110% of the container volume.
Multiple drums	Secondary containment for drum storage can be provided by a drip tray with at least 25% of the total drum storage. In Scotland, if you don't use a drip tray as secondary containment, you must have secondary containment with a minimum of either 25% of the total volume of the containers or 110% of the largest container, whichever is the greater volume.
Single IBC	You can't use a drip tray with only 25% storage capacity if you're storing oils in an IBC. Secondary containment with at least 110% of the container volume.
Multiple IBCs	Secondary containment with a minimum of either 25% of the total volume of the containers or 110% of the largest container, whichever is the greater volume.

Where containers are stored inside a building, we recommend (and it may be required by law in the case of agrochemicals such as pesticides, see section 6.3.3) that containment facilities should be proportionate to the risk. The risk may be substantial; for example, in the case of agricultural stores, you should have capacity between 110% and 185% of the maximum storage capacity.

With large external stores, 25% containment capacity may result in low containment walls, which are quickly overwhelmed by rainfall or fire-fighting agents. We recommend an additional 100 mm height on the walls to account for this.

6.2.3. What should secondary containment systems be made from?

You can use secondary containment systems that are prefabricated from steel, plastic or fibre glass or you can build an in-situ concrete or masonry bund with suitable lining to make sure it's impermeable, kerbs, ramps or sloped floors. We have no preference for the type of system you use as long as it's able to contain the liquids you store and is suitable for your site and needs. All containment system walls and floors must be impermeable and resistant to attack from the materials stored. There are secondary containment systems available that are more suitable for short term storage or emergency

containment, for example some PVC containers with rigid supports. **There can be no drainage outlet from your secondary containment.**

Masonry and some constructed concrete structures aren't impermeable unless they're treated with a product designed to resist the materials you plan to store; they shouldn't have a damp-proof course. Floor joints should be avoided but, where they're required for constructional purposes, take great care that the joint sealing results in a complete and lasting liquid-proof seal and is resistant to heat, for example during a fire. Sealants must be able to withstand attack from any material likely to be stored.

A sloping floor together with a sump cast in the base slab will ease the recovery of spilled product and any accumulated rainwater. Ensure that gradients are within the safe working limits recommended by the manufacturer for any forklift trucks used.

6.2.4. What else do you need to think about?

The secondary containment system you choose has to work for you and your processes. When you're designing your storage – be it a prefabricated system, purpose-built or adapted facility - you should take account of other aspects.

Containment:

- site environmental sensitivity, including underlying groundwater;
- nature of the product, e.g. toxicity, persistence;
- impermeability and resistance to attack from materials stored;
- fixed fire-fighting systems and fire water containment;
- fire resistance, including the effects of fire on the containment system;
- effect of extremes in weather, freezing or high temperatures.

Safety:

- signage;
- ventilation at high and low level (above secondary containment);
- manual handling;
- the need to segregate products, especially if they are incompatible and would react if mixed.

Fire prevention and control:

- separation from ignition sources, process areas, occupied buildings and site boundaries;
- distance between stores, to stop fire spreading, consult your local FRS for advice;
- fire detection systems;
- water supply for fire fighting;
- access for fire fighting vehicles and personnel;
- discuss fire fighting options with your local FRS.

Security:

- protection from vandalism, unauthorised use and arson.

You should also consider all relevant legislation, see section 4.

Services such as electricity supply should be carried over the secondary containment system rather than penetrating it. Mains water supply (except water-based fixed fire-fighting systems and safety shower/eye wash stations) shouldn't enter the containment area of the store. **Make sure there isn't a drainage discharge from the secondary containment.**

External walls next to any racked storage should be strong enough to withstand the force of the rack, or its contents, falling against them. In clad buildings where racking extends above any containment system, provision should be made to prevent a high level leak running down between the cladding and the containment wall. Containers shouldn't be stored at such a height or so close to the walls that they might fall outside the containment system or that liquid 'jetting' from a leak would reach over the wall.

6.3 Special storage requirements

If the quantity of hazardous substances you store exceeds the thresholds set in the Control of Major Accident Hazards (COMAH) Regulations, the requirements of those regulations will supersede this guidance. These and HSE guidance give information on the separation distances to minimise risk from fire and reactions.

Otherwise, in some circumstances, because of the risks associated with particular materials, you may need additional pollution prevention measures such as:

6.3.1. substances hazardous to health

When drums and IBCs are being handled, particularly during dispensing, there's the potential for minor leaks, emissions or spills. Under the Control of Substances Hazardous to Health (COSHH) Regulations, employers are required to carry out a suitable and sufficient assessment of the risks to their employees' health and the steps needed to reduce any identified risk. The HSE website gives information on COSHH and other health and safety requirements.

6.3.2. flammable liquids

The HSE define flammable liquids, in the Classification, Labelling and Packaging Regulations, as liquid with a flashpoint of 60°C or below. If you store and use flammable liquids (including highly flammable liquids and petroleum products) you must comply with health and safety legislation. The HSE guidance in reference 11 details the relevant legislation and advises on the safe storage of flammable liquids. Additional guidance on the safe use, handling and dispensing of flammable liquids is also available, reference 12.

6.3.3. pesticides

You must store pesticides in accordance with the Food and Environment Protection Act 1985 (FEPA) and the Control of Pesticide Regulations 1986 (COPR) as amended. You can only have or store pesticides that have been approved for use in the UK and for which the approval is still valid. If you store more than 200 litres (200 kg) of pesticides for sale or supply, you must follow the statutory guidance in the 'Yellow code of practice', reference 13, and have the necessary store keeper training and certification. The store and its management arrangements must be supervised by someone holding a certificate of competence and it must be inspected annually, as a minimum, by an independent expert. A store registration scheme is operated by BASIS (Registration) Limited. See useful websites.

New regulations to implement the Sustainable Use Directive are expected to be introduced during 2011. These may change pesticide storage, sale or supply, use, application and training or certification requirements. Check the government on-line support and advice service to see what will apply to your pesticide storage.

If you're storing pesticides for professional uses, for example farming, horticulture, forestry and amenity area use, industrial land and sports grounds, you must follow the statutory guidance in the codes of practice for plant protection products, references 13 and 14.

Further guidance on pesticide storage is available (Reference 15).

6.3.4. timber treatment chemicals

Timber treatment compounds are also pesticides and are subject to FEPA and COPR requirements as above. See Reference 16 for sector-specific guidance.

6.3.5. solvent storage

Make sure that any organic, and particularly chlorinated, solvents are stored safely. Even a small spill of these materials can seriously pollute groundwater making it unusable for drinking water supply and toxic to aquatic life. Groundwater is an important source of public and private drinking water which, once contaminated, is very difficult and expensive to clean up.

You should store all solvents according to the guidelines in reference 10, making sure you have appropriate secondary containment and regularly check your storage for needed maintenance and leaks.

6.3.6. oil storage

If you're storing oil in drums or IBCs, you must comply with the legal requirements highlighted in yellow throughout this guidance note. More information is available in references 6 and 7 and useful websites.

7. Delivery and handling

Many pollution incidents involving drums and IBCs happen during the delivery and handling of containers, for example forklift damage or spills.

You should designate and clearly mark delivery, handling and transfer or decanting areas. Make sure the area is impermeable and isolated from the surface water drainage system, possibly with the use of ramps, sumps or drainage shut-off valves, to minimise the risk of your storage causing pollution if an accident happens. If you're unable to isolate the area from surface water drains, consider placing reusable drain covers over the drains during every delivery to prevent pollution if there is an accident. Think about putting a roof or canopy over the area to simplify the management of surface water in these areas.

Make sure everyone knows the correct procedures for these activities. Make someone responsible for supervising all deliveries and transfer processes. They should know how to safely use the pollution control contents of spill kits appropriate to the materials you store, see section 9.

Only allow forklift trucks to be used by trained operators and supervise deliveries (loading and unloading). Any damaged containers or spills should be reported immediately for action (see Sections 8 and 9). Use drum carriers, drum taps, funnels and containers with lids to minimise the risk of spillage during handling and transfer.

If you decant materials from or between drums or IBCs you should make sure this is only done in a designated area, as above, and by people who know your specified management procedures. You should only use taps attached to the containers or a specialist pump system. Unless you are

decanting into a container with a wide neck, use a funnel to reduce the chance of material spilling. The funnel should be stored within the secondary containment, or in a secure area, when it's not in use so drips can't cause pollution. Make sure all taps are closed after the transfer of materials is completed and that there are no leaks from valves or seals.

8. Inspection and maintenance

Drums and IBCs will last longer if they're protected from direct sunlight and rainfall, both of which can degrade the primary container and secondary containment.

Primary containers and secondary containment facilities should be inspected regularly, and checked at least weekly, unless the material you're storing means you need to inspect it more frequently, to make sure that:

- they aren't damaged or leaking, for example no corrosion, deformities, cracks or stains from the material stored;
- rainwater that has collected in the bund or drip tray is removed;
- the bund or drip tray is clean and clear of product and debris;
- product label signs and hazard information are undamaged;
- maximum storage volumes and stack heights haven't been exceeded and products are stored in the correct area;
- all taps not in use are closed and any pipework attached to the container is completely inside the secondary containment.

In extremes of weather conditions, for example prolonged hot weather, heavy rainfall or freezing temperatures, you may need to make inspections more frequently.

If any rainwater, or other liquids, have collected in the secondary containment, this can indicate that the secondary containment is undamaged. But collected liquid will reduce the secondary containment capacity and should be pumped or bailed out in a controlled way and, if contaminated, should be legally disposed of, see section 10.

Any structural or other defects should be repaired promptly using the appropriate technique to ensure the container or containment system retains its integrity. If the problem can't be repaired, the container or containment system should be taken out of use immediately.

Keep a record of inspections, cleaning and maintenance.

9. Dealing with spills

We recommend you assess the risk of spills from your storage so you can put management systems in place to prevent them. Safe secure storage, careful deliveries/transfers and training, on site and for drivers, are essential for pollution control. We have guidance to help you assess the risk at your site (reference 4) and to help you decide what actions to take if you do have a spill (reference 17).

You should produce a detailed site drainage plan to help if you ever have a spill or fire. This can be part of your site's pollution incident response plan; reference 18 gives guidance and a template to help you. All staff should receive training on their responsibilities, such as dealing with a spill or fire, how to use pollution prevention equipment and their personal health and safety. If you have a spill and aren't sure what to do, or if you can't take action to stop it reaching the environment, call us on our hotline, 0800 80 70 60.

You should have spill kits that contain products suitable for dealing with what you store on site or transport. Your spill kit contents could include leak-sealing putty, over-drums, drain seals, oil or chemical sorbents and personal protective equipment (PPE). These should be located both within or near the storage area and away from it (in case during an event it's not possible to reach the equipment near the storage containers). All staff should be trained how to use this equipment. After a spill, replace any spill kits and equipment to make sure they're ready for the next time they're needed.

We recommend you:

- Have a 'quarantine area' where leaking containers can be placed safely.
- Have a leak-sealing kit available at delivery and handling areas, or other high-risk locations, to temporarily seal leaking containers until they can be put somewhere safe or taken out of use. You may be able to use temporary secondary containment, for example for small portable containers or portable tanks.
- Carry a spill kit on all vehicles transporting drums and IBCs, with PPE appropriate to the goods being transported. Depending on what you're transporting, this may be a legal requirement. In some circumstances, this may mean a vehicle should have a dual purpose spill kit for the material being carried, the fuel tank and any fuel additives.
- If you're storing large numbers of drums or IBCs ask your local FRS for advice about distance between storage sections, road widths and fire prevention.
- Never wash away spilt material or use detergents or dispersants unless you've planned for this, know your drainage system can contain the spill, have consulted us and included it in your pollution incident response plan.

Contain any spillage following the pollution control hierarchy in reference 17. In high-risk areas, consider the use of cut-off or isolation valves in the drainage system.

All contained spills and sorbents or pollution control equipment used to control the spill should be stored safely until they can be disposed of legally, see section 10.

10. Waste management

Check the government on-line business advice and support service to see your up to date legal requirements for your waste storage and management, see useful websites.

If you produce, import or arrange for waste to be disposed of, you have a legal responsibility to make sure it's stored, transported, kept, treated and/or disposed of without harming the environment. This is called your Duty of Care and it's a legal requirement.

If you produce hazardous waste, special waste in Scotland, for example waste oils, acids and solvents and parts or sorbents contaminated with these, legal requirements apply.

In England and Wales you must be registered as a hazardous waste producer if you produce 500kg or more of hazardous waste in 12 months.

It's illegal to dilute or mix different categories of wastes and you must store them separately, unless you hold a permit or licence that specifies you can mix them.

You can't move hazardous or special waste without a consignment note, unless it's an emergency. If you have to move hazardous or special waste in an emergency, you must take steps to minimise the risk to the public or to the environment. You must complete the consignment note as soon as possible.

10.1 Waste storage

Waste containers must always be clearly labelled with their contents. All waste and waste containers should be stored in designated areas which are isolated from surface water drains or direct discharge to the environment.

The area where waste is collected and stored should be able to safely contain any spill or leak. Empty containers shouldn't be allowed to accumulate, but should be collected by your supplier (where possible), dealt with using suitable on-site facilities or removed as soon as possible by a registered waste carrier to a permitted or licensed facility. It's a good idea to remove wastes often enough so they don't cause odour, pest or vermin problems and to reduce the risk of fire. For further information on the storage and disposal of waste oils, see reference 19.

In Scotland, if you store waste temporarily on your site, you must meet the requirements of a Paragraph 41 exemption from Waste Management Licensing, see useful websites. The exemption doesn't have a limit on the volume of non hazardous waste you can store. But if you store special waste, there are specified maximum total volume limits for different cases and you mustn't store it for longer than 12 months. You don't have to register the exemption with SEPA, but you can register it on-line if you need confirmation for a site audit.

11. Glossary

Environmentally sensitive area	Examples include: Site of Special Scientific Interest (SSSI), Area of Special Scientific Interest (ASSI), Special Area of Conservation (SAC), Special Protection Area (SPA), National Nature Reserve (NNR), Sites of international conservation importance – Ramsar sites, areas of Outstanding Natural Beauty (AONBs), National Scenic Areas (NASs).
Fixed fire fighting system	Fire fighting apparatus installed at a site, not fire extinguishers placed around a site. Designed specifically for a site and the materials present to make sure a fire is put out quickly and effectively. Fire fighting agent is chosen for the product and equipment on the site.
Groundwater	Water below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil. The saturation zone is where all the cracks in the rock and all the spaces between the grains of rock and within the soil are filled with water, these are known as aquifers.
Hazardous waste	Wastes, specified in the European Waste Catalogue, that may be harmful to human health or the environment. This includes but isn't limited to: <ul style="list-style-type: none"> • paint (oil and solvent based); • oils and oily sludges, for instance engine oil; • other chemical wastes such as disinfectants, solvents, insecticides and pesticides; • garage waste such as used oil/fuel filters, aerosols, antifreeze and brake fluids, lead acid batteries, contaminated rags.

Primary container	The container the material is stored in, for example a tank, intermediate bulk container or drum. It's the first line of defence and must be fit for purpose.
Secondary containment	This is a bund, or a drip tray. Secondary containment systems must be maintained and be big enough to contain a spill from the associated container/s.
Special waste	The term used in Scotland for what is known as Hazardous waste in England, Northern Ireland and Wales. See Hazardous waste above.
Spill kit	This is a collection of pollution control equipment held in one place and specific to the materials you have on site. Proprietary oil and/or chemical spill kits are available; check with your pollution control equipment supplier that the contents are suitable for your needs before buying these. We recommend storing a spill kit near to where it may be needed, for example next to storage containers or delivery areas and in an alternative location in case it isn't safe to reach some of the spill kits during an incident.
Surface water	This includes rivers, streams, canals, burns, ditches (including ones that are temporarily dry), lakes, lochs, loughs, reservoirs, ponds, estuaries and coastal waters, up to three miles offshore.

12. References

All the Pollution Prevention Guidance notes (PPGs) are available at:

www.environment-agency.gov.uk/ppg

<http://www.doeni.gov.uk/niea/index/publications.htm?act=l&typ=s&ftx=ppg>

www.sepa.org.uk/about_us/publications/guidance/ppgs.aspx

1. [Code of Practice on Guidance on Regulation 2009](#).
2. Above ground oil storage: PPG2.
3. Installation, decommissioning and removal of underground storage tanks: PPG 27.
4. Controlled burn: PPG 28.
5. [COMAH CA Delivery Guides](#) under the Strategic Topic Delivery Guide heading. Especially: secondary and tertiary containment; emergency planning.
6. For England, [Guidance note for the Control of Pollution \(Oil Storage\) \(England\) Regulations 2001](#). Department for Environment, Food and Rural Affairs (Defra), tel: 0870 1226 236
For Northern Ireland, [Guidance note for the Control of Pollution \(oil storage\) Regulations \(Northern Ireland\) 2010](#). Department of the Environment, tel: 028 9054 0540.
For Scotland, [Guidance note for the Water Environment \(Oil Storage\) \(Scotland\) Regulations 2006](#). Scottish Executive Government, tel: 08457 741 741 or 0131 556 8400,

7. For England, [Keep your oil safe: The Control of Pollution \(Oil Storage\) \(England\) Regulations 2001](#) leaflet. Environment Agency.
For Northern Ireland contact the NIEA for up to date information.
For Scotland, Leaflet on Scottish Oil Storage Regulations - [Updated advice on storing oil in Scotland](#). SEPA
8. For England, [The Environmental Damage \(Prevention and Remediation\) Regulations 2009](#): Statutory Instrument 2009 No. 153
For Northern Ireland, [The Environmental Liability \(Prevention and Remediation\) Regulations \(Northern Ireland\) 2009](#): Statutory Rules of Northern Ireland 2009 No. 252
For Scotland, [The Environmental Liability \(Scotland\) Regulations 2009](#): Scottish Statutory Instrument 2009 No. 266, and amendment.
For Wales, [The Environmental Damage \(Prevention and Remediation\) \(Wales\) Regulations 2009](#): Statutory Instrument 2009 No. 995 (W.81)
9. For England and Wales, [Environmental Permitting \(England and Wales\) Regulations](#): Statutory Instrument 2010 No. 675 and amendments
For Northern Ireland, contact the Northern Ireland Environment Agency for guidance on the legislation that covers your site or activities.
For Scotland, see useful websites, and contact SEPA for guidance on Pollution Prevention and Control (PPC).
10. For England and Wales, [Defra Groundwater Protection Code](#) – solvent use and storage and [Groundwater Protection: Policy and Practice \(GP3\)](#).
For Northern Ireland, [Policy and practice for the protection of groundwater in Northern Ireland](#).
For Scotland, [SEPA Groundwater protection policy for Scotland](#), especially section F: The storage and handling of chemicals.
11. [HSG51 Storage of flammable liquids in containers](#). ISBN 978 0 7176 1471 4
12. [HSG140 Safe use and handling of flammable liquids](#). ISBN 978 0 7176 0967 3
13. [Defra Code of practice for suppliers of pesticides to agriculture, horticulture and forestry](#), The “Yellow Code”. Product code PB 3529.
14. For England and Wales, HSE, Chemicals Regulatory Directorate – [Pesticides Code of practice for using plant protection products](#), PB11090.
For Scotland, [Pesticide Code of Practice for Using Plant Protection Products in Scotland](#).
15. [Guidance on storing pesticides for farmers and other professional users](#). HSE Guidance Note AIS16. (This document is available in Welsh as Guidance Note AIS16W).
16. Treatment Installations Code of Practice for Safe Design and Operation - 5th edition, October 2009. Wood protection association www.wood-protection.org
17. Incident response: dealing with spills: PPG 22
18. Pollution incident response planning: PPG 21
19. Storage and disposal of used oils: PPG 8

References 11 and 12 may be obtained from: HSE Books, PO Box 1999, Sudbury, Suffolk, CO10 2WA. Tel: 01787 881165.

Other useful sources of information:

Cost-effective management of lubricating and hydraulic oils GG227. Envirowise, Tel: 0800 585 794; <http://envirowise.wrap.org.uk/>.

Managing firewater run-off and major spillages: PPG18

Pollution Prevention Pays booklet

Useful websites:

COSHH Essentials: <http://www.coshh-essentials.org.uk/>

The Department for Business Innovation and Skills: www.bis.gov.uk

The government on-line business advice and support service:

- For England – Business Link www.businesslink.gov.uk
- For Northern Ireland – NIBusinessInfo www.nibusinessinfo.co.uk
- For Scotland - Business Gateway www.bgateway.com
- For Wales - FS4B www.fs4b.wales.gov.uk
- NetRegs – www.NetRegs.gov.uk

Health and Safety Executive: <http://www.hse.gov.uk/>

The Oil Care Campaign:

- [Publications](#), for example leaflets and tank stickers, are available from, search for Oil Care
- For details of [oil recycling facilities](#)
- In Northern Ireland: [Oil Care Campaign](#)
- In Scotland: [Oil Care campaign](#)

Oil Storage Regulations, questions answered

- For England, [Frequently asked questions](#)
- For Scotland, [SEPA oil storage pages](#)

Pesticides:

- BASIS (Registration) Limited, St Monica's House Business Centre, 37 – 39 Windmill Lane, Ashbourne, Derbyshire, DE6 1EY. Tel: 01335 343945: <http://www.basis-reg.com/>
- HSE Chemicals Regulation Directorate, for pesticides information: www.pesticides.gov.uk

Pollution Prevention and Control Permits in Scotland: [SEPA page on PPC permit](#)

Waste minimisation information available from:

- In England: Envirowise: <http://envirowise.wrap.org.uk/> Tel: 0822 585 794
- In Scotland: Zero Waste Scotland <http://www.zerowastescotland.org.uk/> Tel: 0808 100 2040
- In Wales: Envirowise: <http://www.envirowisewales.org.uk/>

Waste management licensing in Scotland - information on [exemptions from Waste Management Licensing](#), on the SEPA website

[Water regulation in Scotland](#), CAR regulations included, on the SEPA website

Photos are provided by Denios UK, Fentex and Environment Agency staff.

We welcome any questions or comments about this guidance, or suggestions about how we could improve it. Please email us at pollution.prevention@environment-agency.gov.uk, phone us on 08708 506 506 or write to us at:

Environment Agency
99 Parkway Avenue
Sheffield
S9 4WG.

This PPG is next due to be reviewed by May 2015.

UK wide Incident/Pollution hotline 0800 80 70 60 (24 hrs)		
Floodline (England, Wales and Scotland) 0845 988 1188		flooding incident line (NI) 0300 2000 100
Environment Agency	Scottish Environment Protection Agency	Northern Ireland Environment Agency
www.environment-agency.gov.uk	www.sepa.org.uk	www.ni-environment.gov.uk
HEAD OFFICE Horizon House Deanery Road, Bristol BS1 5AH	CORPORATE OFFICE Erskine Court The Castle Business Park Stirling FK9 4TR	HEAD OFFICE Klondyke Building Cromac Avenue Gasworks Business Park Lower Ormeau Road Belfast BT7 2JA
Tel: 0117 934 4001	Tel: 01786 457 700 Fax: 01786 446 885	Tel: 0845 302 0008
Pollution.prevention@environment-agency.gov.uk	netregs@sepa.org.uk	NIEAPollutionPrevention@doeni.gov.uk

PMHO0511BTPG-E-E