

# Writing your Fire Prevention Plan (FPP) - The Basics

This is a template for an FPP. It should be used as a guide to produce your FPP and read in conjunction with the current guidance. It includes all the minimum regulatory standards that you need to follow on your site. If you complete all of the sections as laid out in the template and follow all of the minimum standards, you will increase the likelihood of your fire prevention plan being approved

If you do not follow this template or all of the minimum standards or your FPP does not provide equivalent protection from the risk of pollution from fire, your plan may not be approved. In some cases an approved FPP is required before we grant an application for a permit, variation or transfer. For existing activities we will normally expect an operator to have an FPP compliant with our guidance and may take enforcement action if that is not the case. The template has 3 sections:

1. Your site
2. Preventing fires
3. Reducing the impact of fires

Each section is explained with points which need to be considered and addressed. The list is not exhaustive and you may need to consider other issues which may be relevant to your individual operations.

In addition to the information below, you must demonstrate that your FPP is easily accessible and understood by those working on site. Producing an FPP which is a single, standalone document ensures that it can be accessed quickly when needed and all the information is readily available on request. In addition, regular training and exercises with staff on site to test the workability of the plan should be in place.

## Section 1 – Your site

This section details:

- your activities
- your layout
- your infrastructure
- your local community

Your site	
<b>Activities</b>	You need to detail what activities you undertake at the site. You should include your waste management activities as well as any other activities that could be a fire risk.
<b>Your location plan and sensitive receptors review (see also site plan below)</b>	<p>You need to produce a plan(s) showing sensitive receptors within a 1km radius of the site. Sensitive receptors include:</p> <ul style="list-style-type: none"><li>• Schools, hospitals, nursing and care homes, residential areas, workplaces</li><li>• Protected habitats, watercourses, groundwater, boreholes, wells and springs supplying water for human consumption</li><li>• Roads, railways, bus stations, pylons (on or immediately adjacent to the site only), utilities, airports</li></ul> <p>The plan should have a compass rose showing north and indicating the prevailing wind direction.</p> <p>A review of sensitive receptors identified should be undertaken, assessing the likelihood of them being impacted and taking into account wind direction and speed. You should identify any mitigation measures or procedures (e.g.</p>

	notification) that will be in place during an emergency on site to limit the impact from a fire.
<p><b>Your site plan (this may be included in the plan above)</b></p> <p><b>There may need to be more than one plan to clearly identify all the features</b></p>	<p>Your fire prevention plan must include a site plan(s) showing:</p> <ul style="list-style-type: none"> <li>• Layout of buildings</li> <li>• Any areas where hazardous materials are stored on site</li> <li>• Main access routes for fire engines and any alternative access points around the site perimeter to assist fire fighting</li> <li>• Hydrants and water supplies</li> <li>• Areas of natural and unmade ground</li> <li>• The location of fixed plant or where mobile plant is stored when not in use</li> <li>• Drainage runs, pollution control features (such as drain closure valves and fire water containment systems)</li> <li>• Storage areas with pile dimensions and fire walls (where applicable) - includes wastes stored in a building, bunker, or containers</li> <li>• Quarantine area</li> </ul>

## Section 2 - Preventing fires

This section reviews the risks there are on your site and what procedures you have in place to minimise them. It needs to review all activities you undertake on site and cover when the site is operational and not operational.

Preventing fires	
<p><b>Pile sizes/volumes and dimensions</b></p>	<p>You need to provide details of what and how much waste you will be storing at any one time. This includes waste once it has been accepted, as well as in storage before and after treatment. You should include the:</p> <ul style="list-style-type: none"> <li>• Total volume of waste stored on site at any one time</li> <li>• Total volume for each waste type</li> <li>• Total amount for each form of waste, e.g. unprocessed, shredded, chipped, bales, etc. You should aim for the majority of your waste (ideally 90%) to remain unprocessed until it is required for removal off site</li> <li>• Volume/size for the piles of waste. This should include maximum height, length and width. For all waste piles, the maximum height allowed is 4 metres and the maximum length/width allowed is 20 metres</li> <li>• Storage locations should be shown on your site plan</li> </ul> <p>The sizes need to be managed so that a fire within a pile would burn for a maximum of 4 hours. See section 9.1 of the FPP document for guidance on maximum sizes/dimensions. If your waste piles contain a mixture of combustible wastes, you should work out the maximum limits based on the type of waste that makes up most of a mixed pile.</p>
<p><b>Storage duration</b></p>	<p>You must detail how long you are storing your waste, taking into account that no waste can be stored in excess of 6 months<sup>1</sup>.</p> <p>You must use good stock rotation (i.e. must show how you will follow the 'first in, first out' principle) and show that you have a clear method to record and manage the storage of all waste on site. You must also outline the actions you will take if waste is being stored in excess of the timescales you have detailed.</p> <p>You need to consider if the waste has previously been stored on another site, as the 6 month storage duration is the total maximum time. Therefore, you need to add together all the storage periods on previous sites to calculate the total figure.</p>

<sup>1</sup> unless the material is compost and the Environment Agency has agreed that you can store it for longer

	Your operation may have seasonal variations in the demand for the incoming or outgoing waste. You must detail how this will be managed to reduce the likelihood of waste being stockpiled.
<b>Monitoring</b>	<p>If you're storing combustible wastes in the maximum pile sizes for longer than 3 months, you must show additional measures to prevent self-combustion and monitor and manage the waste.</p> <p>You should have a clear written procedure for when and how to monitor, what trigger levels you will have, what to do if trigger levels are reached or if other problems are identified. You should include how you ensure staff are trained to detect and manage hotspots and all persons holding responsibilities on site.</p> <p>In the absence of specific evidence you should assume a trigger temperature of 50°C. You need to ensure that you can monitor all of the piles and not just the surface (e.g. with a probe or other device that can take representative readings from the centre of a pile), as temperature on the surface is unlikely to represent that at the core.</p> <p>Your procedures need to include what to do when the site is not operational/out of hours.</p>
<b>Actions to limit self-heating</b>	<p>You must outline how you'll control heat within piles to prevent self-combustion (e.g. allowing waste to cool after treatment, turning piles, shading waste stockpiles).</p> <p>You need to consider the design and layout of stockpiles to ensure they can be accessed easily. You should consider available plant, time it will take to completely turn the waste and the likely frequency of these measures.</p> <p>If your storing baled waste, in addition to the measures outlined above, you must outline what procedure you will use to make sure you assess a representative number of bales (minimum 10%) during monitoring. You should also outline how these bales will be rotated so that those which are at the core of the pile (most well-insulated) are frequently moved to the outside of the pile.</p>
<b>Arson or vandalism</b>	<p>You should detail the procedures in place to prevent arson or vandalism at your site. This may include security fencing, CCTV and security patrols. You must include arrangements for outside of working hours.</p> <p>Further details should be provided where necessary, for example how is CCTV monitored? What are the procedures if a security patrol or CCTV finds a problem on site?</p>
<b>Plant and equipment</b>	<p>You should detail all of the static and mobile plant and equipment you use on site and your maintenance procedures. These should include clear actions that you take if a problem is found. Records should be kept of the maintenance and any action taken following a problem (examples should be shown within the FPP).</p> <p>In addition, you must fit vehicles with fire extinguishers and ensure unused mobile plant is kept away from combustible waste.</p>
<b>Infrastructure and site inspections</b>	<p>You should undertake regular site inspections and maintenance around the site and keep a record of these checks. For example, measures to prevent build up of loose combustible waste, dust, fluff and litter around the site or measures to check the integrity of any building, wall or drainage channel.</p> <p>You should detail when and how often you will undertake the checks and what action you will take if problems are found.</p>
<b>Electrical faults</b>	You should minimise the risk of electrical fault by having all electrics on site certified by a qualified electrician. There should be a documented schedule in place to ensure regular maintenance.
<b>Ignition sources</b>	<p>You need to detail how you will limit ignition sources on your site. This includes:</p> <ul style="list-style-type: none"> <li>• Keeping sources of ignition (e.g. naked flames, heaters) at least 6m away from any combustible or flammable waste</li> </ul>

	<ul style="list-style-type: none"> <li>Sources, such as heating pipes and industrial heaters should have documented procedures for their safe use</li> <li>Safe working practices, such as a permit to work system, should be in place for staff and contractors when undertaking hot working, such as welding or cutting. You should carry out a fire watch for a suitable period after hot works have ended.</li> <li>Smoking should be prohibited or only be undertaken in designated, safe areas.</li> </ul> <p>In addition to the above, you should ensure any waste specific ignition sources are detailed and mitigation is in place. For example:</p> <ul style="list-style-type: none"> <li>If you are accepting ELVs on site, you need to ensure batteries are disconnected or removed from un-depolluted vehicles before they're stockpiled for de-pollution. This is to ensure the batteries don't short circuit, potentially causing fires.</li> </ul>
<b>Heat and spark prevention</b>	<p>You need to review all plant and equipment which could cause heat or a spark and detail the actions you take to prevent it.</p> <p>For example, a fire watch at regular intervals during the working day to detect signs of a fire caused by dust settling on hot exhausts and engine parts. A high risk time is the hour after plant/machinery has been switched off when dust can settle on hot exhausts etc. A fire watch may simply be carrying out visual checks.</p>
<b>Gas bottles and other flammable items</b>	<p>FPP guidance doesn't apply to non-waste materials such as gas cylinders, aerosols and combustible liquids. However, you must detail where gas bottles and other flammable items are kept, to ensure they are isolated. You should also set out procedures for regular inspections to ensure they remain safe.</p> <p>You must prevent fuels and combustible liquids leaking or trailing from site vehicles and ELVs.</p>
<b>Smoke/heat/flame detectors</b>	<p>You must have procedures in place to detect a fire in its early stages so you can reduce its impact. Your detection system should be proportionate to the nature and scale of waste management activities on site and their associated risks.</p> <p>Appropriate automated systems may include smoke and heat detectors, CCTV visual flame detection systems and spark, infrared and ultraviolet detection.</p> <p>The design, installation and maintenance must be covered by an appropriate UKAS-accredited third party certification scheme or show equivalent standards.</p> <p>However, you should be aware that this only identifies when there is a problem, rather than resolving it. What are your procedures if it is activated? How does it notify you or the emergency services? What are the maintenance procedures to ensure it is fully functional?</p>

## Section 3 - Reducing the impact of a fire

This section details the additional information that you will need to set out to provide evidence that if a fire were to occur on your site that it can be extinguished in less than 4 hours. In the majority of cases this will be achieved by active fire fighting. Your justification needs to be given for how waste will be managed on your site to enable this and will depend on the location and scale of the site/operation detailed in section 1. Justification should be from an environmental risk perspective rather than financial.

Management and storage of waste	
<b>Waste acceptance – incompatible/hot loads</b>	You must document your waste acceptance procedures for non-permitted, incompatible waste or hot loads. You must have written procedures to identify

	<p>potentially reactive loads or wastes which are incompatible when stored together.</p> <p>Your plan should detail how to identify them and subsequent action to be taken. You must have a process in place to quarantine this material and an appropriate quarantine area on site.</p>
<b>Waste acceptance – permitted waste</b>	<p>You must provide details on:</p> <ul style="list-style-type: none"> <li>• How much of each waste you accept daily</li> <li>• Where the waste originates from. This should help identify how old the waste is, which could increase the risk of self combustion.</li> <li>• What form is the waste in? Has it been pre-treated (e.g. shredded, sorted)? Is it arriving as mixed loads?</li> </ul>
<b>Waste treatment</b>	<p>You need to explain the treatment processes the waste goes through on site.</p> <p>This should include how soon after arrival the waste treated, whether the treatment causes any heat and how this will be managed.</p>
<b>Waste storage – separation distances</b>	<p>You need to detail the separation distances between the waste piles/storage areas and how this will be maintained.</p> <p>The distances should be suitable both to prevent the spread of fire between piles and also allow for the safe access of emergency vehicles and plant during an incident.</p> <p>See section 11.1 of the FPP guidance for guidance on the minimum distances. A minimum of 6m separation must be in place between waste piles and the site perimeter, buildings or other combustible materials.</p>
<b>Fire Walls</b>	<p>Bays or fire walls can be used to reduce the separation distances between piles. To provide the same protection as the minimum separation distance, they need to be properly designed, constructed, maintained and managed.</p> <p>Bays or fire walls must be constructed to appropriate standards so that they:</p> <ul style="list-style-type: none"> <li>• Resist fire (both radiative heat and flaming)</li> <li>• Have a fire resistance period of at least 120 minutes to allow waste to be isolated and to enable a 4 hour extinguishing of the fire</li> </ul> <p>You also need to detail:</p> <ul style="list-style-type: none"> <li>• How waste will be rotated within the bays to ensure oldest waste is removed (i.e. first in, first out policy) and details on how this will be recorded</li> <li>• If temperature monitoring is required, how you'll check the temperatures of all the waste within the bay, to ensure you carry out representative checks on the entire volume of the pile</li> <li>• The specification and construction of the walls and how they will provide an effective thermal barrier</li> <li>• How you will access the bays to allow waste to be moved easily in an emergency and details on quarantine area and process</li> <li>• The freeboard space at the top of the walls and how this will be enough to prevent heat/flames/embers spreading to adjacent bays (this may require flame height and radiation calculations)</li> </ul>
<b>Quarantine area</b>	<p>You need to provide detail on your quarantine area. The area should be identified on the site plan and must be large enough to hold at least 50% of the volume of the largest pile (or row of ELVs/containers etc.). There must be a separation distance of at least 6 metres around the quarantine area.</p> <p>This means it can be effectively used as an area to douse burning material or clear un-burnt material to protect it from combustion.</p> <p>For operational reasons you can keep the location of the quarantine area flexible. If so, you must identify on your site plan all the areas you could potentially use.</p>

	<p>If you use your quarantine area to store material temporarily (for example, non-permitted wastes) you must make sure residence time is as low as possible. In the event of a fire, you must remove waste immediately.</p> <p>Your FPP must include details of how staff on site will be trained to safely move material to the area and the procedure you will use to clear the area if required.</p>
<p><b>Storage within buildings and suppression systems</b></p>	<p>In general, the Fire and Rescue Service will not enter a building unless there is immediate risk to life, due to risk of building collapse and other hazards and complexities of the incident.</p> <p>Therefore, if you are storing combustible waste in a building, we require that some form of appropriate suppression system is in place. You should detail the specification of the system and you must demonstrate that it could extinguish a fire within 4 hours.</p> <p>Appropriate systems (e.g. sprinklers, water spray, water curtains, fire blankets) should be proportionate to the nature and scale of waste management activities on site and their associated risks.</p> <p>For all automated suppression equipment, the design, installation and maintenance must be covered by an appropriate UKAS-accredited third party certification scheme.</p>
<p><b>Active fire fighting</b></p>	<p>You must detail your procedures of what you will do in the event of a fire and demonstrate you have designed your site to allow for active firefighting. These procedures should work towards extinguishing any fire within 4 hours.</p> <p>It is important to note, active firefighting doesn't mean that you or your staff have to fight the fire. No one should put themselves at risk by trying to fight a fire. Active firefighting means having the resources available at all times to fight a fire and aid the FRS. The resources needed may include plant (to move waste around the site as needed), staff and sufficient water supply.</p> <p>Active fire fighting can include (but is not limited to) any of the following, either together or in conjunction:</p> <ul style="list-style-type: none"> <li>• The use of water or foam (via hoses or designed suppression system). This may involve quenching burning waste or cooling unburnt material</li> <li>• Covering the burning waste with soil (or other suitable material) to suffocate a fire and limit oxygen supply. This is an acceptable option as long as the Environment Agency has agreed and you remove contaminated material as soon as possible.</li> <li>• Breaking apart the burning pile to allow water/foam to penetrate</li> <li>• Removing un-burnt material close to the fire</li> <li>• Moving the burnt material to reduce the fuel available and allow material to be quenched (in hoses or in pools or tanks of water)</li> </ul> <p>You need to include details of how (once the fire is extinguished) you will dispose of solid and liquid wastes arising from a fire.</p> <p>All these techniques may be used by staff on site, as long as they're suitably trained and, in some cases, supervised by the fire and rescue service. However, protecting the health and safety of people on site must be your first priority.</p>
<p><b>Water supply</b></p>	<p>You need to detail what water is available to actively fight a fire and by what means it will be available (e.g. via mains water, tanks, abstracted, hydrant).</p> <p>You must have enough water available to manage a worst case scenario, which is defined as your largest waste pile catching fire.</p> <p>As a benchmark, you'll need a water supply of at least 2,000 litres a minute for a minimum of 3 hours for a 300 cubic metre pile of combustible material. You should use these figures to accurately scale the amount of water needed depending on the pile sizes on site.</p> <p>It is possible to reduce water volumes needed if you have a system that allows re-circulation of the water (fire water). However, you may need to filter this water and the fire and rescue service will also need to connect to your</p>

	system. Therefore, you need to provide evidence that it is appropriate and safe to re-circulate the water.
<b>Firewater containment</b>	<p>In addition to supply, you need to detail how the volume of water required to extinguish a fire will be contained. Using the figures for water supply above, you need to figure an overall estimate on the likely amount of water to be used in an incident and then show a corresponding level of containment.</p> <p>The containment facilities and pollution equipment you need will depend on the size of your site, amount of waste you store and outlined firefighting strategy. Section 17 of the FPP guidance outlines a number of secondary and tertiary containment facilities.</p> <p>You may be able to divert fire water to your local sewers, but an agreement in principle from the sewerage company need to be in place before including this measure in your fire prevention plan.</p>
<b>Contingency for during the incident</b>	<p>Your plan must have contingency measures in place for dealing with issues during and after a fire. These include diverting incoming wastes to alternative sites and notifying those who may be affected by a fire.</p> <p>You also need to set out how you will clear and decontaminate the site and the required steps before the site can become operational again.</p> <p>Possible points to include are:</p> <ul style="list-style-type: none"> <li>• Where can you divert incoming waste to?</li> <li>• What channels will you use to contact neighbouring properties?</li> <li>• Do you have access to the FPP, emergency procedures, contact details and site plans if your site office or whole site is unavailable?</li> <li>• Is the FPP understood by staff prior to an event and, therefore, able to be put into practice?</li> </ul>