



**UNITED KINGDOM
BOTTOM ASH MANAGEMENT
STANDARD**

APPENDIX

4

APPENDIX 4: United Kingdom Bottom Ash Management Standard

Standard rules SR2012 No13

The Environmental Permitting (England & Wales) Regulations 2010

Treatment of Incinerator Bottom Ash (IBA)

Part A installation – treatment capacity more than 75 tonnes per day

Introductory note

This introductory note does not form part of these standard rules

When referred to in an environmental permit, these rules will allow the operator to operate a Part A installation (falling within the scope of the Industrial Emissions Directive) for the treatment of Incinerator Bottom Ash (IBA) inside a building at a specified location.

Permitted wastes shall include only incinerator bottom ash and slag other than those mentioned in waste code 19 01 11. The total quantity of waste that can be accepted at a site under these rules must be less than 75,000 tonnes a year. These rules are for facilities that have the capacity to treat more than 75 tonnes waste in any one day. The purpose of treatment is to improve ash quality in order to generate a material that has the potential for recovery (e.g. for use as a secondary aggregate material in road construction) and mechanically separate and collect the ferrous and non-ferrous metal fractions for further recycling.

These rules do not allow any point source emission into surface waters or groundwater. However, under the emissions of substances not controlled by emission limits rule:

- liquids may be discharged into a sewer subject to a consent issued by the local water company;
- liquids may be taken off-site in a tanker for disposal or recovery;
- clean surface water from roofs, or from areas of the site that are not being used in connection with storing and treating waste, may be discharged directly to surface waters, or to groundwater by seepage through the soil via a soakaway;

These rules do not apply to installations with more than one operator.

End of Introductory Note

Conditions

Management

1.1 General management

- 1.1.1 The operator shall manage and operate the activities:
- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
 - (b) using sufficient competent persons and resources.
- 1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.
- 1.1.3 Any person having duties that are or may be affected by the matters set out in these standard rules shall have convenient access to a copy of it kept at or near the place where those duties are carried out.
- 1.1.4 The operator shall comply with the requirements of an approved competence scheme.

Energy efficiency

- 1.2.1 The operator shall:
- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
 - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) take any further appropriate measures identified by a review.

Efficient use of raw materials

- 1.3.1 The operator shall:
- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
 - (b) maintain records of raw materials and water used in the activities;
 - (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
 - (d) take any further appropriate measures identified by a review.

Avoidance, recovery and disposal of wastes produced by the activities

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
 - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
 - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

Operations

Permitted activities

- 2.0.1 The operator is only authorised to carry out the activities specified in table 2.1 below ("the activities").

| Table 2.1 activities | | | |
|-------------------------------------|---|--|--|
| Activity reference | Activity listed in Schedule 1 of the EP Regulations | Description of specified activity and WFD Annex I and II operations | Limits of specified activity and waste types |
| A1 | S5.4 A(1) (b) (iii) | <p>R5: Recycling/reclamation of other inorganic materials</p> <p>R4: Recycling/reclamation of metals and metal compounds</p> | <p>Treatment of non-hazardous incinerator bottom ash of the types listed in Table 2.3</p> <p>The ash separation and screening process shall take place inside a building.</p> <p>The purpose of treatment is to improve ash quality in order to generate a material that has the potential for recovery (e.g. for use as a secondary aggregate material in road construction) and mechanically separate and collect the ferrous and non-ferrous metal fractions for further recycling.</p> |
| Directly Associated Activity | | | |
| A2 | Storage | R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) | <p>Secure storage of wastes listed in table 2.3.</p> <p>The receipt, handling and storage of non-hazardous incinerator bottom ash of the types of waste listed in table 2.3</p> |

The site

- 2.1.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan attached the permit.
- 2.1.2 The activities shall not be carried out within:
- (a) 10 metres of any watercourse;
 - (b) 500 metres of a European Site or a SSSI;
 - (c) a groundwater source protection zone 2, or if a source protection zone has not been defined then within 250 metres of any well, spring or borehole used for the supply of water for human consumption. This must include private water supplies;
 - (d) 250 metres of the nearest sensitive receptor.

Waste acceptance

2.2.1 Waste shall only be accepted if:

- (a) it is of a type and quantity listed in table 2.3 below; and
- (b) it conforms to the description in the documentation supplied by the producer and holder.

| Table 2.3 Waste types and quantities | |
|--|--|
| Maximum Quantities The total quantity of waste accepted at the site shall be less than 75,000 tonnes a year | |
| Exclusions Wastes having any of the following characteristics shall not be accepted: <ul style="list-style-type: none">• Hazardous wastes• Wastes that are in a form which is either sludge or liquid | |
| Waste Code | Description |
| 19 | WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE |
| 19 01 | Wastes from incineration of pyrolysis of waste |
| 19 01 12 | Bottom ash and slag other than those mentioned in 19 01 11. |

Operating techniques

2.3.1 The activities shall be operated using the techniques and in the manner described in Table 2.4 below.

Table 2.4 Operating techniques

1. The storage, of wastes shall take place on an impermeable surface with sealed drainage system.
2. Where open outdoor storage is used, one or a combination of the following measures should be employed:
 - moistening the surface using water
 - providing undercover storage
3. The application of water to waste materials and surfaces should be controlled in order to minimise the quantity of leachate and surface water that requires management.
4. All ash separation and screening processes shall take place inside a building.
5. All other ash treatment processes should be carried out on an impermeable surface provided with sealed drainage, appropriate measures for the collection and containment of wash waters, leachate and other potentially contaminated waters and measures to prevent and minimise fugitive emissions.
6. The treatment process should demonstrate effective techniques for separating and recovering metals and organics (i.e. unburnt material) and reducing the leachability of the treated material, whilst preventing and reducing emissions and other risks to the environment.
7. The treatment processes employed (e.g. metal separation, ash ageing/carbonation) should be defined with clear treatment objectives (i.e. a defined end point) and reaction chemistry, as appropriate.
8. The Procedures should be in place for sampling and testing the processed IBA to assess and confirm the end of the treatment process (i.e. achievement of established treatment objectives in point 7), ensuring quality control and managing any non-conformance (e.g. reprocessing and re-testing). Relevant test parameters will depend upon end-use specifications.
9. Hydrogen gas is released from the IBA during the ageing process as aluminium reacts with calcium hydroxide and water to form aluminium hydroxide. Areas of the site where flammable or explosive atmospheres may accumulate should be assessed in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) and appropriate precautions taken to minimise the risk of fire or explosion (e.g. if the ash ageing process is carried out in a building or under cover, adequate ventilation should be provided to ensure that any gas can be dispersed safely). For further guidance on DSEAR and hazardous area classification see the HSE's DSEAR approved code of practice and guidance (L138).
10. Treated and untreated IBA and the different fractions of treated IBA material shall be handled and stored separately to avoid cross-contamination (e.g. using separate contained storage vessels, bays or areas).

Emissions and monitoring

Emissions to air, land and water

- 3.0.1 There shall be no point source emissions to air, water or land.
- 3.0.2 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination

Emissions of substances not controlled by emission limits

- 3.1.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.1.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.1.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

Odour

- 3.2.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour. .
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
 - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

Noise and vibration

- 3.3.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
 - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

Information

Records

4.0.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

4.0.2 The operator shall keep on site all records, plans and the management system required to be maintained by these standard rules, unless otherwise agreed in writing by the Environment Agency.

Reporting

4.1.1 The operator shall send all reports and notifications required by these standard rules to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.1.2 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

Notifications

4.2.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.2.2 Any information provided under standard rule 4.3.1 shall be confirmed in writing within 24 hours.

- 4.2.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.2.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (c) any change in the operator's name or address; and
 - (d) any steps taken with a view to the dissolution of the operator.
- In any other case:
- (e) the death of any of the named operators (where the operator consists of more than one named individual);
 - (f) any change in the operator's name(s) or address(es); and
 - (g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

Interpretation

- 4.3.1 In these standard rules the expressions listed below shall have the meaning given.
- 4.3.2 In these standard rules references to reports and notifications mean written reports and notifications, except when reference is being made to notification being made "immediately", in which case it may be provided by telephone.
- "accident"* means an accident that may result in pollution.
- "authorised officer"* means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(4) of that Act.
- "bottom ash"* means ash falling through the grate or transported by the grate, or for incinerators which do not have a grate, an installation specific definition of bottom ash.
- "building"* means a construction that has the objective of providing sheltering cover and minimising emissions of noise, particulate matter, odour and litter.
- "emissions of substances not controlled by emission limits"* means emissions of substances to air, water or land from the activities, either from emission points specified in these standard rules or from other localised or diffuse sources, which are not controlled by an emission limit.
- "emissions to land"* include emissions to groundwater.
- "European Site"* means Special Area of Conservation or candidate Special Area of Conservation or Special Protection Area or proposed Special Protection Area in England and Wales, within the meaning of Council Directives 79/409/EEC on the conservation of wild birds and 92/43/EEC on the conservation of natural habitats and of wild flora and fauna and the Conservation of Habitats and Species Regulations 2010. Internationally designated Ramsar sites are dealt with in the same way as European sites as a matter of government policy and for the purpose of these rules will be considered as a European Site.
- "groundwater"* means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.
- "groundwater source protection zone"* has the meaning given in the document titled "Groundwater protection: Principles

and practice" published by the Environment Agency in 2012.

"hazardous waste" has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

"impermeable surface" means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface, and should be read in conjunction with the term "sealed drainage system" (below).

"nearest sensitive receptor" means the nearest place to the permitted activities where people are likely to be for prolonged periods. This term would therefore apply to dwellings (including any associated gardens) and to many types of workplaces. We would not normally regard a place where people are likely to be present for less than 6 hours at one time as being a sensitive receptor. The term does not apply to the operators of the permitted facility, their staff when they are at work or to visitors to the facility, as their health is covered by Health and Safety at Work legislation. N.B. The term would apply to dwellings occupied by an operator's family.

"pollution" means emissions as a result of human activity which may—

- (a) be harmful to human health or the quality of the environment,
- (b) cause offence to a human sense,
- (c) result in damage to material property, or
- (d) impair or interfere with amenities and other legitimate uses of the environment.

"quarter" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

"R" means a recovery operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste.

"sealed drainage system" in relation to an impermeable surface, means a drainage system with impermeable components which does not leak and which will ensure that:

- (a) no liquid will run off the surface otherwise than via the system;
- (b) except where they may lawfully be discharged to foul sewer, all liquids entering the system are collected in a sealed sump.

"SSSI" means Site of Special Scientific Interest within the meaning of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000).

"Waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk. 'List of Wastes' means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

"year" means calendar year commencing on 1st January.

End of standard rules

SCHEDULE 5.10 – UK MANAGEMENT OF IBA FROM ENERGY FROM WASTE PLANTS

UK MANAGEMENT OF IBA FROM ENERGY FROM WASTE PLANTS

UK management and disposal of waste is governed and regulated by the Environment Agency (England and Wales), Scottish Environment Protection Agency (SEPA) and Northern Ireland Environment Agency in accordance with the Waste Management Regulations (2012) as amended and specifically for hazardous wastes the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

These agencies are responsible for the licencing (Permitting) of operators and facilities in all aspects of the production, collection and disposal of Wastes.

In England and Wales the agencies use Standard rules [SR2012 No13](#) of The Environmental Permitting (England & Wales) Regulations 2010 to licence Treatment of Incinerator Bottom Ash (IBA) – see Appendix attached.

ESA: THE VOICE OF THE INDUSTRY

The Environmental Services Association was founded as the National Association of Waste Disposal Contractors (NAWDC) in 1968 before changing it's name to ESA in late 1996. Today ESA's Members represent 85% of the sector, including all the major companies, and ESA speaks on their behalf in Britain and in the EU. ESA:

- Lobbies constructively for a policy framework which enables ESA members to operate profitably and responsibly for the benefit of the UK environment
- Prepares sector health and safety guidance
- Works to raises operational standards across the industry

THE FOLLOWING IS A SUMMARY OF ESA'S ADVICE TO ITS MEMBERS ON THE DISPOSAL IF IBA FROM ENERGY FROM WASTE PLANTS.

INCINERATOR BOTTOM ASH (IBA)

What is Incinerator Bottom Ash (IBA)?

IBA is the ash that is left over after waste is burnt in an incinerator. Municipal energy from waste plants that use incineration burn a wide range of municipal wastes and therefore the term 'ash' is slightly misleading because it is not all powdery but contains glass, brick, rubble, sand, grit, metal, stone, concrete, ceramics and fused clinker as well as combusted products such as ash and slag.

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IBA is different from Air Pollution Control (APC) residue, which is the by product of cleaning up flue gases from the combustion process and is a mixture of fly ash, and the reagents (mainly lime) used in the flue gas treatment APC residues are classified as hazardous waste and account for approximately 2 % by weight of the waste inputs.

How much IBA does a typical municipal incinerator produce?

IBA produced from a typical municipal incinerator represents about 20-30% of the input waste.

Approximately **1.3 million tonnes** of IBA are produced in England and Wales each year. In **2014**, **93%** of IBA produced was reused.

Source: Environment Agency Pollution Inventory Returns & Waste Returns

WHAT HAPPENS TO IBA?

The IBA is removed from the furnace, and large objects, such as stones, bricks and metals are screened out and are recycled/reused where possible. The remaining ash must then be characterised by the plant operator as either hazardous or non-hazardous and taken off site.

If the IBA is non-hazardous it can be processed into a secondary aggregate and used in road sub base, a bulk filler for construction and in cement bound materials.

If the IBA is hazardous it must either be disposed of in a hazardous waste landfill or go for further treatment.

REUSE AND RECYCLING OF IBA

How is non-hazardous IBA reused / recycled?

- *Use of IBA as a secondary Aggregate*

IBA can be recycled in a number of construction applications to replace primary aggregates extracted from quarries.

Recycling IBA in this way also avoids landfill disposal. IBA used in this way is regulated by the Environment Agency and must also conform to relevant publicly available civil engineering standards. During 2014, 86% of IBA produced was reused in this way.

- *Recovery of metals from IBA*

Approximately 6% or 100,000 tonnes of ferrous and non-ferrous metals are also recovered from IBA to be reprocessed into new metal products.

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SAMPLING AND TESTING OF IBA

In 2010 ESA published a 'Sampling and Testing Protocol' which [was approved by the Environment Agency](#). It sets out in detail how plants should sample and analyse IBA.

Operators of municipal energy from waste (EfW) facilities have been collecting IBA according to the protocol since January 2011.

IBA - SAMPLING AND TESTING PROTOCOL

How does the ESA Sampling and Testing Protocol Work?

The protocol requires the plant operator to take an amount of IBA, equivalent in size to a lorry load, from the IBA stream twice a month on randomly chosen days. It then provides detailed guidance as to how to mix this IBA and remove a 40 to 50 kg sample suitable for laboratory testing.

The samples are then sent off site to independent laboratories to be tested for a wide range of hazardous properties as set out in the relevant [Environment Agency Guidance WM2](#)

The testing is designed to assess whether the IBA from the plant as a whole contains high enough quantities of certain materials to be classed as hazardous. However, the quantities of such materials in the individual samples or sub samples can vary. To account for this, the IBA from the plant is classed as hazardous if more than five * of the 24 samples taken during the year exceed WM2 limits, or if there is a significant exceedance in a single sample.

IBA - IS IT HAZARDOUS OR NOT?

How does the plant operator check whether the IBA is hazardous or non-hazardous?

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OPERATORS ARE RESPONSIBLE FOR CLASSIFYING CORRECTLY THE IBA THAT THEY PRODUCE AND IBA CAN BE CLASSIFIED AS EITHER HAZARDOUS OR NON-HAZARDOUS DEPENDING ON ITS PROPERTIES.

TO ENCOURAGE A CONSISTENT APPROACH TO CLASSIFYING IBA, IN 2010 ESA DEVELOPED AN IBA [SAMPLING AND TESTING PROTOCOL](#) WHICH SETS OUT IN DETAIL HOW PLANTS SHOULD SAMPLE AND ANALYSE IBA. ALTHOUGH FOLLOWING THE PROTOCOL IS VOLUNTARY, ESA HAS DISCUSSED THE PROTOCOL EXTENSIVELY WITH THE ENVIRONMENT AGENCY TO ENSURE THAT IT REFLECTS GOOD PRACTICE.

THROUGH THESE DISCUSSIONS, THE AGENCY HAS ALSO SUPPORTED THE USE OF THE PROTOCOL.

IBA - IS IT DANGEROUS?

If IBA is classed as hazardous does that mean it is dangerous?

The most likely reason for IBA being classified as hazardous would be excessive levels of certain compounds of lead, copper and nickel. Some compounds of these metals are toxic to plants, invertebrates and fish if significant amounts get onto land or into watercourses. This is called 'ecotoxicity'.

The [Public Health England \(formerly the Health Protection Agency\)](#) has considered the impact on health of municipal incinerators [and indicates that there is little risk of public exposure to ash residues provided they are handled appropriately.](#)

[Research](#) undertaken for ESA and shared with the Environment Agency has shown that the compounds of these metals in IBA are dominated by non ecotoxic compounds.

IBA - TESTING RESULTS

What have the testing results of IBA from plants using the ESA Protocol shown?

Data collated from ESA members from IBA samples taken in accordance to the Sampling Protocol showed that for 2011 and 2012 all IBA was classified as 'non-hazardous'.

The 2011 and 2012 IBA sampling dataset can be accessed below



A copy of the 2011 Hazard Assessment report can be accessed [here](#)

Standard rules SR2012 No13

The Environmental Permitting (England & Wales) Regulations 2010

Treatment of Incinerator Bottom Ash (IBA)

Part A installation – treatment capacity more than 75 tonnes per day

Introductory note

This introductory note does not form part of these standard rules.

When referred to in an environmental permit, these rules will allow the operator to operate a Part A installation (falling within the scope of the Industrial Emissions Directive) for the treatment of Incinerator Bottom Ash (IBA) inside a building at a specified location.

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- liquids may be discharged into a sewer subject to a consent issued by the local water company;
- liquids may be taken off-site in a tanker for disposal or recovery;
- clean surface water from roofs, or from areas of the site that are not being used in connection with storing and treating waste, may be discharged directly to surface waters, or to groundwater by seepage through the soil via a soakaway;

These rules do not apply to installations with more than one operator.

End of Introductory Note

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- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in these standard rules shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.4 The operator shall comply with the requirements of an approved competence scheme.

Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
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| Directly Associated Activity | | | |
| A2 | Storage | R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) | Secure storage of wastes listed in table 2.3. The receipt, handling and storage of non-hazardous incinerator bottom ash of the types of waste listed in table 2.3 |

The site

2.1.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan attached the permit.

2.1.2 The activities shall not be carried out within:

- (a) 10 metres of any watercourse;
- (b) 500 metres of a European Site or a SSSI;
- (c) a groundwater source protection zone 2, or if a source protection zone has not been defined then within 250 metres of any well, spring or borehole used for the supply of water for human consumption. This must include private water supplies;
- (d) 250 metres of the nearest sensitive receptor.

Waste acceptance

2.2.1 Waste shall only be accepted if:

- (a) it is of a type and quantity listed in table 2.3 below; and
- (b) it conforms to the description in the documentation supplied by the producer and holder.

Table 2.3 Waste types and quantities

Maximum Quantities

The total quantity of waste accepted at the site shall be less than 75,000 tonnes a year

Exclusions

Wastes having any of the following characteristics shall not be accepted:

- Hazardous wastes
- Wastes that are in a form which is either sludge or liquid

Waste Code

Description

19: WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION/INDUSTRIAL USE

| | |
|----------|---|
| 19 01 | Wastes from incineration of pyrolysis of waste |
| 19 01 12 | Bottom ash and slag other than those mentioned in 19 01 11. |

Operating techniques

2.3.1 The activities shall be operated using the techniques and in the manner described in Table 2.4 below.

Table 2.4 Operating techniques

1. The storage, of wastes shall take place on an impermeable surface with sealed drainage system.
2. Where open outdoor storage is used, one or a combination of the following measures should be employed:
 - moistening the surface using water
 - providing undercover storage
3. The application of water to waste materials and surfaces should be controlled in order to minimise the quantity of leachate and surface water that requires management.
4. All ash separation and screening processes shall take place inside a building.
5. All other ash treatment processes should be carried out on an impermeable surface provided with sealed drainage, appropriate measures for the collection and containment of wash waters, leachate and other potentially contaminated waters and measures to prevent and minimise fugitive emissions.
6. The treatment process should demonstrate effective techniques for separating and recovering metals and organics (i.e. unburnt material) and reducing the leachability of the treated material, whilst preventing and reducing emissions and other risks to the environment.
7. The treatment processes employed (e.g. metal separation, ash ageing/carbonation) should be defined with clear treatment objectives (i.e. a defined end point) and reaction chemistry, as appropriate.

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8. The Procedures should be in place for sampling and testing the processed IBA to assess and confirm the end of the treatment process (i.e. achievement of established treatment objectives in point 7), ensuring quality control and managing any non-conformance (e.g. reprocessing and re-testing). Relevant test parameters will depend upon end-use specifications.

9. Hydrogen gas is released from the IBA during the ageing process as aluminium reacts with calcium hydroxide and water to form aluminium hydroxide. Areas of the site where flammable or explosive atmospheres may accumulate should be assessed in accordance with the Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) and appropriate precautions taken to minimise the risk of fire or explosion (e.g. if the ash ageing process is carried out in a building or under cover, adequate ventilation should be provided to ensure that any gas can be dispersed safely). For further guidance on DSEAR and hazardous area classification see the HSE's DSEAR approved code of practice and guidance (L138).

10. Treated and untreated IBA and the different fractions of treated IBA material shall be handled and stored separately to avoid cross-contamination (e.g. using separate contained storage vessels, bays or areas).

Emissions and monitoring Emissions to air, land and water

3.0.1 There shall be no point source emissions to air, water or land.

3.0.2 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination

Emissions of substances not controlled by emission limits

3.1.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.1.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.1.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

Odour

3.2.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour. .

3.2.2 The operator shall:

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- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

Noise and vibration

3.3.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.3.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

Information Records

4.0.1 All records required to be made by this permit shall:

- (a) be legible;
- (b) be made as soon as reasonably practicable;
- (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
- (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.

4.0.2 The operator shall keep on site all records, plans and the management system required to be maintained by these standard rules, unless otherwise agreed in writing by the Environment Agency.

Reporting

4.1.1 The operator shall send all reports and notifications required by these standard rules to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.1.2 Within one month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter.

Notifications

4.2.1 In the event:

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(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately -

- (i) inform the Environment Agency,
- (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
- (iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately-

- (i) inform the Environment Agency, and
- (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.2.2 Any information provided under standard rule 4.3.1 shall be confirmed in writing within 24 hours.

4.2.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.2.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (c) any change in the operator's name or address; and
- (d) any steps taken with a view to the dissolution of the operator.

In any other case:

- (e) the death of any of the named operators (where the operator consists of more than one named individual);
- (f) any change in the operator's name(s) or address(es); and
- (g) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

Interpretation

4.3.1 In these standard rules the expressions listed below shall have the meaning given.

4.3.2 In these standard rules references to reports and notifications mean written reports and notifications, except when reference is being made to notification being made "immediately", in which case it may be provided by telephone.

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“accident” means an accident that may result in pollution.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(4) of that Act.

“bottom ash” means ash falling through the grate or transported by the grate, or for incinerators which do not have a grate, an installation specific definition of bottom ash.

“building” means a construction that has the objective of providing sheltering cover and minimising emissions of noise, particulate matter, odour and litter.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from emission points specified in these standard rules or from other localised or diffuse sources, which are not controlled by an emission limit.

“emissions to land” include emissions to groundwater.

“European Site” means Special Area of Conservation or candidate Special Area of Conservation or Special Protection Area or proposed Special Protection Area in England and Wales, within the meaning of Council Directives 79/409/EEC on the conservation of wild birds and 92/43/EEC on the conservation of natural habitats and of wild flora and fauna and the Conservation of Habitats and Species Regulations 2010. Internationally designated Ramsar sites are dealt with in the same way as European sites as a matter of government policy and for the purpose of these rules will be considered as a European Site.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“groundwater source protection zone” has the meaning given in the document titled “Groundwater protection: Principles and practice” published by the Environment Agency in 2012.

“hazardous waste” has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended).

“impermeable surface” means a surface or pavement constructed and maintained to a standard sufficient to prevent the transmission of liquids beyond the pavement surface, and should be read in conjunction with the term “sealed drainage system” (below).

“nearest sensitive receptor” means the nearest place to the permitted activities where people are likely to be for prolonged periods. This term would therefore apply to dwellings (including any associated gardens) and to many types of workplaces. We would not normally regard a place where people are likely to be present for less than 6 hours at one time as being a sensitive receptor. The term does not apply to the operators of the permitted facility, their staff when they are at work or to visitors to the facility, as their health is covered by Health and Safety at Work legislation. N.B. The term would apply to dwellings occupied by an operator’s family.

“pollution” means emissions as a result of human activity which may—

- (a) be harmful to human health or the quality of the environment,
- (b) cause offence to a human sense,
- (c) result in damage to material property, or
- (d) impair or interfere with amenities and other legitimate uses of the environment.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“R” means a recovery operation provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste.

“sealed drainage system” in relation to an impermeable surface, means a drainage system with impermeable components which does not leak and which will ensure that:

- (a) no liquid will run off the surface otherwise than via the system;
- (b) except where they may lawfully be discharged to foul sewer, all liquids entering the system are collected in a sealed sump.

“SSSI” means Site of Special Scientific Interest within the meaning of the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000).

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk. ‘List of Wastes’ means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

“year” means calendar year commencing on 1st January.

End of standard rules