

## Process Guidance Note 3/17(12)

### Statutory guidance for the china and ball clay processes including the spray drying of ceramics

September 2012

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Llywodraeth Cymru  
Welsh Government



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Defra would like to acknowledge the work of the Environment Agency's Local Authority Unit in the drafting of this guidance note.



**Process Guidance Note 3/17(12)**

**Statutory guidance for the china and ball clay processes including the spray drying of ceramics**

## Revision of the guidance

The electronic version of this publication is updated from time to time with new or amended guidance. **Table 0.1** is an index to the latest changes (minor amendments are generally not listed).

Table 0.1 - Revision of the guidance		

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# 1. Introduction

## Legal basis

- 1.1 This note applies to the whole of the UK. It is issued by the Secretary of State, the Welsh Assembly Government, the Scottish Government and the Department of the Environment in Northern Ireland, (DoE NI), to give guidance on the conditions appropriate for the control of emissions into the air from China and Ball Clay Processes including the Spray Drying of Ceramics. It is published only in electronic form and can be found on the Defra website. It supersedes PG3/17(04) & NIPG3/17.
- 1.2 This guidance document is compliant with the [Code of Practice on Guidance on Regulation](#) page 6 of which contains the "golden rules of good guidance". If you feel this guidance breaches the code or you notice any inaccuracies within the guidance, please [contact us](#).
- 1.3 This is one of a series of statutory notes<sup>1</sup> giving guidance on the Best Available Techniques (BAT)<sup>2</sup>. The notes are all aimed at providing a strong framework for consistent and transparent regulation of installations regulated under the statutory Local Air Pollution Prevention and Control (LAPPC) regime in [England and Wales](#), [Scotland](#) and [Northern Ireland](#). The note will be treated as one of the material considerations when determining any appeals against a decision made under this legislation.
- 1.4 In general terms, what is BAT for one installation in a sector is likely to be BAT for a comparable installation. Consistency is important where circumstances are the same. However, in each case it is, in practice, for regulators (subject to appeal) to decide what is BAT for each individual installation, taking into account variable factors such as the configuration, size and other individual characteristics of the installation, as well as the locality (e.g. proximity to particularly sensitive receptors).
- 1.5 The note also, where appropriate, gives details of any mandatory requirements affecting air emissions which are in force at the time of publication, such as those contained in Regulations or in Directions from the Government. In the case of this note, at the time of publication there were no such requirements.

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<sup>1</sup> this and other notes in the series are issued as statutory guidance in England and Wales under regulation 64(2) of the Environmental Permitting Regulations. The notes are also issued as guidance in Scotland and statutory guidance in Northern Ireland

<sup>2</sup> further guidance on the meaning of BAT can be found for [England and Wales](#), [Scotland](#), and [Northern Ireland](#).



## **Simplified or standard permits**

- 1.6 The activities covered by this note will have essentially the same characteristics and it is expected that the application form and model permit in **Appendices 1 and 2** will normally be used in order to simplify for business the process of applying for a permit and to simplify for regulators the process of issuing a permit. (See also the relevant LAPPC charging scheme for reduced application and subsistence charges for simplified permits).

If there are good reasons to consider diverging from normal use of the model permit, the starting point for drafting any additional conditions should be the arrowed bullets in the main body of this note.

Sites with more than one Pt B activity (Part C in Northern Ireland) which in accordance with the relevant charging scheme are to be treated as a single activity will require a full permit not a simplified permit, therefore the whole installation comprising both activities should be subject to a full permit.

## **Who is the guidance for?**

- 1.7 This guidance is for:

### **Regulators**

- local authorities in England and Wales, who must have regard to the guidance when determining applications for permits and reviewing extant permits;
- the Scottish Environment Protection Agency (SEPA) in Scotland, and district councils or the Northern Ireland Environment Agency, (NIEA), in Northern Ireland.

**Operators** who are best advised also to have regard to it when making applications and in the subsequent operation of their installation.

**Members of the public** who may be interested to know what the Government considers, in accordance with the legislation, amounts to appropriate conditions for controlling air emissions for the generality of installations in this particular industry sector.

## **Updating the guidance**

- 1.8 The guidance is based on the state of knowledge and understanding, at the time of writing, of what constitutes BAT for this sector. The note may be amended from time to time to keep up with developments in BAT, including improvements in techniques, changes to the economic parameters, and new understanding of environmental impacts and risks. The updated version will replace the previous version on the [Defra](#) website and will include an index to the amendments.
- 1.9 Reasonable steps will be taken to keep the guidance up-to-date to ensure that those who need to know about changes to the guidance are informed of any published revisions. However, because there can be rapid changes to matters referred to in the guidance – for example to legislation – it should not be assumed that the most recent version of this note reflects the very latest legal requirements; these requirements apply.

## **Consultation**

- 1.10 This note has been produced in consultation with relevant trade bodies, representatives of regulators including members of the Industrial Pollution Liaison Committee, and other potentially-interested organisations.

## **Policy and procedures**

- 1.11 General guidance explaining LAPPC and setting out the policy and procedures is contained in separate documents for [England and Wales](#), [Scotland](#) and [Northern Ireland](#).

## 2. Timetable for compliance and reviews

### Existing processes or activities

- 2.1 This note contains all the provisions from previous editions which have not been amended or removed. For installations in operation at the date this note is published, the regulator should have already issued or varied the permit having regard to the previous editions. If they have not done so, this should now be done.
- 2.2 The new provisions of this note and the dates by which compliance with these provisions is expected are listed in **Table 2.1**, together with the paragraph number where the provision is to be found. Compliance with the new provisions should normally be achieved by the dates shown. Permits should be varied as necessary, having regard to the changes and the timetable.

Table 2.1 - Compliance timetable		
Guidance	Relevant paragraph/row in this note	Compliance date
Pre 1995 Pulveriser Dryers new emission limit of 50mg/m <sup>3</sup>	Table 4 Row 1	31 Dec 2011
For a full list of the main changes, please see <b>Table 6.1</b> in Section 6.		

- 2.3 Replacement plant should normally be designed to meet the appropriate standards specified for new installations/activities.
- 2.4 Where provisions in the preceding guidance note have been deleted or relaxed, permits should be varied as necessary as soon as reasonably practicable. It is expected that local authorities will aim to vary existing permits so as to convert them into the model permit format in **Appendix 2** within 12 months of the publication of this note.
- 2.5 For new activities, the permit should have regard to the full standards of this guidance from the first day of operation.

- 2.6 For substantially changed activities, the permit should normally have regard to the full standards of this guidance with respect to the parts of the activity that have been substantially changed and any part of the activity affected by the change, from the first day of operation.

### **Permit Reviews**

- 2.7 Under LAPPC, the legislation requires permits to be reviewed periodically but does not specify a frequency. It is considered for this sector that a frequency of once every eight years ought normally to be sufficient for the purposes of appropriate Regulations<sup>3</sup>. Further guidance on permit reviews is contained in the appropriate Guidance Manual for [England and Wales](#), [Scotland](#) and [Northern Ireland](#). Regulators should use any opportunities to determine the variations to permits necessitated by paragraph 2.2 above in conjunction with these reviews.
- 2.8 Conditions should also be reviewed where complaint is attributable to the operation of the process and is, in the opinion of the regulator, justified.

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<sup>3</sup> For details see [England and Wales General Guidance Manual](#) chapter 26, [Scotland, Practical guide](#) section 10, Northern Ireland [Part B Guidance](#) page 9, [Northern Ireland](#) Part C Guidance chapter 17.

### 3. Activity description

#### Regulations

- 3.1 This note applies to LAPPC installations for China and Ball clay processes including the spray drying of ceramics. The activities for regulation are listed in **Table 3.1**.

<b>Table 3.1 - Regulations listing activities</b>				
<b>LAPPC</b>	<b>Activity</b>	<b>England and Wales</b>	<b>Scotland</b>	<b>Northern Ireland</b>
		<b>EPR Schedule 1 reference</b>	<b>PPC Schedule 1 reference</b>	<b>PPC Schedule 1 reference</b>
Part B		<a href="#">Section 3.5 Part B</a>	<a href="#">Section 3.5, Part B</a>	<a href="#">Section 3.5 Part B</a>
Part C		n/a	n/a	n/a

The links are to the original version of the regulations. A consolidated version is not available on [www.legislation.gov.uk](http://www.legislation.gov.uk)

- 3.2 This note refers to the drying and calcining of China clay and Ball clay. It also refers to spray drying. This is the manufacture of ceramic granulates from ceramic material slurry (slip) which is forced under pressure into a stream of hot air and rapidly dried.

#### Outline of process descriptions

##### Drying and calcining of China clay

- 3.3 China clay is a fine, white, inert powder, the main constituent of which is kaolinite. It also contains small amounts of quartz and mica. It is found in the granite moors of South West England and is mined in Devon and Cornwall. China clay is opencast mined. Once it is exposed the clay can either be dry mined by mechanical excavation or washed out by a high pressure water jet known as a monitor which is fired at the pit face liberating a slurry of China clay, sand and mica. Dry mined materials are typically washed out by being fed into a make down site where a fixed monitor is in situ. The sand and mica are separated out then the remaining China clay slurry is refined and dried in stages to remove organic matter and other contaminants. A variety of refining processes engineer the shape, size and colour of the product to meet the customer's requirements. It is used predominantly by the paper industry as filler and as a coating. It is also used in the manufacture of ceramics and as inert filler in a number of other industrial sectors such as plastics, paint and pharmaceutical.

3.4 The different types of product are:

**As dried** – most clay is sold in the form which it emerges from dryers or tube presses. This consists of clay lumps which may be loaded directly into road, rail and sea transport or packed into large bags before loading. The moisture content of this product is about 10% if dried and about 15% if pressed.

**Milled clay** – this is a dry powder form. The lump clay is disintegrated in a special milling machine, which also dries the clay to a moisture content of 1%. The powder is packed into dust- tight packing media.

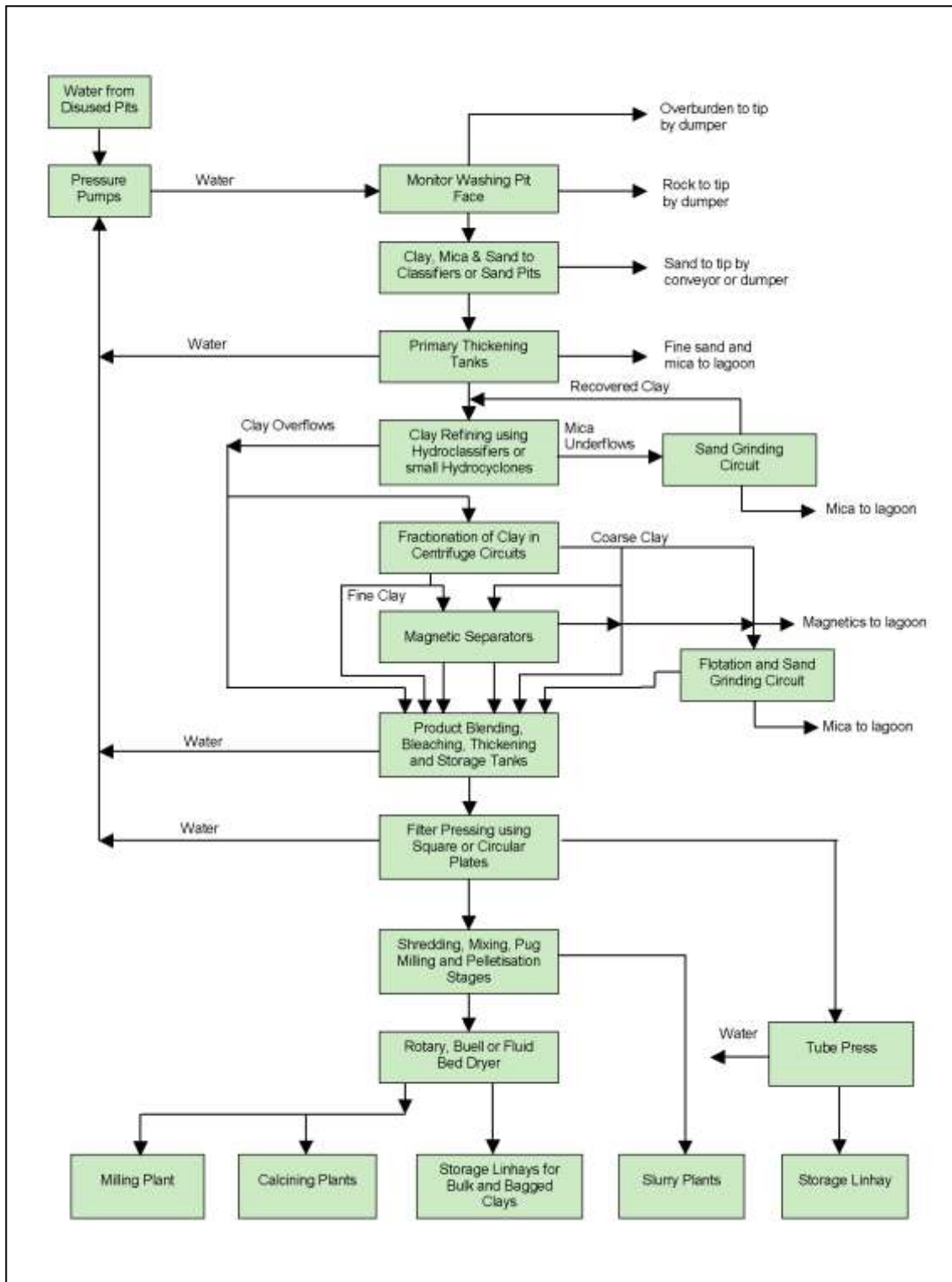
**Slurried clay** – a thick suspension of clay and water is pumped into road and rail wagons or specially adapted ships for use by the paper industry.

**Calcined clay for speciality products** - if China clay is heated to temperatures above 450°C its crystalline structure alters and there are improvements in properties such as electrical insulation value and whiteness compared to the original kaolin. The new properties make the product of particular use in the plastics, rubber, paint and concrete industries. The heating process is known as calcination and some clay is treated to make a range of products by calcining at different temperatures.

### **Ball clay**

- 3.5 English ball clays are very fine grained plastic materials composed mainly of disordered kaolinite with varying amounts of micaceous material, quartz, and in some cases, traces of carbonaceous material. They are found only in the South West of England, namely in Dorset, North Devon and South Devon. Each area provides ball clay with a different chemical composition and therefore slightly different properties. The plasticity of ball clay is one of its key properties. Ball clays are selectively mined. The individual clays are then blended. They are mixed by shredding, in accordance with relevant recipes, to ensure homogeneity.
- 3.6 They can be sold in this shredded form or further processed. Further processing options include refining, drying, granulating, milling and classifying. A common form of processing is milling. The clays are simultaneously dried and then disintegrated into powder. The powdered clay is then bagged. Ball clays are also commonly refined into a noodle form for sale. They can also be sold as a slurry. Slurried ball clays tend to go on to be spray dried before use.
- 3.7 Ball clays are used for almost every ceramic application including sanitaryware, tableware, tiles, electric porcelain and refractories.

**Figure 3.1: Simplified flow diagram of China clay production**

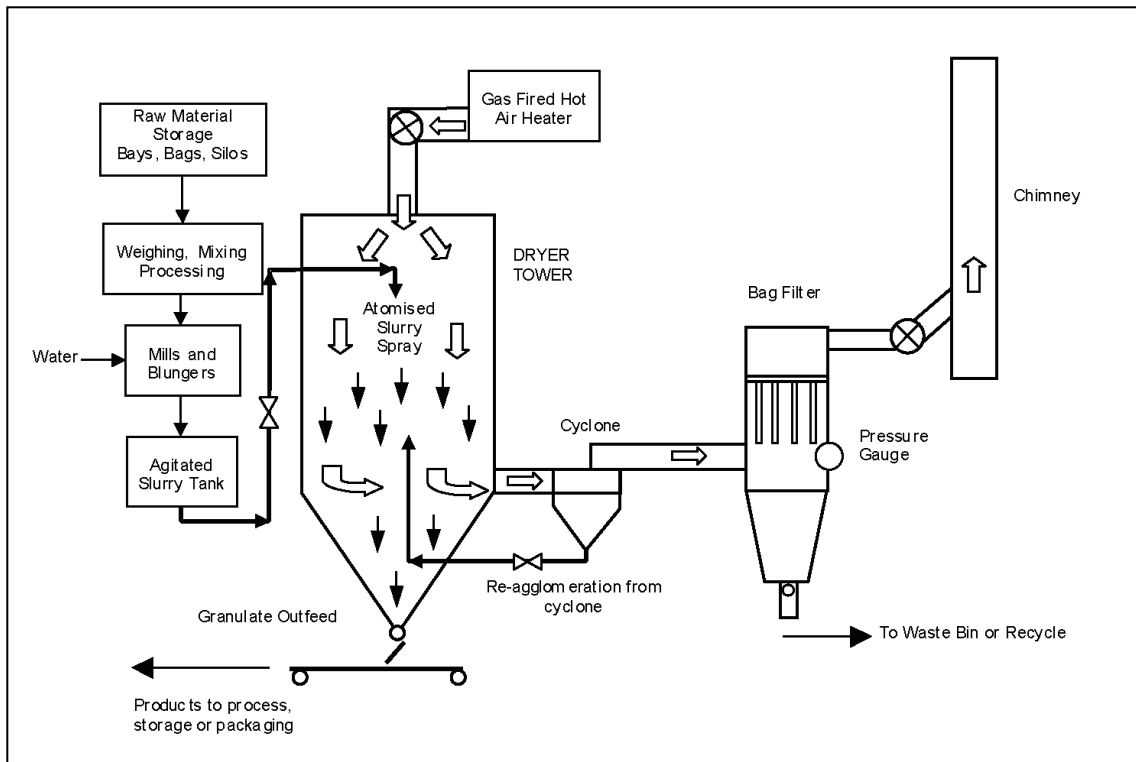


## **Spray drying of ceramics**

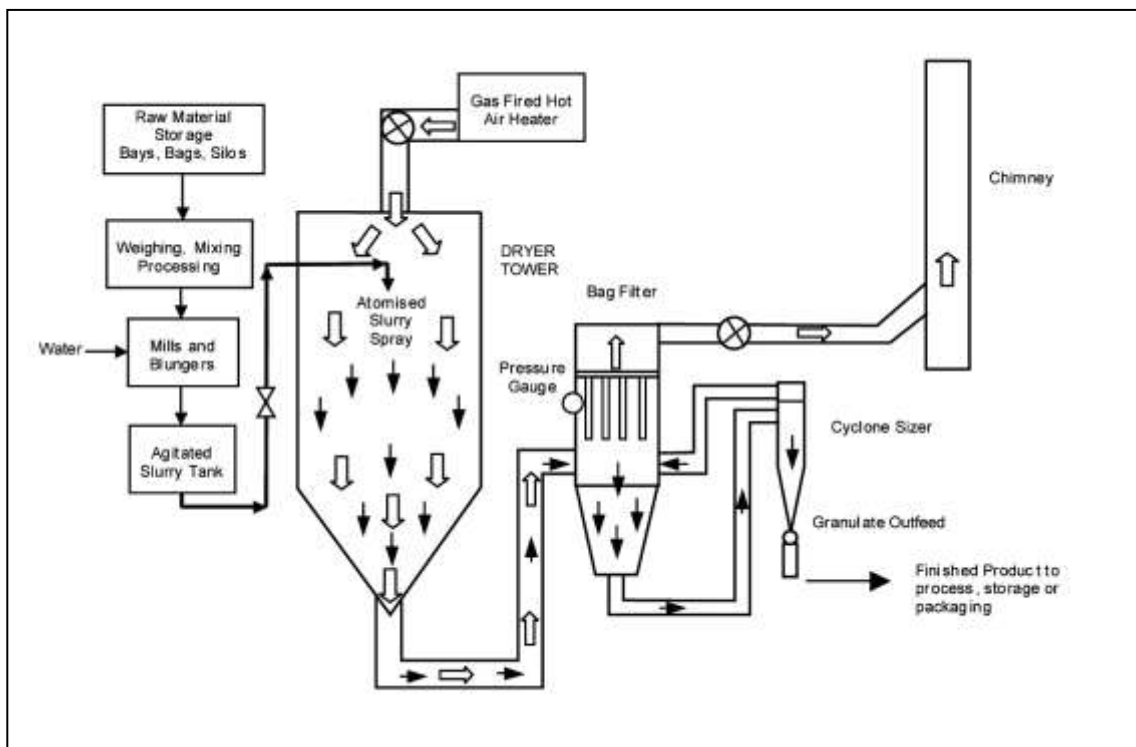
- 3.8 Spray drying is a process used for the manufacture of ceramic granulates from a ceramic raw material slurry (slip).
- 3.9 Liquid ceramic bodies comprising Ball and China clays, calcined bone and other mineral additives are delivered to site by road tanker or prepared on site from raw materials delivered in bags by road transport and blended in the slip house. The liquid bodies are held as a ceramic slurry and agitated in storage arks prior to spray drying.
- 3.10 A spray dryer is simply a machine for drying an atomised mist by direct contact with hot gases (A hot air stream provided by gas combustion).
- 3.11 A spray dryer consists of a tall, enclosed cylindrical chamber with a means of atomising the slurry and a source of hot air, usually from a gas burner. The ceramic slurry is atomised, either by spinning disc or by pressurised lances, into the hot air stream (500 °C max.) within the chamber. The atomised droplets of slurry are rapidly dried as they fall through the chamber to form a ceramic granulate of controlled particle size and moisture content. The granulate is continuously conveyed from the base of the chamber for storage or use.
- 3.12 The waste gases exhausted from the spray dryer chamber contain fine particles of the material being dried. Arrestment systems vary but the particles are commonly separated in two stages: first the coarser material is removed by passing the gases through cyclones and then the remaining material is removed using a wet or dry scrubbing system. The waste gases, largely products of combustion and evaporated water vapour, are then emitted to atmosphere.



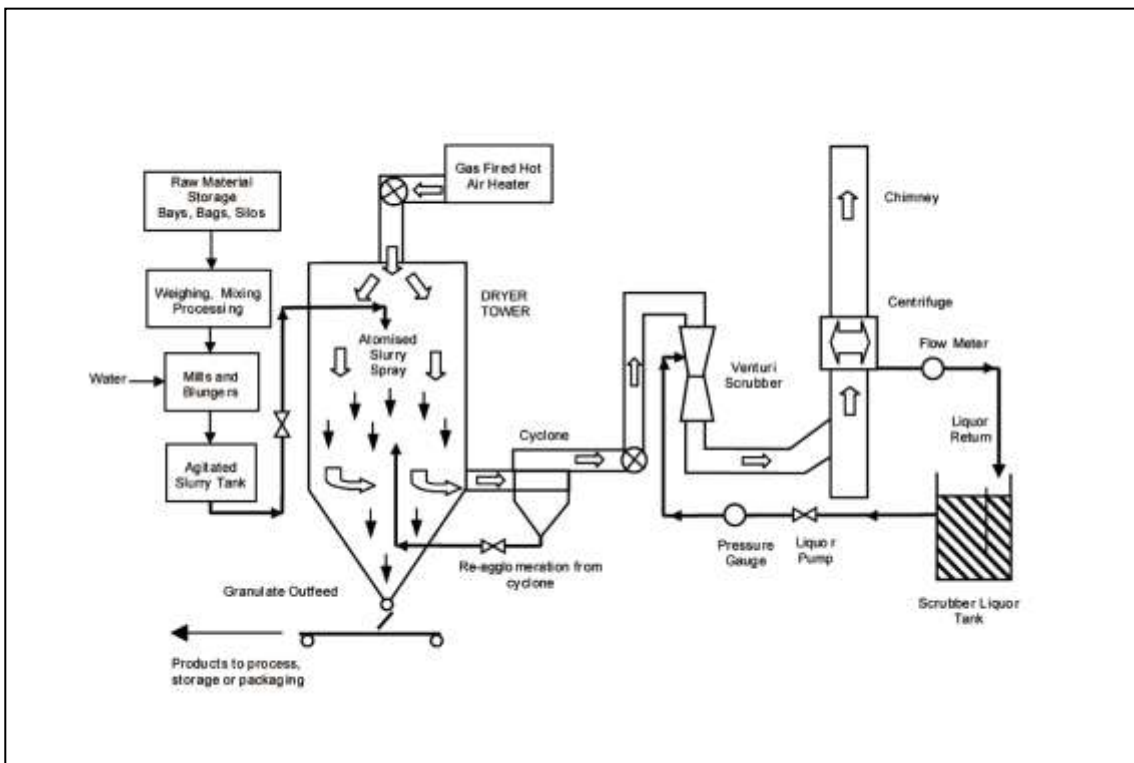
**Figure 3.2: Typical arrangement of spray dryer with dry arrestment**



**Figure 3.3: Typical arrangement of spray dryer with dry arrestment / collector**



**Figure 3.4: Typical arrangement of spray dryer with wet arrestment**



### **Bulk powdered material transfer**

- 3.13 Powdered materials are delivered by road or rail in bulk tankers, or by water in barges or ships. An internal transfer of material from processing to storage and from storage onto road tankers also occurs. The powder materials are transferred through a closed system of heavy duty hoses to storage silos, using compressed air as a carrier medium. Silos are vented to allow air to escape through filters, so controlling dust emission.
- 3.14 The delivery of powder from road tankers relies on a compressor (blower) mounted on the tanker lorry providing a supply of air which is used in three ways:
- To pressurise the tank vessel with air so that inside the vessel there is significant pressure which helps feed the powder out of the tankers. The tank is pressurised at the start of the blow, and can be repressurised as necessary during the course of discharging.
  - A separate feed from the air supply passes to the distributor system which fluidises the powder around the distributor plate.
  - A third feed of air receives fluidised powder and flows from the tanker, along the connecting pipework and into the silo. The powder fed from the distributor system is thus transferred to the silo in the air stream.

- 3.15 The flow of air/material through the pipe depends on the pressure in the blowing line and hence the pressure in the tankers. The pressure required to successfully convey the powders is determined by the resistance to flow and gravity that is to be overcome which varies depending upon the height to which the powders are to be pumped (i.e. the height of the silo) and the pipe length and diameter.
- 3.16 The tanker discharge is controlled by the tanker driver. The driver controls the flow of air to the tank, the distributor and the silo to maintain a constant flow of material into the silo without exceeding the flow capacity of the filter system or exerting excessive pressure in the silo (which is not a pressure vessel).
- 3.17 All new silos should be installed with automatic protection systems to control the delivery of material from the tanker to the silo such that it is not possible to over-fill or over-pressurise the silo.
- 3.18 If the filter system on the silo is not capable of handling the large flow of air that is generated during the delivery process, this may cause an increase in pressure within the silo. Filter manufacturers supply information on the pressure drop across filters and the filtration rate. It is important that the filter size is calculated to match the flow rates of air through the silo. The filter systems must be cleaned to prevent blockages and accumulation of powder in the filter system.

## 4. Emission limits, monitoring and other provisions

- 4.1 Emissions of the substances listed **Table 4.1** should be controlled.
- 4.2 The emission limit values and provisions described in this section are achievable using the best available techniques described in **Section 5**. Monitoring of emissions should be carried out according to the method specified in this section or by an equivalent method agreed by the regulator. Where reference is made to a British, European, or International standard (BS, CEN or ISO) in this section, the standards referred to are correct at the date of publication. (Users of this note should bear in mind that the standards are periodically amended, updated or replaced.) The latest information regarding the monitoring standards applicable can be found at the [Source Testing Association](#) website. Further information on monitoring can be found in Environment Agency publications [\(M1\)](#) and [\(M2\)](#).
- 4.3 All activities should comply with the emission limits and provisions with regard to releases in **Table 4.1**.

The reference conditions for limits in **Section 4** are: 273.1K, 101.3kPa, without correction for water vapour content, unless stated otherwise.

**Table 4.1 - Emission limits, monitoring and other provisions**

Row	Substance	Source	Emission limits/provisions	Type of monitoring	Monitoring frequency
1	Particulate matter	Dryer, calciner	50mg/m <sup>3</sup>	Manual extractive testing	6 monthly
		Pulveriser dryer	50mg/m <sup>3</sup>	Manual extractive testing	6 monthly
		All authorised emission points	No visible emission	Visual	Daily
		Silo inlet and outlets	No visible emission Designed to emit less than 10mg/m <sup>3</sup> (new silos since July 1 <sup>st</sup> 2004)	Visual	At delivery
		Arrestment equipment* with exhaust flow >300m <sup>3</sup> /min	50mg/m <sup>3</sup>	Continuously recorded indicative monitor	Continuous
		Arrestment equipment* with exhaust flow >100m <sup>3</sup> /min	No visible emission Arrestment equipment should be designed to achieve 50mg/m <sup>3</sup>	Visual Continuously recorded indicative monitor	Continuous
		Arrestment equipment* with exhaust flow <100m <sup>3</sup> /min	No visible emission	Visual	Continuous
* Where emission is to external environment					

2	Chloride (expressed as hydrogen chloride)	Emissions which have been scrubbed by use of chlorine compounds	10mg/m <sup>3</sup>	Manual extractive testing	6 monthly
3	Fluoride (expressed as hydrogen fluoride)	Calciner	5mg/m <sup>3</sup>	Manual extractive testing	6 monthly
4	Sulphur dioxide	All activities using heavy fuel oil or other residual type/comparable <a href="#">Quality Protocol Processed Fuel Oil</a>	1% wt/wt sulphur in fuel	Sulphur content of fuel is regulated under the Sulphur Content of Liquid Fuels Regulations	
		All activities using gas oil/comparable <a href="#">Quality Protocol Processed Fuel Oil</a>	0.1% wt/wt sulphur in fuel		
* Where discharge is to external environment (other than serving dryers, calciners or silos)					
Activities burning waste oil not covered by the <a href="#">quality protocol processed fuel oil</a> must comply with the Waste Incineration Directive (WID).					

## Monitoring, investigating and reporting

- 4.4 The operator should monitor emissions, make tests and inspections of the activity. The need for and scope of testing, (including the frequency and time of sampling), will depend on local circumstances.
- The operator should keep records of inspections, tests and monitoring, including all non-continuous monitoring, inspections and visual assessments. Records should be:
    - kept on site;
    - kept by the operator for at least two years; **and**
    - made available for the regulator to examine.
  - If any records are kept off-site they should be made available for inspection within one working week of any request by the regulator.

## Information required by the regulator

- 4.5 The regulator needs to be informed of monitoring to be carried out and the results. The results should include process conditions at the time of monitoring.
- The operator should notify the regulator at least 7 days before any periodic monitoring exercise to determine compliance with emission limit values. The operator should state the provisional time and date of monitoring, pollutants to be tested and the methods to be used.
  - The results of non-continuous emission testing should be forwarded to the regulator within 8 weeks of completion of the sampling.
  - Adverse results from **any** monitoring activity (both continuous and non-continuous) should be investigated by the operator as soon as the monitoring data has been obtained. The operator should:
    - identify the cause and take corrective action;
    - clearly record as much detail as possible regarding the cause and extent of the problem, and the remedial action taken;
    - re-test to demonstrate compliance as soon as possible; **and** inform the regulator of the steps taken and the re-test results.

## Visible Emissions

- 4.6 The aim should be to prevent any visible airborne emission from any part of the process. This aim includes all sites regardless of location. Monitoring to identify the origin of a visible emission should be undertaken and a variety of indicative techniques are available.
- Where ambient monitoring is carried out it may also be appropriate for the regulator to specify recording of wind direction and strength.
  - Where combustion units are in use for dryers then the combustion process should be controlled and equipment maintained as appropriate.
- 4.7 Emissions from combustion processes should in normal operation be free from visible smoke. During start up and shut down the emissions should not exceed the equivalent of Ringelmann Shade 1 as described in British Standard BS 2742: 2009
- All other releases to air, other than condensed water vapour, should be free from persistent visible emissions.
  - All emissions to air should be free from droplets.

Where there are problems that, in the opinion of the regulator, may be attributable to the installation, such as local complaints of visual emissions or where dust from the installation is being detected beyond the site boundary, the operator should investigate in order to find out which part of their operation(s) is the cause.

- If this inspection does not lead to correction of the problem then the operator should inform the regulator in order to determine whether ambient air monitoring is necessary. Ambient monitoring may either be by a British Standard method or by a method agreed with the regulator.

Whilst problems are ongoing, a visual check should also be made once per day when an installation is being operated. The time, location and result of these checks, along with weather conditions such as indicative wind direction and strength, should be recorded. Once the source of the emission is known, corrective action should be taken without delay.



## Emissions of Odour

- 4.8 The overall aim should be that all emissions are free from offensive odour outside the site boundary, as perceived by the regulator. However, the location of the installation will influence the assessment of the potential for odour impact as local meteorological conditions may lead to poor dispersion conditions. Where the site has a low odour impact due to its remoteness from sensitive receptors, the escape of offensive odour beyond the installation would be unlikely to cause harm.

Where there are problems that, in the opinion of the regulator, may be attributable to the installation, such as local complaints of odour or where odour from the installation is being detected beyond the site boundary, the operator should investigate in order to find out which part of their operation(s) is the cause.

Whilst problems are ongoing, a boundary check should also be made at least once per day/shift, by the operator, when an installation is being operated. The time, location and result of these checks, along with weather conditions such as indicative wind direction and strength, should be recorded. Once the source of the emission is known, corrective action should be taken without delay and where appropriate the regulator may want to vary the permit in order to add a condition requiring the particular measure(s) to be undertaken.

## Abnormal Events

- 4.9 The operator should respond to problems which may have an adverse effect on emissions to air.
- In the case of abnormal emissions, malfunction or breakdown leading to abnormal emissions the operator should:
    - investigate and undertake remedial action immediately;
    - adjust the process or activity to minimise those emissions; **and**
    - promptly record the events and actions taken.
  - The regulator should be informed without delay, whether or not there is related monitoring showing an adverse result:
    - if there is an emission that is likely to have an effect on the local community; **or**
    - in the event of the failure of key arrestment plant, for example, bag filtration plant or scrubber units.
  - The operator should provide a list of key arrestment plant and should have a written procedure for dealing with its failure, in order to minimise any adverse effects

## **Start up and shutdown**

- 4.10 Greater emissions may occur during start-up and shut-down of a process. These emissions can be reduced, by minimising, where possible, the number of start-ups and shut-downs and having adequate procedures in place for start-up, shut-down and emergency shut-downs.
- All appropriate precautions must be taken to minimise emissions during start-up and shutdown.

## **Continuous Monitoring**

- 4.11 Continuous monitoring can be either “quantitative” or “indicative”. With quantitative monitoring the discharge of the pollutant(s) of concern is measured and recorded numerically. For pollution control this measurement is normally expressed in milligrams per cubic metre of air, (mg/m<sup>3</sup>). Where discharge of the pollutant concerned is controlled by measuring an alternative parameter, (the “surrogate” measurement), this surrogate is also expressed numerically.
- 4.12 Continuous indicative monitoring is where a permanent device is fitted, for example, to detect leaks in a bag filter, but the output, whether expressed numerically or not, does not show the true value of the discharge. When connected to a continuous recorder it will show that emissions are gradually (or rapidly) increasing, and therefore maintenance is required. Alternatively it can trigger an alarm when there is a sudden increase in emissions, such as when arrestment plant has failed.
- 4.13 Where continuous indicative monitoring has been specified, the information provided should be used as a management tool. Where used, the monitor should be set up to provide a baseline output when the plant is known to be operating under the best possible conditions and emissions are complying with the requirements of the permit. Where used to trigger alarms, the instrument manufacturer should be able to set an output level which corresponds to around 75% of the emission limit. Thus the alarms are activated in response to this significant increase in pollutant loading above the baseline, so that warning of the changed state is given before an unacceptable emission occurs. The regulator may wish to agree the alarm trigger level.

- 4.14 Where continuous monitoring is required, it should be carried out as follows:
- All continuous monitoring readings should be on display to appropriately trained operating staff.
  - Instruments should be fitted with audible and visual alarms, situated appropriately to warn the operator of arrestment plant failure or malfunction.
  - The activation of alarms should be automatically recorded.
  - All continuous monitors should be operated, maintained and calibrated (or referenced, in the case of indicative monitors) in accordance with the manufacturers' instructions, which should be made available for inspection by the regulator. The relevant maintenance and calibration (or referencing, in the case of indicative monitors) should be recorded.
  - Emission concentrations may be reported as zero when the plant is off and there is no flow from the stack. If required a competent person should confirm that zero is more appropriate than the measured stack concentration if there is no flow.
  - Any CEM (continuous emission monitor) used should provide reliable data >95% of the operating time, (i.e. availability >95%). A manual or automatic procedure should be in place to detect instrument malfunction and to monitor instrument availability

### **Calibration and compliance monitoring.**

- 4.15 Compliance monitoring can be carried out either by use of a CEM, or by a specific extractive test carried out at a frequency agreed with the regulator.
- 4.16 Where a CEM is used for compliance purposes it must be periodically checked, (calibrated), to ensure the readings being reported are correct. This calibration is normally done by carrying out a parallel stand-alone extractive test and comparing the results with those provided by the CEM.
- 4.17 For extractive testing the sampling should meet the following requirements:
- For batch processes, where the production operation is complete within, say, 2 hours, then the extractive sampling should take place over a complete cycle of the activity;
- 4.18 Should the activity either be continuous, or have a batch cycle that is not compatible with the time available for sampling, then the data required should be obtained over a minimum period of 2 hours in total.

- For demonstration of compliance where a CEM is used no daily mean of all 15-minute mean emission concentrations should exceed the specified emission concentration limits during normal operation (excluding start-up and shut-down); **and**
- no 15-minute mean emission concentration should exceed twice the specified emission concentration limits during normal operation (excluding start-up and shut-down).
- For extractive testing, no result of monitoring should exceed the emission limit concentrations specified.

4.19 Exhaust flow rates should be consistent with efficient capture of emissions, good operating practice and meeting the requirements of the legislation relating to the workplace environment.

- The introduction of dilution air to achieve emission concentration limits should not be permitted.

Dilution air may be added for waste gas cooling or improved dispersion where this is shown to be necessary because of the operational requirements of the plant, but this additional air should be discounted when determining the mass concentration of the pollutant in the waste gases.

### **Varying of monitoring frequency**

- 4.20 Where non-continuous quantitative monitoring is required, the frequency may be varied. Where there is consistent compliance with emission limits, regulators may consider reducing the frequency. However, any significant process changes that might have affected the monitored emission should be taken into account in making the decision.
- 4.21 When determining “consistent compliance” the following are cases which might not qualify for a reduction in monitoring:
- a. variability of results: cases where monitoring results vary widely and include results in the range 15 - 45mg/m<sup>3</sup> (when the emission limit is 50mg/m<sup>3</sup>)
  - b. the margin between the results and the emission limit: cases where results over a period are 45mg/m<sup>3</sup> or more (when the emission limit is 50mg/m<sup>3</sup>).

Consistent compliance should be demonstrated using the results from at least;

- three or more consecutive annual monitoring campaigns; **or**
- two or more consecutive annual monitoring campaigns supported by continuous monitoring.

Where a new or substantially changed process is being commissioned, or where emission levels are near to or approach the emission concentration limits, regulators should consider increasing the frequency of testing.

- 4.22 Where continuous quantitative or indicative monitoring is required it is not appropriate that reduced monitoring be applied as the monitoring is required to demonstrate either compliance with emission limits on an ongoing basis or to demonstrate correct functioning of abatement equipment.

### **Monitoring of unabated releases**

- 4.23 Where emission limit values are consistently met without the use of abatement equipment, the monitoring requirement for those pollutants should be dispensed with subject to the “Varying of monitoring frequency” paragraphs above.
- 4.24 Where monitoring is not in accordance with the main procedural requirements of the relevant standard, deviations should be reported.

## **Representative sampling**

- 4.25 Whether sampling on a continuous or non-continuous basis, care is needed in the design and location of sampling systems, in order to obtain representative samples for all release points.
- Sampling points on new plant should be designed to comply with the British or equivalent standards, (see paragraph 4.2).
  - The operator should ensure that relevant stacks or ducts are fitted with facilities for sampling which allow compliance with the sampling standards.

## **Emissions from arrestment plant**

- 4.26 There are specific design requirements that apply to arrestment plant, and monitoring and recording requirements for emissions from arrestment plant handling dry dust, which discharges externally, other than that serving silos. Purchasers of new or replacement plant should specify the design criteria on ordering, and ensure that the plant is capable of meeting the limit. The design criteria should be made available to the regulator for inspection. The plant should be operated and maintained in such a way that it works within the design parameters at all times.
- Arrestment plant with an exhaust flow of over 300m<sup>3</sup>/ min should be continuously indicatively monitored and recorded for particulate matter.
  - Arrestment plant with an exhaust flow of over 100 m<sup>3</sup>/min but less than 300m<sup>3</sup>/ min, should be continuously indicatively monitored for particulate matter
  - Arrestment plant with an exhaust flow of 100m<sup>3</sup>/ min or less should be designed and maintained to prevent visible emission of dust. Checks should be made and recorded on a daily basis to ensure the correct functioning of the plant.
  - Continuous monitoring should not be required for unabated emissions which are below 50mg/m<sup>3</sup>
  - Where arrestment plant is designed to meet a specific emission limit, the specification should be available for inspection by the regulator. The plant thereafter should be maintained to meet this specification.

## Emissions from silos

- 4.27 During silo filling it is most likely that any emissions would be released during the first and last five minutes of the delivery. The first few minutes is when emissions due to leaks or split hoses would first be noticed. The last few minutes is when excess pressure from the tanker/ blowing system may cause an emission through the pressure relief valve if the delivery is not controlled correctly. During silo filling procedures isokinetic monitoring of emissions from the arrestment plant is not likely to be possible as the delivery period is so short. For this reason there is no numerical emission limit for such plant. It is important however that the plant is designed to cope with the delivery flow rate that is used for the silo.
- All new or replacement silo filtration plant should be designed to operate to an emission standard of less than 10 mg/m<sup>3</sup> for particulate matter.
- 4.28 Silo systems require appropriate inspections and assessments to minimise potential for emissions during the filling process.
- Operators should have a procedure in place to ensure that visual assessment of emissions from silo inlet connections and the silo arrestment plant are undertaken throughout the duration of all bulk deliveries. The start and finish times of all deliveries should be recorded.

## Inspection of filtration plant

- 4.29 Silo arrestment plant and arrestment plant serving other process operations should be inspected at the frequency specified in **Table 4.2** below:

<b>Table 4.2 - Filtration plant inspection frequency</b>	
<b>Filter cleaning method</b>	<b>Frequency of visual inspection</b>
Fitted with reverse jets	at least once a month
Fitted with mechanical shakers	at least once a week
Requiring manual shaking	daily inspection or prior to any delivery being made if deliveries are not daily

- The outlet should be checked for signs that emissions have occurred. The equipment should also be checked for defects in the air flow or the cam shakers. If emissions or defects are detected then corrective action should be taken promptly and before another delivery takes place. Any failure of the silo management system (e.g. high level alarms, filter, pressure relief valve) should lead to full investigation of the operation of the plant and equipment.
- Reduced inspection frequency of bag filter (or cartridge) arrestment plant may be appropriate, as follows:
  - (a) where pressure drop sensors or other continuous monitors are used to monitor the arrestment plant; such monitors should be inspected according to manufacturers' recommendations to ensure their proper operation.
  - (b) where continuous camera operation enables observation of all emission points from the arrestment plant and pressure relief valves.
  - (c) for filters fitted with reverse jets or with mechanical shakers where operating experience has demonstrated satisfactory operation of the arrestment plant.
  - (d) where the process operation is infrequent.

### **Wet arrestment plant**

4.30 Where wet arrestment plant is used the whole system, including spray heads and head height of water supply, where relevant, should be regularly inspected and maintained. Correct functioning of the system should be monitored as follows:

- The liquor circulation should be monitored by suitable instrumentation such as a variable orifice meter, to provide continuous indication of liquor flow, with alarms to alert the operator in the event of reduced flow. Where supply of water may be irregular then an alarm should be installed to alert the operator in the event of a water supply problem.



## 5. Control techniques

### Summary of best available techniques

- 5.1 **Table 5.1** provides a summary of the best available techniques that can be used to control the process in order to meet the emission limits and provisions in **Section 4**. Provided that it is demonstrated to the satisfaction of the regulator that an equivalent level of control will be achieved, then other techniques may be used.

**Table 5.1 - Summary of control techniques**

Sources of dust	Control techniques
Loading and unloading processes Conveyor transfer points	Within buildings Suppression Reduced drop heights <ul style="list-style-type: none"> <li>▪ use of variable height conveyors</li> <li>▪ use of chutes</li> </ul> Dust arrestment (loading area) <ul style="list-style-type: none"> <li>▪ bag filters</li> <li>▪ cartridge filters</li> </ul>
Double handling transfer points	Site and process design
Delivery from road tanker to silo <ul style="list-style-type: none"> <li>▪ it is common for overcharging of silos to cause the pressure relief valve to lift, thereby causing an unacceptable emission.</li> </ul>	Process control
Silos	Dust arrestment <ul style="list-style-type: none"> <li>▪ bag filters</li> <li>▪ cartridge filters</li> </ul>
Raw material storage	Storage silos Linhays Bags Within buildings

Conveyors, conveyor transfer points	<p>Containment</p> <ul style="list-style-type: none"> <li>▪ wind boards</li> </ul> <p>Appropriate siting</p> <ul style="list-style-type: none"> <li>▪ away from site boundary especially if near residential or other sensitive receptors</li> </ul>
Drying, grinding and milling processes	<p>Within process buildings</p> <p>Dust arrestment</p> <ul style="list-style-type: none"> <li>▪ bag filters / cartridge filters</li> </ul> <p>Wet arrestment</p> <ul style="list-style-type: none"> <li>▪ venturi scrubbers</li> </ul>
Blending, packing processes etc	<p>Containment</p> <p>Reduced drop heights</p> <p>Dust arrestment</p> <ul style="list-style-type: none"> <li>▪ bag filters / cartridge filters</li> </ul>
Roadways including haulage roads	<p>Suppression</p> <ul style="list-style-type: none"> <li>▪ site and process design</li> </ul>
<p>External operations</p> <p>Conveyors</p> <p>Roadways</p>	<p>Appropriate siting</p> <ul style="list-style-type: none"> <li>▪ away from site boundary especially if near residential or other sensitive receptors</li> </ul> <p>Wind dynamics management</p> <ul style="list-style-type: none"> <li>▪ use of fencing, bunding, profiling etc</li> </ul>
Vehicles - bodies and wheels	Wheel-wash and under-body vehicle wash
Lorries, trains	<p>Covering</p> <ul style="list-style-type: none"> <li>▪ dust covers</li> </ul>
<b>Sources of fluoride emissions</b>	<b>Control techniques</b>
Calciner	<p>Dry alkaline scrubbing of emissions</p> <p>Wet scrubbing of emissions</p> <p>Dispersion in the atmosphere</p>

## Techniques to control emissions from contained sources

- 5.2 The control techniques described below address the sources of particulate matter listed in **Table 5.1**.

### Silos

- 5.3 The silo management system includes the high level alarms, arrestment plant and pressure relief device. If best practice is being applied then any failure of the silo management system leads to full investigation of the operation of the plant and equipment. Continuous high level monitoring systems are currently available for use in storage silos. They may be used telemetrically to monitor stock within the silo. They should also be used to automatically stop delivery of material to the silo in the case of over-filling.
- 5.4 Careful delivery by trained personnel will avoid materials being blown into silos at a rate which is likely to result in pressurisation of the silo, especially towards the end of the delivery when the quantity of material entering the ducting is reduced.
- 5.5 The following measures relating to arrestment plant on silos and other silo management techniques are only applicable where the silo vents to the external environment or where silo emissions may escape from inside a building into the external environment.
- All dusty or potentially dusty materials should be stored in silos, in confined storage areas within buildings, or in fully enclosed containers / packaging. Where the storage is open within a building, then suitable precautions should be taken to prevent wind whipping.
  - When delivery to a silo or bulk storage tank takes place, displaced air should be vented to suitable arrestment plant for example cartridge/bag filters, in order to minimise emissions. Arrestment plant fitted to silos should be of sufficient size (and kept clean) to avoid pressurisation during delivery.
  - In order that fugitive emissions are minimised during the charging of silos, transfer lines should be securely connected to the silo delivery inlet point and the tanker discharge point, in that order. Tanker drivers should be informed of the correct procedures to be followed.
  - Bulk storage tanks and silos containing dry materials should be equipped with audible and/ or visual high level alarms, or volume indicators, to warn of overfilling. The correct operation of such alarms should be checked in accordance with manufacturers' instructions. If manufacturers' instructions do not specify, then the check should be weekly or before a delivery takes place, whichever is the longer interval.

- If emissions of particulate matter are visible from ducting, pipework, the pressure relief device or dust arrestment plant during silo filling, the operation should cease; the cause of the problem should be rectified prior to further deliveries taking place. Tanker drivers should be informed of the correct procedure to be followed.
- Seating of pressure relief devices on silos should be visually checked at least once a week, or before a delivery takes place, whichever is the longer interval.
- Immediately it appears that the device has become unseated during silo filling, no further delivery should take place until corrective action has been taken. The pressure relief device should be examined to check for defects before being re-set and a replacement fitted if necessary. Tanker drivers should be informed of the correct procedure to follow.
- Deliveries to silos from road vehicles should only be made using tankers with an on-board (truck mounted) relief valve and filtration system.
- Care should be taken to avoid delivering materials to silos at a rate which is likely to result in pressurisation of the silo. If compressed air is being used to blow powder into a silo then particular care is required towards the end of the delivery when the quantity of material entering the ducting is reduced and hence the air flow is increased.
- All new silos should be fitted with an automatic system to cut off delivery in the event of pressurisation or overfilling.

## **Conveying**

5.6 There are various ways of keeping conveyor belts and the surrounding areas clean. For example, where chevron belts are used catch plates may be fitted to contain dust falling from the underside of the belt at the turning point. From a health and safety perspective this is not always possible and hoses and sprinklers is a possible alternative. New conveyors can be designed to minimise free fall at discharge points. A chute, or similar equipment, at the point of discharge from a conveyor reduces dust arising. Arrestment plant might be a suitable control option if dusty emissions arise from conveyor transfer points. The conditions relating to conveyors should not be applied where material has been screened to remove particles under 3mm in size, unless visible dust emissions have been observed from the conveyors. The following conditions should only be applied where emissions to the external environment are likely to arise:

- Where dusty materials are conveyed, the conveyor and any transfer points should be provided with adequate protection against wind whipping i.e. enclosed on at least one side and above. All transfer

points should be enclosed to such an extent as to minimise the generation of airborne dust.

- Conveyors should be fitted with effective means for keeping the return belt clean and for collecting materials removed by this cleaning operation.
- Conveyor belts should not be overloaded.
- Where the free fall of material gives rise to external dust emissions, techniques should be used at the point of discharge to minimise this, for example the use of a chute or similar equipment.
- Planned preventative maintenance schedules should include conveyor systems.

### **Process operations**

5.7 Emissions from the process operations covered by this note comprise very fine particulate matter, in the form of dust. The control of dust emissions from these processes is mainly by

5.8 The use of enclosures. Internal transport of dusty materials should be carried out so as to prevent or minimise airborne dust emissions, as this then reduces the potential for fugitive emissions.

- Spray dried clay materials should be stored and handled in closed systems which are vented to air through arrestment plant.
- Where particulate matter emissions are abated using a wet scrubber, the scrubber should be regularly inspected and maintained. Action should be taken to deal with any blockages that occur due to accumulation of solids.
- The packing of dried powdery material into bags should be carried out using purpose designed plant fitted with extraction for displaced air ducted to arrestment plant (for example bag filters).

## Techniques to control fugitive emissions

- 5.9 Fugitive dust emissions should be prevented whenever practicable. When this is not practicable arrestment should be used, or emissions should be controlled at source by measures agreed between the regulator and the operator, for example, avoidance of spillage and maintenance of high standards of housekeeping. Attention should be paid to preventing and cleaning up deposits of dust on external support structures and roofs, in order to minimise wind entrainment of deposited dust.
- All dusty or potentially dusty materials should be stored in silos, in confined storage areas within buildings, or in fully enclosed containers / packaging. Where the storage is open within a building, then suitable precautions should be taken to prevent wind whipping.
  - All process buildings should be made as dust tight as is necessary to prevent visible emissions.
  - All process buildings should be cleaned regularly, according to a written maintenance programme, to minimise fugitive emissions.
  - All new buildings housing processing machinery should be externally clad with materials that can be readily cleaned.
  - Where local exhaust ventilation is used, emissions may be ducted to suitable arrestment plant.
  - Dusty wastes should be stored in closed containers.
  - The method of collection of product or waste from dry arrestment plant should be such that dust emissions are minimised.
  - A high standard of housekeeping should be maintained.
  - All spillages which may give rise to dust emissions should be cleaned up promptly, normally by vacuum methods. Dry handling of dusty spillages should not be permitted other than in fully enclosed buildings. (N.B. Dry handling of dusty spillages within fully enclosed buildings may not be acceptable under COSHH.) In the event of a major spillage it should be dealt with on the same day that it occurs, and measures to minimise emissions should be taken immediately.

## **Loading and unloading**

- 5.10 In loading areas appropriate dust control measures may include the following:
- enclosure fitted with extract ventilation to arrestment plant;
  - enclosure fitted with water sprinklers.
- 5.11 Best practice ensures that potentially dusty materials being delivered to the site are sheeted or held in closed containers before being admitted to the site.
- Spray dried clay materials should only be moved from site in closed tanks, bags or other containers.
  - Loading of spray dried clay materials and other potentially dusty materials into tanks, bags or other containers should be carried out so as to minimise the generation of airborne dust, for example, by minimising drop heights.
  - Loading of product for transport by road, rail or sea should be carried out so as to minimise the generation of airborne dust. Where problems of dust emissions arise then suppression or other control techniques should be used.
  - Emissions from bulk storage vessels during offloading should either be vented to suitable arrestment plant (e.g. a bag filter) or backvented to the delivery tanker as approved by the regulator, in order to minimise visible emissions.
  - Transport of dusty materials should be carried out so as to prevent or minimise airborne dust emissions.

## **Roadways and vehicles**

- 5.12 In designing a new process, minimising vehicle movement in the site layout will enable better control of roadways with the potential for fugitive emissions.
- 5.13 Vehicle exhausts directed above the horizontal are preferred as these avoid the impact of the exhaust raising dust when travelling on internal roadways.

- 5.14 On some sites wheel-cleaning facilities may be useful to prevent dust being carried off the site. Where the plant is co-located with a quarry which has wheel wash and underbody wash facilities available, these might be used where necessary. If a plant is co-located with a quarry which does not have wheel-wash facilities, it may not be appropriate to install them. Vehicles may also be effectively cleaned, prior to leaving site, with a brush and hose. Sometimes the presence of a long access road ensures that any dust falls off the vehicles and does not reach the public highway. Hard surfacing for roadways should normally comprise compacted stone chippings between the loading points and the wheel wash (where present), and macadam or concrete for the final section of road leading to the public highway. Sweeping, wetting or sealing are all techniques that may be used to reduce dust emissions from roads. The technique that should be used depends upon the type of road under consideration.
- Roadways in normal use and any other area where there is regular movement of vehicles should have a hard surface capable of being cleaned or kept wet. They should be kept clean or wet, in order to prevent or minimise dust emissions. They should be adequately drained to avoid ponding of water. They should be kept in good repair.
  - Where necessary to prevent visible dust being carried off site, wheel-cleaning facilities should be provided and used by vehicles before leaving the site.

## **Air Quality**

### **Dispersion & Dilution**

- 5.15 Pollutants that are emitted via a stack require sufficient dispersion and dilution in the atmosphere to ensure that they ground at concentrations that are deemed harmless. This is the basis upon which stack heights are calculated using HMIP Technical Guidance Note D1 (**D1**). The stack height so obtained is adjusted to take into account local meteorological data, local topography, nearby emissions and the influence of plant structure.

The calculation procedure of D1 is usually used to calculate the required stack height but alternative dispersion models may be used in agreement with the regulator. An operator may choose to meet tighter emission limits in order to reduce the required stack height.



- 5.16 Where an emission consists purely of air and particulate matter, (i.e. no products of combustion or any other gaseous pollutants are emitted) the above provisions relating to stack height calculation for the purpose of dispersion and dilution should not normally be applied. Revised stack height calculations should not be required as a result of publication of this revision of the PG note, unless it is considered necessary because of a breach or serious risk of breach of an EC Directive limit value or because it is clear from the detailed review and assessment work that the permitted process itself is a significant contributor to the problem.

#### **Ambient air quality management.**

- 5.17 In areas where air quality standards or objectives are being breached or are in serious risk of breach and it is clear from the detailed review and assessment work under Local Air Quality Management that the permitted process itself is a significant contributor to the problem, it may be necessary to impose tighter emission limit. If the standard that is in danger of being exceeded is not an EC Directive requirement, then industry is not expected to go beyond BAT to meet it. Decisions should be taken in the context of a local authority's Local Air Quality Management action plan. For example, where a permitted process is only responsible to a very small extent for an air quality problem, the authority should not unduly penalise the operator of the process by requiring disproportionate emissions reductions. Paragraph 59 of the [Air Quality Strategy 2007 \[Volume 1\]](#) gives the following advice:

“...In drawing up action plans, local authority environmental health/pollution teams are expected to engage local authority officers across different departments, particularly, land-use and transport planners to ensure the actions are supported by all parts of the authority. In addition, engagement with the wider panorama of relevant stakeholders, including the public, is required to ensure action plans are fit-for-purpose in addressing air quality issues. It is vital that all those organisations, groups and individuals that have an impact upon local air quality, buy-in and work towards objectives of an adopted action plan.”

#### **Stacks, vents and process exhausts**

- 5.18 Liquid condensation on internal surfaces of stacks and exhaust ducts might lead to corrosion and ductwork failure or to droplet emission. Adequate insulation will minimise the cooling of waste gases and prevent liquid condensation by keeping the temperature of the exhaust gases above the dewpoint. A leak in a stack/vent and the associated ductwork, or a build up of material on the internal surfaces may affect dispersion:
- Flues and ductwork should be cleaned to prevent accumulation of materials, as part of the routine maintenance programme.
- 5.19 In order to ensure dispersion is not impaired by either low exit velocity at the point of discharge, or deflection of the discharge, a cap, or other

restriction, should not be used at the stack exit. However, a cone may sometimes be useful to increase the exit velocity to achieve greater dispersion.

- 5.20 An exception to the above is where wet arrestment is used as the abatement. Unacceptable emissions of droplets could occur from such plant where the linear velocity in the stack exceeds 9 m/sec. To reduce the potential of droplet emissions a mist eliminator should be used. Where a linear velocity of 9m/sec is exceeded in existing plant consideration should be given to reducing this velocity as far as practicable to ensure such droplet entrainment and fall out does not happen.

## **Management**

### **Management techniques**

- 5.21 Important elements for effective control of emissions include:
- proper management, supervision and training for process operations;
  - proper use of equipment;
  - effective preventative maintenance on all plant and equipment concerned with the control of emissions to the air; **and**
  - ensuring that spares and consumables - in particular, those subject to continual wear – are held on site, or available at short notice from guaranteed local suppliers, so that plant breakdowns can be rectified rapidly. This is important with respect to arrestment plant and other necessary environmental controls. It is useful to have an audited list of essential items.

### **Appropriate management systems**

- 5.22 Effective management is central to environmental performance; It is an important component of BAT and of achieving compliance with permit conditions. It requires a commitment to establishing objectives, setting targets, measuring progress and revising the objectives according to results. This includes managing risks under normal operating conditions and in accidents and emergencies. It is therefore desirable that installations put in place some form of structured environmental management approach, whether by adopting published standards (ISO 14001 or the EU Eco Management and Audit Scheme [EMAS]) or by setting up an environmental management system (EMS) tailored to the nature and size of the particular process. Operators may also find that an EMS will help identify business savings.
- 5.23 Regulators should use their discretion, in consultation with individual operators, in agreeing the appropriate level of environmental management. Simple systems which ensure that LAPPC considerations

are taken account of in the day-to-day running of a process may well suffice, especially for small and medium-sized enterprises. Regulators are urged to encourage operators to have an EMS for all their activities, but it is outside the legal scope of an LAPPC permit to require an EMS for purposes other than LAPPC compliance. For further information/advice on EMS refer to the appropriate chapter of the appropriate Guidance Manual for [England and Wales](#), [Scotland](#) and [Northern Ireland](#).

### **Training**

- 5.24 Staff at all levels need the necessary training and instruction in their duties relating to control of the process and emissions to air. In order to minimise risk of emissions, particular emphasis should be given to control procedures during start-up, shut down and abnormal conditions. Training may often sensibly be addressed in the EMS referred to above.
- All staff whose functions could impact on air emissions from the activity should receive appropriate training on those functions. This should include:
    - awareness of their responsibilities under the permit;
    - steps that are necessary to minimise emissions during start-up and shutdown;
    - actions to take when there are abnormal conditions, or accidents or spillages that could, if not controlled, result in emissions.
  - The operator should maintain a statement of training requirements for each post with the above mentioned functions and keep a record of the training received by each person. These documents should be made available to the regulator on request.

## **Maintenance**

5.25 Effective preventative maintenance plays a key part in achieving compliance with emission limits and other provisions. All aspects of the process including all plant, buildings and the equipment concerned with the control of emissions to air should be properly maintained. In particular:

- The operator should have the following available for inspection by the regulator:
  - a written maintenance programme for all pollution control equipment; **and**
  - a record of maintenance that has been undertaken.

## 6. Summary of changes

The main changes to this note, with the reasons for the change, are summarised below in **Table 6.1**. Minor changes that will not impact on the permit conditions e.g. slight alterations to the Process Description have not been recorded.

<b>Table 6.1 - Summary of changes</b>			
<b>Section/paragraph/row</b>	<b>Change</b>	<b>Reason</b>	<b>Comment</b>
Introduction			
	Simplification of text	Make Note clearer	
	Addition of links	Change to electronic format	Removes need for extensive footnotes/references
Emission limits, monitoring and other provisions			
Table 3	Limit for Pre-1995 pulverisers Dryer now 50mg/m <sup>3</sup>	Bring all pulveriser Dryers into line	16 Years since 1995 – ELV updated to reflect BAT
Control techniques			
Air Quality	Clarification of exhaust velocity requirements		
Para 5.8	Reference to flocculation removed	Aid process	Prevents production issues

## 7. Further information

### **Sustainable consumption and production (SCP)**

Both business and the environment can benefit from adopting sustainable consumption and production practices.

Estimates of potential business savings include:

- £6.4 billion a year UK business savings from resource efficiency measures that cost little or nothing;
- 2% of annual profit lost through inefficient management of energy, water and waste;
- 4% of turnover is spent on waste.

When making arrangement to comply with permit conditions, operators are strongly advised to use the opportunity to look into what other steps they may be able to take. Regulators may be willing to provide assistance and ideas, although cannot be expected to act as unpaid consultants.

### **Health and safety**

Operators of processes and installations must protect people at work as well as the environment:

- requirements of a permit should not put at risk the health, safety or welfare of people at work
- equally, the permit must not contain conditions whose only purpose is to secure the health of people at work. That is the job of the health and safety enforcing authorities

Where emission limits quoted in this guidance conflict with health and safety limits, the tighter limit should prevail because:

- emission limits under the relevant environmental legislation relate to the concentration of pollutant released into the air from prescribed activities
- exposure limits under health and safety legislation relate to the concentration of pollutant in the air breathed by workers
- these limits may differ since they are set according to different criteria. It will normally be quite appropriate to have different standards for the same pollutant, but in some cases they may be in conflict (for example, where air discharged from a process is breathed by workers). In such cases, the tighter limit should be applied to prevent a relaxation of control.

## **Further advice on responding to incidents**

The UK Environment Agencies have published [guidance](#) on producing an incident response plan to deal with environmental incidents. Only those aspects relating to air emissions can be subject to regulation via a Part B permit, but regulators may nonetheless wish to informally draw the attention of all appropriate operators to the guidance.

It is not envisaged that regulators will often want to include conditions, in addition to those advised in this PG note, specifying particular incident response arrangements aimed at minimising air emissions. Regulators should decide this on a case-by-case basis. In accordance with BAT, any such conditions should be proportionate to the risk, including the potential for harm from air emissions if an incident were to occur. Account should therefore be taken of matters such as the amount and type of materials held on site which might be affected by an incident, the likelihood of an incident occurring, the sensitivity of the location of the installation, and the cost of producing any plans and taking any additional measures.

# Appendix 1 - Application form

## Application for a permit for a china and ball clay process, including the spray drying of ceramics

Local Authority Pollution Prevention and Control  
Pollution Prevention and Control Act, 1999  
Environmental Permitting (England and Wales) Regulations 2010

### Introduction

#### When to use this form

Use this form if you are applying for a permit to a Local Authority to operate a china and ball clay (including spray drying of ceramics) installation as defined in Schedule 1 to the Environmental Permitting Regulations.

The appropriate fee must be enclosed with the application to enable it to be processed further. When complete, send the form and the fee and any additional information to:

*\*Insert local authority address\**

#### If you need help and advice

We have made the application form as straightforward as possible, but please get in touch with us at the local authority address given above if you need any advice on how to set out the information we need.

For the purposes of Section H of the form, a relevant offence is any conviction for an offence relating to the environment or environmental regulation.

#### LAPPC application form: to be completed by the operator

For Local Authority use		
Application reference	Officer reference	Date received



**A**     **The basics**

**A1**    **Name and address of the installation (not required for mobile plant)**

Postcode	Telephone

**A2**    **Details of any existing environmental permit or consent** *(for waste operations, include planning permission for the site, plus established use certificates, a certificate of lawful existing use, or evidence why the General Permitted Development Order applies.)*

--

**A3**    **Operator details** *(The ‘operator’ = the person who it is proposed will have control over the installation in accordance with the permit (if granted).)*

Name:
Trading name, if different:
Registered office address:
Principal office address, if different:
Company registration number:

**A4 Any holding company?**

Is the operator a subsidiary of a holding company within the meaning of section 1159 of the Companies Act 2006? If “yes” please fill in details of the ultimate holding company.

No  Yes

Name: Trading name, if different:
Registered office address;  Principal office address, if different:
Company registration number:

**A5 Who can we contact about your application?** *It will help to have someone who we can contact directly with any questions about your application. The person you name should have the authority to act on behalf of the operator - This can be an agent or consultant.*

Name and position: _____
Telephone: _____
Email: _____

**B**     **The installation**

**B1**    **Are you processing:**

a)     ball clay        Yes  No

b)     china clay       Yes  No

**B2**    **Do you have a calciner?**

Yes  No

**B3**    **Why is the application being made?**

new installation

change to existing installation means it now needs a permit

**B4**    **Site maps – please provide:**

- A location map showing with a red line round the boundary of the installation

Document reference: \_\_\_\_\_

- A site plan or plans showing where all the relevant activities are on site:
  - a) where the processing plant will be installed
  - b) the areas and buildings/structures designated for materials and waste storage and the type of storage
  - c) the conveyors and transfer points
  - d) any directly associated activities or waste operations.

To save applying for permit variations, you can also show where on site you might want to use for storage etc in the future.

Document reference: \_\_\_\_\_

**B5**    **Are there any sites of special scientific interest (SSSIs) or European protected sites nearer than any of the following distances to the proposed installation?**

- 2km - where the installation includes Part B combustion, incineration (not cremation), iron and steel, or non-ferrous metal activities
- 1km - where the installation involves mineral or cement and lime activities

Yes  No

If 'yes', is the installation likely to have a significant effect on these sites and, if so, please write on a separate sheet or enclose a relevant document explaining what the implications are for the purposes of the Conservation (Natural Habitats etc) Regulations 1994 (see appendix 2 of Annex XVII of the [general guidance manual](#))

Yes  No

**B6 Will emissions from the activity potentially have significant environmental effects (including nuisance)?**

Yes  No

**If 'yes':** list the potential significant local environmental effects (including nuisance) of the foreseeable emissions:

Document Reference: \_\_\_\_\_

- Please enclose a copy of any environmental impact assessment which has been carried out for the installation under planning legislation or for any other purpose.

Document Reference: \_\_\_\_\_

**C The details**

**C1 Do you have arrestment equipment with external discharge points, not serving silos or dryers with an exhaust flow:** *[informs Table 1]*

- a) greater or equal to 300m<sup>3</sup>/min?  Yes  No
- b) greater than 100m<sup>3</sup>/min but less than 300m<sup>3</sup>/min  Yes  No
- c) less than 100m<sup>3</sup>/min  Yes  No

**C2 Do you have continuous monitors to show compliance with a numerical limit in Table 1 of the simple permit?** *[informs Condition 2 & Table 1]*

Yes  No

**If yes, do the continuous monitors have alarms which are:** (tick all that apply) *[informs condition 2]*

- a) visible  Yes  No
- b) audible  Yes  No
- c) alarm activation recorded automatically  Yes  No
- d) is a trigger level set  Yes  No

At what percentage of the emission limit is the value set? .....%

**Have you undertaken isokinetic sampling at least once to demonstrate compliance with the numerical limit in Table 1?**

Yes  No

**C3 Is odour arrestment equipment installed?** *[informs condition 2 and Table 1]*

Yes  No

**If yes please describe it:** *[informs condition 2 and Table 1]*

\_\_\_\_\_

Note: "dusty material" should be taken to be any material which can be wind-entrained. It excludes, for example, >3mm material and scalpings.

**C4 Which of the following will the dusty material be stored in:** *[informs condition 5]*  
(tick all that apply)

- a) silo
  - b) bulk storage tank
  - c) within a building
  - d) in fully-enclosed containers/packaging
  - e) other - please specify:
- 

**C5 Do you have pneumatic transfer of materials?** *[informs conditions 4 - 7]*

Yes  No

**If yes, does the displaced air pass through abatement plant prior to emission to air?** *[informs conditions 4 - 7]*

Yes  No

**If yes to C5, will displaced air from pneumatic loading and unloading be:** *[informs conditions 4 - 7]*  
(tick all that apply)

- a) vented to arrestment plant
  - b) back-vented to the delivery tanker
  - c) other - please specify:
- 

**If yes to C5, do deliveries automatically stop for** *[informs conditions 4 - 7]*

- a) over-filling  Yes  No
- b) over-pressurisation  Yes  No

**If yes to C5, are any silos new since June 2004?** *[informs conditions 4 - 7]*

Yes  No

**If yes to C5, do you have alarms to warn of overfilling?** *[informs conditions 4 - 7]*

Yes  No

**C6 For materials not dealt with in C5, what facilities will be provided to store any dusty material and waste? (tick all that apply)** *[informs condition 8]*

- a) hopper wind-protected on at least 3 sides
- b) storage bay without suppression & stockpiles lower than retaining walls
- c) storage bay with suppression
- d) fully-enclosed stores
- e) other - *please specify:* \_\_\_\_\_

**C7 When loading or unloading dusty materials, is this done:**

*(tick all that apply)* *[informs conditions 8, 9 & 10]*

- a) in enclosures
- b) enclosed and ducted to arrestment equipment
- c) enclosure with sprinkler
- d) fitted with a chute
- e) other – *please specify:* \_\_\_\_\_

**C8 Will any material be stored in the open (unenclosed) other than material wholly comprised of one or more of the following: >3mm material, sand, conditioned crusher-run or blended material?** *[informs condition 8 & 9]*

Yes  No

**C9 Do you have belt conveyors:** *[informs condition 9]*

Yes  No

**If yes, which of the following facilities will be provided to convey any dusty material and waste (tick all that apply)** *[informs condition 9]*

- a) deep trough ground-level conveyor
- b) fully-enclosed conveyor
- c) pneumatic handling system
- d) bucket elevator
- e) wind boards
- f) other – *please specify:* \_\_\_\_\_

**C10 Which of the following methods will be used to minimise emissions at belt conveyor transfer points, including free fall of material?**

*(tick all that apply)*

*[informs condition 9]*

- a) enclosed
- b) enclosed and ducted to arrestment equipment
- c) fitted with a chute
- d) other - *please specify:* \_\_\_\_\_

**C11 Which of the following techniques will be used to clean belt conveyors**

*(tick all that apply)*

*[informs condition 9]*

- a) belt scrapers
- b) catch plates
- c) other techniques for keeping the return belt clean and collecting the material removed by the cleaning – *please specify*

\_\_\_\_\_

**C12 How will potentially dusty materials (including any raw materials, finished products and waste), arrive at or leave the site? *(tick all that apply)***

*[informs Condition 10]*

	Raw Materials	Finished Products	Waste
Road			
Rail			
Other			

**C13 How will potentially dusty materials, (including any raw material, finished products and waste) be transported within the site**

*(tick all that apply)*

*[informs condition 17]*

- a) fully-enclosed transport
- b) 'canopied' rail wagons
- c) sheeted transport
- d) water suppression applied to the transported material
- e) aqueous polymer suppression applied to the transported material
- f) bagged
- g) other – *please specify:* \_\_\_\_\_

**C14 Do you have any quarry roads as part of the installation?**

*[informs condition 12]*

Yes  No

**C15 Which techniques will you use to ensure that vehicles do not track material onto**

**the highway?**

*[informs condition 13]*

- a) Body and wheel wash
- b) Wheel wash
- c) Hose and brush
- d) Sufficient distant to the site boundary on sealed road before leaving site

Yes  No

e) Other please specify: \_\_\_\_\_

**C16 Do you use any of the following fuels? (tick all that apply) *[informs stack height]***

- a) heavy fuel oil
- b) gas oil
- c) gas
- d) processed fuel oil
- e) other waste derived fuel
- f) other - *please sepcify:* \_\_\_\_\_

**What is the rated thermal input of burners?**

\_\_\_\_\_

**C17 Do you have environmental management procedures and policy?**

*[informs condition 3, 15 & 16]*

Yes  No



**D**     **Anything else**

Please tell us anything else you would like us to take account of.

Document Reference \_\_\_\_\_

**E**     **Application fee**

You must enclose the [relevant fee](#) with your application.

If your application is successful you will also have to pay an annual subsistence charge, so please say who you want invoices to be sent to.

## **F     Protection of information**

### **F1     Any confidential or national security info in your application?**

If there is any information in your application you think should be kept off the public register for confidentiality or national security reasons, please say what and why. [General guidance manual](#) chapter 8 advises on what may be excluded. *(Do not include any national security information in your application. Send it, plus the omitted information, to the Secretary of State or Welsh Ministers who will decide what, if anything, can be made public.)*

Document Reference \_\_\_\_\_

### **F2     Please note: data protection**

The information you give will be used by the Council to process your application. It will be placed on the relevant public register and used to monitor compliance with the permit conditions. We may also use and or disclose any of the information you give us in order to:

- consult with the public, public bodies and other organisations,
- carry out statistical analysis, research and development on environmental issues,
- provide public register information to enquirers,
- make sure you keep to the conditions of your permit and deal with any matters relating to your permit
- investigate possible breaches of environmental law and take any resulting action,
- prevent breaches of environmental law,
- offer you documents or services relating to environmental matters,
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows)
- assess customer service satisfaction and improve our service.

We may pass on the information to agents/representatives who we ask to do any of these things on our behalf.

### **F3     Please note: it is an offence to provide false etc information**

It is an offence under regulation 38 of the EP Regulations, for the purpose of obtaining a permit (for yourself or anyone else), to:

- make a false statement which you know to be false or misleading in a material particular,
- recklessly make a statement which is false or misleading in a material particular
- intentionally to make a false entry in any record required to be kept under any environmental permit condition
- with intent to deceive, to forge or use a document issued or required for any purpose under any environmental permit condition.

If you make a false statement

- we may prosecute you, and
- if you are convicted, you are liable to a fine or imprisonment (or both).

**H     Declarations A and B for signing, please**

*These declarations should be signed by the person listed in answer to question A3. Where more than one person is identified as the operator, all should sign. Where a company or other body corporate is the operator, an authorised person should sign and provide evidence of authority from the board.*

**Declaration A:** I/We certify

**EITHER** – As evidence of my/our competence to operate this installation in accordance with the EP Regulations, no offences have been committed in the previous five years relating to the environment or environmental regulation.

**OR-** The following offences have been committed in the previous five years which may be relevant to my/our competence to operating this installation in accordance with the regulations:

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Signature: \_\_\_\_\_ Name: \_\_\_\_\_

Position: \_\_\_\_\_ Date: \_\_\_\_\_

**Declaration B:** I/We certify that the information in this application is correct. I/We apply for a permit in respect of the particulars described in this application (including the listed supporting documentation) I/we have supplied. *(Please note that each individual operator must sign the declaration themselves, even if an agent is acting on their behalf.)*

Signature: \_\_\_\_\_ Name: \_\_\_\_\_

Position: \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Name: \_\_\_\_\_

Position: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix 2 - Model Permit

This appendix contains a model permit for [ ] installations – see [relevant para in intro] of this note and para 3.6 of the [General Guidance Manual on Policy and Procedures](#) .

### Notes:

- text in the model permit written in *italics* is advice to regulators.
- text in the model permit in square brackets offers choice to regulators or indicates where information needs to be inserted from the application.
- text bracketed with asterisks (eg \*Alarms shall be tested at least once a week\*.) may be omitted by a regulator where the past performance of the plant gives the local authority sufficient reassurance about operator compliance – “earned recognition” .
- the model permit has been drafted for local authorities in England and Wales. Regulators in Scotland and Northern Ireland will need to amend the legal heading and, where appropriate, references to ‘Council’
- references to ‘installation’ will need to be substituted with ‘mobile plant’ in relevant cases, and other amendments made accordingly
- the purpose of the activity description is to set down the main characteristics of the activity, including any directly associated activities, so it is clear to all concerned what is being authorised by the permit and therefore what changes would need further approval. Regulators are advised to include a description of any key items of arrestment and monitoring equipment the operator intends to use or is using.
- it should normally be sufficient for records relating to simplified permits to be kept for no more than 18 months. Where, however, as a result of a ‘low risk’ rating, inspections are undertaken less often, regulators may want to specify a period which ensures the records are available at the next inspection.

[ ] COUNCIL  
POLLUTION PREVENTION AND CONTROL ACT 1999  
Environmental Permitting Regulations 2010 (as amended)

Permit ref. no:

Name and address of person (A) authorised to operate the installation ('the operator')

Registered number and office of company (if appropriate)

Address of permitted installation (B)

The installation boundary and key items of equipment mentioned in permit conditions are shown in the plan attached to this permit.

**Activity description**

The operator (A) is authorised to operate the activity<sup>4</sup> at the installation (B) subject to the following conditions.

**Conditions**

**Emissions and monitoring**

1. No visible particulate matter shall be emitted beyond the installation boundary.

The emission requirements and methods and frequency of monitoring set out in Table 1 shall be complied with.

Any monitoring display required for compliance with the permit shall be visible to operating staff at all times. Corrective action shall be taken immediately if any periodic monitoring result exceeds a limit in Table 1, or if there is a malfunction or breakdown of any equipment which might increase emissions. Monitoring shall be undertaken or repeated as soon as possible thereafter and a brief record shall be kept of the main actions taken.

*Where continuous monitors are fitted to show compliance with a numerical limit in Table 1: All continuous monitors required for compliance with the permit shall be fitted with a [visible] [audible] alarm warning of arrestment failure or malfunction. They shall [activate when emissions reach [75%] of the relevant emission limit in Table 1 and] record automatically each activation. \*Alarms shall be tested at least once a week.\**

<sup>4</sup> listed in [ ] in Part 2 of Schedule 1 to the Environmental Permitting Regulations  
PG3/17 Publication version

*Where odour arrestment equipment is installed:* The odour arrestment equipment shall be inspected not less than once a day for at least the following: a) leaks or blockages in air handling equipment, ductwork and arrestment equipment; b) continuous monitors for arrestment equipment; and c) surface cracking, voids, leaks, compaction, moisture content, and plant/weed growth on biofilters.

2. All plant and equipment capable of causing, or preventing, emissions and all monitoring devices required for maintaining compliance with this Permit shall be calibrated and maintained in accordance with the manufacturer's instructions or to an equivalent standard.  
\*Records shall be kept of such maintenance.\*

### **Silos where used**

3. [*List materials*] shall only be stored within the [*list materials*] silos.
4. Dust emissions from loading or unloading road tankers shall be minimised by [venting to specify type arrestment plant] [backventing to a delivery tanker fitted with an on-board, truck-mounted relief valve and filtration system] and by connecting transfer lines first to the delivery inlet point and then to the tanker discharge point, and by ensuring delivery is at a rate which does not pressurise the silo. [When loading x silo, deliveries must automatically stop where overfilling or over-pressurisation is identified.]
5. Silos and bulk containers of dusty materials shall not be overfilled and there shall be an overfilling alarm.  
(*For silos new after June 2004*) When loading filler silos, deliveries must automatically stop where overfilling or over-pressurisation is identified.
6. Displaced air from pneumatic transfer shall pass through abatement plant prior to emission to air.

### **Aggregates delivery storage of dusty materials (excluding silos)**

7. Dusty materials (including dusty wastes) shall only be stored in [specify storage location] as detailed on the plan attached to this permit and shall be subject to suppression and management techniques to minimise dust emissions.

### **Belt conveying**

8. All dusty materials, including wastes, shall be conveyed using [specify conveyor, level of enclosure and enclosure type]. All transfer points shall be fitted with [specify dust control technique].

### **Loading, unloading and transport**

9. No potentially dusty materials (including wastes) or finished products shall arrive on or leave the site other than by use of [specify transport type and dust control technique].
10. Enclosure fitted with water sprinklers.

### **Roadways and transportation**

11. All areas where there is regular movement of vehicles shall have a consolidated surface capable of being cleaned, and these surfaces shall be kept clean and in good repair. Quarry haul roads are excluded from this provision.
12. Vehicles shall not track material from the site onto the highway.

### **Techniques to control fugitive emissions**

13. The fabric of process buildings shall be [maintained dust tight and doors shall be kept closed when not in use] [maintained so as to minimise visible dust emissions] *select according to visible dust potential of each process building.*

### **Records and training**

14. Written or computer records of all tests and monitoring shall be kept by the operator for at least [ ] months. They [and a copy of all manufacturer's instructions referred to in this permit] shall be made available for examination by the Council. \*Records shall be kept of operator inspections, including those for visible and odorous emissions.\*
15. Staff at all levels shall receive the necessary training and instruction to enable them to comply with the conditions of this permit. Records shall be kept of relevant training undertaken.

*The following two conditions are not needed for PPC permits which transferred automatically into the environmental permitting regime by virtue of regulation 69(6) of the 2007 Regulations and regulation 108(4) of the 2010 Regulations. Where permits are issued on or after 6 April 2008 the next two conditions will not automatically apply and need specific inclusion in the permit where required.*

### **Best available techniques**

16. The best available techniques shall be used to prevent or, where that is not practicable, reduce emissions from the installation in relation to any aspect of the operation of the installation which is not regulated by any other condition of this permit.
17. If the operator proposes to make a change in operation of the installation, he must, at least 14 days before making the change, notify the regulator in writing. The notification must contain a description of the proposed change in operation. It is not necessary to make such a notification if an application to vary this permit has been made and the application contains a description of the proposed change. In this condition 'change in operation' means a change in the nature or functioning, or an extension, of the installation, which may have consequences for the environment.

**Table 1 - Emission limits, monitoring and other provisions**

Row	Substance	Source	Emission limits/provisions	Type of monitoring	Monitoring frequency
1	Particulate matter	Dryer, calciner	50mg/m <sup>3</sup>	Manual extractive testing	6 monthly
		Pulveriser dryer	50mg/m <sup>3</sup>	Manual extractive testing	6 monthly
		All authorised emission points	No visible emission	Visual	Daily
		Silo inlet and outlets	No visible emission Designed to emit less than 10mg/m <sup>3</sup> (new silos since July 1 <sup>st</sup> 2004)	Visual	At delivery
		Arrestment equipment with exhaust flow >300m <sup>3</sup> /min (see note d)	50mg/m <sup>3</sup>	Continuously recorded indicative monitor	Continuous
		Arrestment equipment with exhaust flow >100m <sup>3</sup> /min (see note d)	No visible emission Arrestment equipment should be designed to achieve 50mg/m <sup>3</sup>	Visual Continuously recorded indicative monitor	Continuous
		Arrestment equipment with exhaust flow <100m <sup>3</sup> /min (see note d)	No visible emission	Visual	Continuous
2	Chloride (expressed as hydrogen chloride)	Emissions which have been scrubbed by use of chlorine compounds	10mg/m <sup>3</sup>	Manual extractive testing	6 monthly
3	Fluoride (expressed as hydrogen fluoride)	Calciner	5mg/m <sup>3</sup>	Manual extractive testing	6 monthly



4	Sulphur dioxide	All activities using heavy fuel oil or other residual type/comparable <a href="#">Quality Protocol Processed Fuel Oil</a> (see note e)	1% wt/wt sulphur in fuel	Sulphur content of fuel is regulated under the Sulphur Content of Liquid Fuels Regulations	
		All activities using gas oil/ comparable <a href="#">Quality Protocol Processed Fuel Oil</a> (see note e)	0.1% wt/wt sulphur in fuel		
5	Droplets, persistent mist and fume	All emissions to air (except steam and condensed water vapour)	No droplets, no persistent mist, no persistent fume,	Visual observations	At least daily

\*All periodic monitoring results shall be checked by the operator on receipt and sent to the Council within 8 weeks of the monitoring being undertaken.\*

a) The reference conditions for limits in Table 1 are: 273.1K, 101.3kPa, without correction for water vapour content, unless stated otherwise.

b) All periodic monitoring shall be representative and shall use standard methods.

c) The emission limits do not apply during start-up and shut down. All emissions shall be kept to a minimum during these periods.

d) Where discharge is to external environment (other than serving dryers, calciners or silos)

e) Activities burning waste oil not covered by the [quality protocol processed fuel](#) oil must comply with the Waste Incineration Directive (WID).

## **Right to Appeal**

You have the right of appeal against this permit within 6 months of the date of the decision. The Council can tell you how to appeal [*or supply details with the permit*]. You will normally be expected to pay your own expenses during an appeal.

You will be liable for prosecution if you fail to comply with the conditions of this permit. If found guilty, the maximum penalty for each offence if prosecuted in a Magistrates Court is £50,000 and/or 6 months imprisonment. In a Crown Court it is an unlimited fine and/or 5 years imprisonment.

Our enforcement of your permit will be in accordance with the [Regulators' Compliance Code](#).