

Process Guidance Note 3/16(12)

Statutory guidance for mobile crushing and screening

September 2012



Llywodraeth Cymru
Welsh Government



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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 mobile crushing and screening. It is published only in electronic form and can be found on the [Defra](#) website. It supersedes PG3/16 (04) and NIPG3/16 (Version 2).
- 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 notes¹ giving guidance on the Best Available Techniques (BAT)². 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 mandatory requirements.

¹ 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 statutory guidance in Northern Ireland and as guidance in Scotland.

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

Simplified or standard permits

- 1.6 Most of 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.

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](#).

When to use another note rather than PG3/16

- 1.12 Quarry processes using mobile plant for crushing or screening should use the requirements contained within PG3/08, unless the mobile plant has its own separate permit, in which case the requirements of this note PG 3/16 should be referred to.

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
There are no new provisions in this note likely of themselves to result in a need to vary existing permit conditions. For a full list of changes made by this note, excluding very minor ones, see Table 6.1 .		

- 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 the appropriate Regulations³. 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.

³ 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 mobile crushing and screening. The activities are listed for regulation in **Table 3.1**.

Table 3.1 - Regulations listing activities				
LAPPC	Activity	England and Wales	Scotland	Northern Ireland
		EPR Schedule 1 reference	PPC Schedule 1 reference	PPC Schedule 1 reference
Part A		n/a	n/a	n/a
Part B	Crushing grinding or size reduction, with machinery designed for that purpose of: bricks, tile or concrete or any designated mineral: Screening the product	Section 3.5 Part B	Section 3.5, Part B	n/a
Part B NI	Crushing, grinding or other size reduction, other than the cutting of stone, or the grading, screening or heating of any designated mineral or mineral product	n/a	n/a	Section 3.5 Part B
Part C	Crushing grinding or size reduction, with machinery designed for that purpose of bricks, tile or concrete: Screening the product	n/a	n/a	Section 3.5 Part C

The links are to the original version of the regulations. A consolidated version is not available on www.legislation.co.uk

Asbestos

- 3.2 It should be noted that under a different regulatory regime, demolition contractors are required to inspect a site. Where the presence of asbestos is suspected then hazardous waste regulations must be complied with. Asbestos contaminated waste is required to be removed to a site authorised to take asbestos. A waste consignment note is required for each load and a paper trail of movements of such waste is kept.

Waste exemptions

- 3.3 In England and Wales, LAPPC permits may have conditions relating to waste. There is guidance on waste exemptions and how they interact with LAPPC permits in the General Guidance Manual for [England and Wales](#).

Triviality

- 3.4 There is guidance on triviality for mobile crushers in the General Guidance Manuals for [England and Wales](#), [Northern Ireland](#) and [Scotland](#).

Temporary transfers

- 3.5 In England, local authorities operate a system of temporary transfers for hired plant. There is guidance in the General Guidance Manual for [England and Wales](#).

Mobile crushing

Crushing and Screening

- 3.6 This note applies to the crushing, grinding or other size reduction, with machinery designed for that purpose, of bricks, tiles or concrete, and to mineral products designated by regulation.
- 3.7 This note also applies to installations where demolition material is screened by machine prior to crushing, and to any other pre-treatment activity and the screening of the product. It also applies to screening designated minerals.
- 3.8 (Note that screening of demolition material is not prescribed as long as it is both carried out at a installation separate from any crushing and carried out to material which has not been crushed.)
- 3.9 The construction of stockpiles of crushed and screened demolition arisings at a recycling centre operated by the same person as the mobile plant used at that site, should normally be regarded as part of the process. On the other hand, the loading of crushed material into vehicles at a demolition site when undertaken by another contractor, would not be part of the process.
- 3.10 Further guidance on the authorisation of mobile plant is given in General Guidance Manual [England and Wales](#), [Scotland](#) and [Northern Ireland](#).
- 3.11 Mobile crushing plant is commonly used on demolition sites, at recycling facilities and at quarries.

Mobile crushing plant

- 3.12 Mobile crushers are often **jaw crushers** which have a stationary steel jaw working with a moving jaw to crush and pulverise material.

- 3.13 In mobile **cone crushers**, the crushing takes place between a truncated revolving cone and an outer chamber.
- 3.14 In **rotary impact crushers**, the feedstock is struck by rapidly rotating blowbars, and is thrown against the chamber wall
- 3.15 Free standing mobile crushing plants may be mounted on tracks, although this is not always the case. They tend to be no more than 20 metres in length, so can be used in confined spaces on small sites. These units are usually fed by rubber tyred loaders, back actors or dump trucks. Crushed material may be screened to separate two size ranges of particles, and then is carried from the crusher by conveyor to be stockpiled close to the plant.

Mobile screens

- 3.16 The material may be further screened either from the primary conveyor or from the stockpile; the larger material may be transferred to secondary or tertiary crushing units, screened again and stockpiled.
- 3.17 The screens are large sieves. They vibrate or rotate which causes the particles to be moved across the screen thus sorting out the particles by size. Screens can be integrated in the mobile crushing unit or can be free-standing mobile plant. They are commonly used to sort materials before crushing as well as after crushing.
- 3.18 Mobile crushing plant can be free-standing units or attachments to be fitted to other plant such as an excavator. The vast majority of mobile crushers are now tracked type which means they are delivered to site via low loader and can be put to work within half an hour of arriving on site.

Pulverisers (munchers)

- 3.19 Concrete crushing attachments, known as pulverisers, can be fitted to mini excavators or large excavators and lifted high up on large buildings, for example to aid with the processing of waste using long reach equipment. They can also be suspended from a mobile or tower crane to obtain a longer reach. Pulverisers can crush between 5 - 6 tonnes of material every hour.

Demolition waste

- 3.20 Mobile crushing plant can be used on site to process demolition waste. Where construction is to follow demolition on the site, concrete and steel can be recycled. Once material has been crushed and reduced in size, the arisings can be used on site as piling mats, backfill or for the construction of access roads. Recycling of onsite materials reduces the need to bring in primary aggregate for such applications and reduces the volume of waste material taken away to landfill. However, the option of transferring the demolition material to fixed recycling sites should be considered with regard to the optimisation of its potential and the environmental impact of on site activities.

- 3.21 With regard to the optimisation of the resources It is not ideal to mix the different materials as crushing a mixture results in a very low quality end product that is suitable only for fill. Separation of the materials leads to products suitable for much higher specification uses.

Fixed aggregate recycling sites

- 3.22 Fixed aggregate recycling sites may comprise a range of recycling activities. This PG note addresses the aggregate recycling where mobile crushers are used. Planning conditions address issues relating to traffic flow, noise and emissions to air (including stockpiles and visual impacts). These sites have a waste management licence or a letter of exemption which specifies the types of material allowed on the site.
- 3.23 All incoming material is visually inspected before acceptance on the recycling site. It is also inspected on tipping. In the event of unwanted material arriving on site it would be immediately returned.
- 3.24 Once the material is on site it is predominantly stocked in separate incoming stockpiles, wherever possible, to optimise quality of product, e.g. brick, concrete, asphalt/road planings. However, a mixture stockpile is sometimes inevitable for example, contaminated brick/concrete mix.
- 3.25 The material from the stockpiles will be pre-screened as necessary - then fed to the crusher and screened as described by the flow diagram. Crushers and screens may be moved between stockpiles on site, and between sites (by low loader).

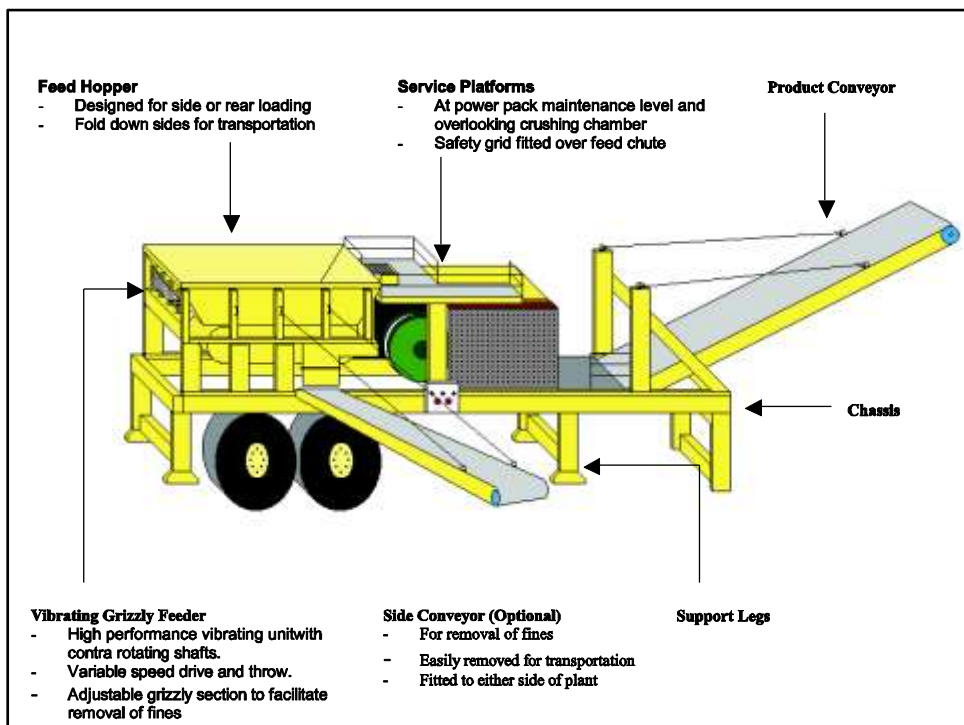


Figure 3.1: Outline diagram of a mobile primary jaw crusher (wheeled type)

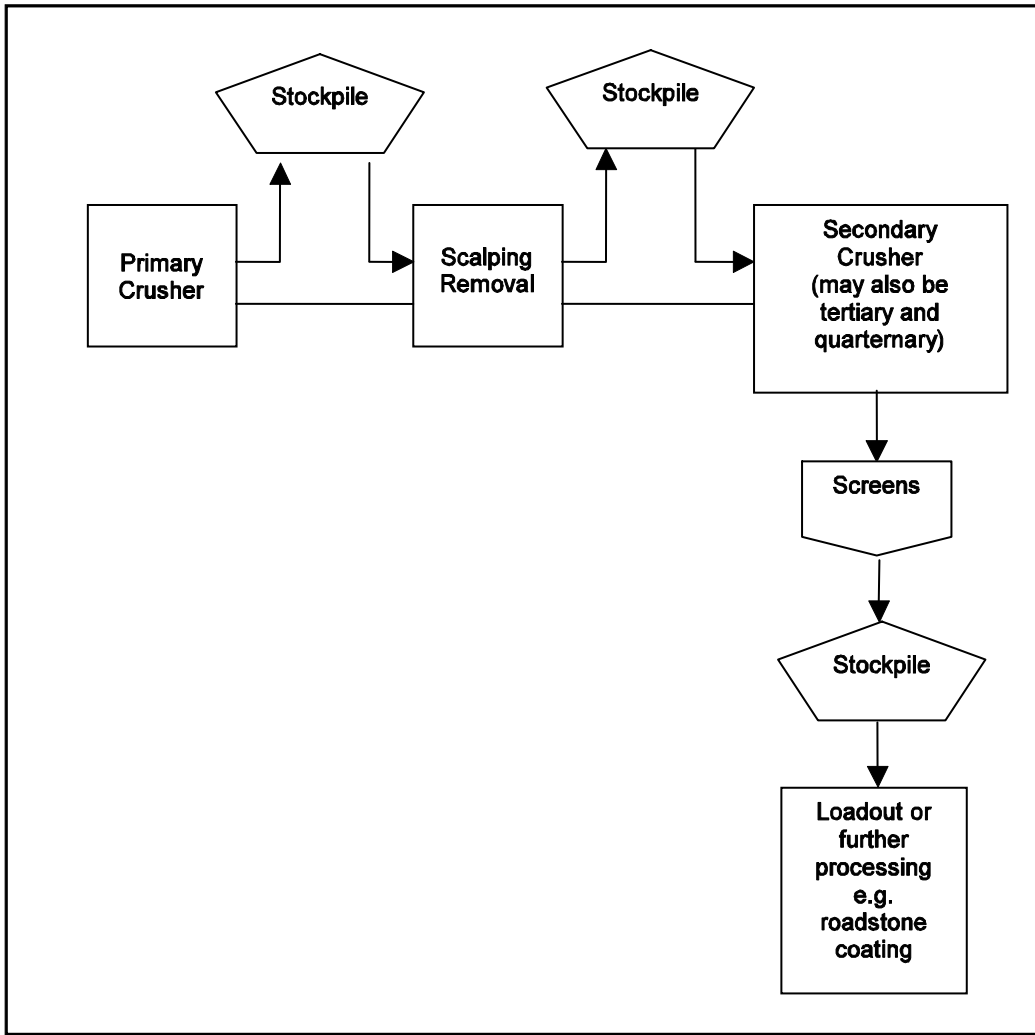


Figure 3.2: Flow Diagram of Crushing and Screening Process

4. Emission limits, monitoring and other provisions

- 4.1 Emissions of the substances listed in **Table 4.1** below should be controlled.
- 4.2 The emission limits 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**.

Table 4.1 - Emission limits, monitoring and other provisions				
Substance	Source	Emission limit/ provisions	Type of monitoring	Monitoring frequency
Particulate matter	Whole process	Avoidance of visible emissions crossing the (construction) site boundary	Recorded operator observations	On start up and on at least two more occasions each day

Visible Emissions

- 4.4 The aim is to prevent an emission from the site which is harmful or offensive. This aim includes all sites, regardless of location. Proper site management and use of environmental controls can create a site that is substantially free from airborne particulate emissions due to the process.
- 4.5 It is expected that the process can be controlled such that, even during minor emission incidents that might arise from time to time, there are no visible emissions more than about 10 metres from plant, conveyor or stockpiles.
- 4.6 It is expected that any emission incidents will be brought under control as soon as they are observed and visible emissions will not be allowed to cross the site boundary.

- 4.7 It should be noted that the permit only seeks to control emissions from the permitted process and that other operations on site, not controlled by the operator, such as demolition for example, may be giving rise to emissions which if unacceptable should be regulated using the appropriate regulatory regime.
- 4.8 Site operations likely to be of a long duration may require monitoring stations to be set up around the site, with the operator using deposition gauges to demonstrate that arrestment techniques are controlling emissions satisfactorily. This would be a site-specific provision depending upon the nature of the contract being undertaken.
- 4.9 Emissions from engines should in normal operation be free from visible smoke.
- All other releases to air, other than condensed water vapour, should be free from persistent visible emissions.
 - All emissions across the construction site boundary shall be free of droplets.
- 4.10 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 who will 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, visual checks should be made more frequently. 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.

Notifying regulator of operations

- 4.11 The regulators need to be notified of mobile crusher activities, and this also applies when mobile plant is brought onto a quarry site.
- Before operations commence, the operator should inform the regulator in whose area the mobile plant is to be operated.

The regulator is a Pollution Control or Environmental Health Department of the local authority in whose area the plant is operating in England or Wales, or district council in Northern Ireland, or the local SEPA office in Scotland.

- The operator should inform the regulator who issued the permit.

Monitoring, investigating and reporting

- 4.12 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.
- Monitoring to identify the origin of a visible emission should be undertaken.
 - The operator should keep records of inspections, tests and monitoring, including all non-continuous monitoring, inspections and visual assessments. The 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.

Abnormal Events

- 4.13 The operator should respond to problems which may have an adverse effect on emissions to air, for example dust emissions.
- 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;
 - stop operations if the water suppression fails.
 - 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, water suppression or water supply

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 <ul style="list-style-type: none"> ▪ transfer of materials 	Containment Suppression Reduced drop heights <ul style="list-style-type: none"> ▪ use of variable height conveyors ▪ use of chutes Appropriate siting - away from site boundary especially if near residential or other sensitive receptors
Double handling transfer points	Site and process design
Aggregate stockpiles	Appropriate siting - away from site boundary especially if near residential or other sensitive receptors Wind dynamics management <ul style="list-style-type: none"> ▪ use of fencing, bunding, profiling etc Reduced drop heights Suppression <ul style="list-style-type: none"> ▪ water and/or suppressants ▪ sufficient coverage by sprays Covering <ul style="list-style-type: none"> ▪ below ground or covered stock bins ▪ dust covers ▪ housing
Crushing, grinding, screening and separation	Containment Dust arrestment Suppression Appropriate siting - away from site boundary especially if near residential or other sensitive receptors
Conveyors, conveyor transfer points	Containment <ul style="list-style-type: none"> ▪ wind boards Appropriate siting - away from site boundary especially if near residential or other sensitive receptors
Roadways including haulage roads	Suppression <ul style="list-style-type: none"> ▪ appropriate siting and process design
External operations <ul style="list-style-type: none"> ▪ conveyors ▪ stockpiles ▪ roadways 	Appropriate siting - away from site boundary especially if near residential or other sensitive receptors Wind dynamics management <ul style="list-style-type: none"> ▪ use of fencing, bunding, profiling etc.

Vehicles - bodies and wheels	Wheel-wash Exhausts that do not point vertically down
Asbestos	Exclude from feedstock

Techniques to control emissions from contained sources

- 5.2 The crushing, grinding and screening plant and the stockpiles of crushed material should be designed, set up and operated in such a way that any substances released have the minimum impact on the environment and people. The operator should have reviewed all available techniques, and be able to demonstrate that the selection of process equipment and dust control strategies represent BAT. In addition to technical and technological means the use of BAT should incorporate adequate training of site operatives and supervision of the process.
- 5.3 Best available techniques are required to control dust emissions, for example from reception and storage of potentially dusty materials, internal transportation (whether in vehicles, front loaders or on conveyors), size reduction operations, stockpiles, loading and unloading. Also other potential fugitive emissions, such as roads and other surfaces, need to be controlled. The layout, design, construction and maintenance of the process equipment is extremely important to control of emissions and require the attention of experienced, competent personnel.
- 5.4 The main principles for preventing dust emissions are containment of dusty processes and suppression of dust using water. Suppression techniques need to be properly designed, used and maintained, in order to be effective. For example:,
- where water is used for dust suppression, processes require an adequate supply of water and all water suppression systems need adequate frost protection.

For information, the Health Protection Agency recommends consultation with the HSE where water temperatures exceed 20°C see HSE guidance on [the control of legionella bacteria in water systems](#).

For information, in England and Wales, discharges from the use of water suppression will be subject to Environment Agency regulation under groundwater provisions of the Environmental Permitting Regulations 2010.

- 5.5 Asbestos should not be crushed or screened.
- Asbestos should not be crushed or screened

Stockpiles and ground storage

- 5.6 Consideration should be given to the siting of potentially dusty stockpiles, based upon such factors as the prevailing winds, proximity of neighbours to the site boundary and site operations. Minimisation of drop height is very important in stockpiling to reduce wind whipping of particulates. Wherever possible, loading/unloading should take place at sheltered points around the stockpile to prevent entrainment of dust in the wind.

- 5.7 When necessary to control dust emissions from stockpiles, methods such as limiting the height of stockpiles or using dust suppressants may be used. Other possible controls include wind-breaks on stock piles, bunding or fencing around the pile and strategic arrangement of stockpiles. Periodic conditioning with water, according to weather conditions, may be an appropriate measure. Installation of fixed water sprays should be considered for long term stocking areas if appropriate given the nature of the material stored. If necessary, covers or dust suppressants should be used.
- Loading to and from stockpiles, and construction and management of stockpiles should be carried out in such a manner as to minimise wind-borne dust, e.g. taking place at sheltered points.
 - No material should be stored in the open except for:
 - material that has been screened to remove material 3 mm and under;
 - sand;
 - scalpings;
 - material used for road sub-bases (commonly known as "MOT material", or "type 1" or "type 2" material) that has been conditioned before deposition;
 - crusher run material that has been conditioned before deposition;
 - material under 3 mm where the volume is in excess of the internal storage capacity (the internal storage capacity should be approved by the local enforcing authority).
 - Where the only practicable option for the storage of material under 3mm is external stockpiles, particularly careful consideration should be given to the guidance outlined in this guidance note.
 - Storage areas where there is vehicular movement should either have a consolidated surface which should be kept clean and in good repair, or should be kept wet. 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.
 - To control dust emissions from stockpiles, storage bays should be used. If necessary, covers or dust suppressants should be used.
 - When using storage bays, storage height should be lower than external walls of the bays unless suppression is provided to control emissions. Stock should not be piled forward of the bay.
 - Where dusty materials are stored, stockpiles should be wetted where necessary to minimise dust emissions. Fixed water sprays should be installed for long term stocking areas if appropriate.
 - Conditioning with water or proprietary conditioning agents should take place at or before the point of discharge from the conveyor.
 - Stockpiles should be suitably profiled and conditioned with water or proprietary conditioning agents, according to weather conditions.

- All processed materials that have not been screened to remove material under 3mm should be conditioned with water or proprietary conditioning agents at or before the point of discharge onto the stockpile.
- Storage areas should be kept in a condition that does not give rise to visible dust emissions.
- Unused stocking areas should also be controlled to prevent visible dust emissions.

Process operations

Crusher processes

- 5.8 The control of dust emissions from these processes is mainly by the use of suppression and appropriate siting of equipment. Crushers can be inter-linked with water flow detectors so that they cannot operate unless a water supply is operational. High pressure, low volume water sprays over the feed area should provide adequate dust control if operated correctly.
- 5.9 Where the pressure of the water on site is not adequate to maintain the dust suppression then extra pumps can be used to increase the water pressure. Extra pumps can sometimes be necessary both in the event that water is delivered by bowser and where it is delivered by mains supply. (Some sites used retired fire engines)
- 5.10 Material with inherent moisture greater than 3%, e.g. sand or gravel, would not be expected to give rise to emissions of dust, so the following controls would probably not be necessary when such materials are being handled. In winter materials may not require the same degree of suppression in order to achieve the emission limits.
- 5.11 It is unlikely that screens give rise to significant quantities of airborne dust as the top screen handles larger material and the lower screens handling the finer material are enclosed. Materials should be deposited carefully onto screens to minimise dust emissions.
- 5.12 Total containment might be an option. Crushers should be totally contained or fitted with a water suppression system over the crusher aperture. In air quality management areas declared for particulate matter, containment may be needed
- Crushers should be totally contained or fitted with a water suppression system over the crusher aperture.
 - Where the use of water as a method of dust suppression is necessary in order to meet the emission limits, it should be used. In such circumstances, if water of the required pressure is not available for use on the suppression system, then the process should not operate.
 - Where water suppression does not provide adequate dust control to comply with the emission limits then the process should be carried

out under cover. If necessary dust extraction and arrestment should be employed.

- If dust extraction and arrestment plant is required to meet the emission limits then this should be operational.
- The discharge from crushers and screens onto conveyors or into other equipment should be enclosed as far as is practicable.
- Deposits of dust on external parts of the plant should be cleaned off at the end of each working day in order to minimise the potential for wind entrainment.

Techniques to control fugitive emissions

- 5.13 Fugitive dust emissions should be prevented whenever practicable. When this is not practicable emissions should be controlled at source by measures agreed between the regulator and the operator. Examples include correct storage of raw materials, organising the process in such a way that spillage is avoided, and maintaining high standards of housekeeping. Attention should be paid to preventing and cleaning up deposits of dust on external support structures, in order to minimise wind entrainment of deposited dust.

Conveying

- 5.14 All new conveyors should be designed to minimise dust emissions at discharge points. If material has already been screened to remove material under 3mm size then it might not be considered as dusty. Operational experience on site would enable decisions to be made with regard to the dustiness of conveyed material. In any case, equipment should be available to enable operations to comply with the authorised emission limits. Regard should be had to how material cleaned from conveyors is dealt with.
- Conveyors should be of sufficient capacity to handle maximum loads without spillage.
 - Where dusty materials are conveyed, the conveyor and any transfer points should be provided with adequate protection against wind whipping.
 - The conveyors should be fitted with means for keeping the belt clean.
 - Where chevron belts are used, water or air scrapers should be fitted to contain dust falling from the underside of the belt at the turning point.
 - Conveyor belts should not be overloaded.
 - Where the design of the conveyor allows free fall of material to occur, techniques should be used at the point of discharge to minimise this, for example the use of a chute or similar equipment.
 - Where water is available it should be used at conveyor discharge points for dust suppression. (This may not be necessary where the material has already been screened to remove material under 3mm size.)

- The last metre of any final size discharge conveyor or stockpile discharge conveyor and the first 0.5 metre of the free fall of materials from conveyors carrying material of a consistent size and shape, should be fitted with a full hood. (The hood ensures that the application of water from spray bars at this point is most effective.)

Loading/unloading

5.15 The principle is that loading and unloading processes should be carried out so as to minimise the generation of airborne dust.

- Vehicles should be loaded in such a way as to minimise airborne dust emissions, for example by loading with wet materials, or by using a load out area protected by enclosure or a dust suppression system.
- The vehicle should be sheeted or otherwise totally enclosed as soon as possible after loading and before leaving the site. This need not be applied to the loading of crushed material greater than 75 mm.

Roadways and Transportation

5.16 Transport of dusty materials should be carried out so as to prevent or minimise airborne dust emissions. When setting up on a new site, consideration should be given to a site layout minimising vehicle movement. It is preferable that potentially dusty material being delivered to the site should be sheeted or held in closed containers before being admitted to the site.

5.17 On some sites wheel-cleaning facilities may be useful to prevent dust being carried off the site. Where necessary they should be provided and used by vehicles before leaving the site. Where the plant is co-located with a quarry which is not a prescribed process, it may not be appropriate.

- (Where necessary) Wheel-cleaning facilities should be provided and used by vehicles before leaving the site.
- Processed materials likely to generate dust should be conditioned with water prior to internal transfer.
- Roadways in normal use and any other area where there is regular movement of vehicles should have a consolidated surface capable of being cleaned. They should be kept clean in order to prevent or minimise dust emissions. They should be kept in good repair.

Air Quality

Ambient air quality management.

- 5.18 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. 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.”

- 5.19 In the context of this note (PG3/16) there may be cases where, for air quality reasons, enclosure of the crushing, screening and loading of materials is considered in a particular location to amount to BAT.

Management

Management techniques

- 5.20 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

- 5.21 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.
- 5.22 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 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 [England and Wales](#), [Scotland](#) and [Northern Ireland](#).

Training

- 5.23 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

5.24 Mineral dust is very abrasive, so effective preventative maintenance plays a key part in achieving compliance with emission limits and other provisions. In particular:

- The operator should have the following available for inspection by the regulator:
 - a written maintenance programme for the crusher and screens;
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.

Table 6.1 - Summary of changes			
Section/ paragraph/ row	Change	Reason	Comment
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			
Control techniques			
Air Quality	Additional text on enclosure	may be needed for air quality reasons	Unlikely even in air quality management areas declared for particulate matter
Application form and simple permit			
	added	To speed applications and permitting	

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.

For the sector covered by this PG note, it is suggested that operators look particularly at:

- [WRAP: Halving Waste to Landfill](#)

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 or those who may be harmed by the work activity;
- 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 (Part B or C in NI) 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 crushing and screening brick tile and concrete in mobile plant

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 mobile plant crushing and screening brick tile and concrete 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 **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.*

--

A2 **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:

A3 **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, overleaf.

No Yes

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

A4 **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: _____

C3 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: _____

C4 Do you have environmental management procedures and policy?

[informs condition 14]

Yes No

Is the environmental system certified, (including EMAS, ISO 14001 or BS8555)

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:

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 mobile crushing and screening plant – see para 1.6 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 mobile plant ('the operator')
Registered number and office of company (if appropriate)

Activity description

Serial numbers	Plant type

The operator (A) is authorised to operate the activity⁴ in England and Wales, subject to the following conditions.

Conditions

Asbestos

1. Asbestos shall not be crushed or screened.

Notifications

2. The operator shall, before the mobile plant is operated, notify the regulator of the site where the mobile plant is to be operated, and the regulator who issued the permit:
 - a. where and when the mobile plant is expected to start operating, and
 - b. the serial numbers of the mobile plant involved.
3. *(where an operator holds a permit with a list of mobile plant that is permitted but requires activation before items of plant are operated)* The operator shall submit to the regulator who issued the permit any changes to the list of permitted plant. The plant new to the list shall not be used until the regulator has approved the alteration to the list of permitted plant.

Emissions and monitoring

4. No visible particulate matter shall be emitted beyond the installation boundary.
5. The emission requirements and methods and frequency of monitoring set out in Table 1 shall be complied with.

⁴ listed in [] in Part 2 of Schedule 1 to the Environmental Permitting Regulations
PG 3/16 Publication version

6. All plant and equipment capable of causing, or preventing, emissions shall be maintained in accordance with the manufacturer's instructions. *Records shall be kept of such maintenance.*

Aggregates delivery and storage

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.

Crushers and screening units

8. Crushers shall be totally contained or fitted with a water suppression system over the crusher aperture
9. Where the use of water as a method of dust suppression is necessary in order to meet the emission limits, it shall be used. In such circumstances, if water of the required pressure is not available for use on the suppression system, then the process shall not operate.
10. Deposits of dust on external parts of the plant shall be cleaned off at the end of each working day in order to minimise the potential for wind entrainment.
11. Processed materials likely to generate dust shall be conditioned with water prior to internal transfer.

Belt conveying

12. 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

13. 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].

Roadways and transportation

14. 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, or shall be kept wet. Quarry haul roads are excluded from this provision.
15. Vehicles shall not track material from the site onto the highway.

Records and training

16. 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 emissions.*
17. 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

- 18. 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.
- 19. 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				
Substance	Source	Emission limit/ provisions	Type of monitoring	Monitoring frequency
Particulate matter	Whole process	Avoidance of visible emissions crossing the (construction) site boundary	Recorded operator observations	On start up and on at least two more occasions each day
smoke	engines	No visible smoke during normal operation	*Recorded operator observations	*On start up and on at least two more occasions each day

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](#).