



POLLUTION PREVENTION AND CONTROL ACT 1999
POLLUTION PREVENTION AND CONTROL (ENGLAND AND WALES) REGULATIONS 2000

PERMIT OF PROCESS

THIS IS TO CERTIFY THAT **the process of blending, packing and loading of bulk cement**

at: **Cemex Materials Eastern, land off Messenger Close, Bishop Meadow Road Industrial Estate, Loughborough**
National Grid Ref: SK 521 213

(The site location is shown on Appendix 1/111 which forms part of this Permit)

has been duly permitted in accordance with Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 subject to the conditions outlined in this document.

Name of Operator: CEMEX MATERIALS EASTERN
Registered Office CEMEX MATERIALS LTD, CEMEX HOUSE, COLDHARBOUR LANE, EGHAM, SURREY, TW20 8TD

This Permit shall apply only to the premises occupied by the applicant, as specified and described in the Application for Permit submitted to the Borough of Charnwood. This Permit, consisting of 14 pages, shall be subject to replacement, variation or amendment, as may be considered appropriate by the Borough of Charnwood at any time, according to provisions of Regulations 12, 15, and 17 of the Pollution Prevention and Control (England and Wales) Regulations 2000

The conditions contained herein shall apply from the date of Permit unless otherwise stated.

Signed on behalf of Charnwood Borough Council

Beverley Green, Specialist Environmental Health Officer
 (the delegated officer for the purpose)

Counter-signed Dated.....23 February 2006

Ann Green, Specialist Environmental Health Officer
 Environmental Protection ,Charnwood Borough Council, Southfields Road, Loughborough LE11 2TX

**CEMEX MATERIALS EASTERN
LAND OFF MESSENGER CLOSE, BISHOP MEADOW ROAD INDUSTRIAL
ESTATE, LOUGHBOROUGH**

1.0 Process Description

1.1 Purpose

The process involves the blending of cement and using cement in bulk for the batching of ready-mixed concrete.

This process is included in Schedule I, Chapter 3, Section 3.1, Part B of the Pollution Prevention and Control (England and Wales) Regulations 2000.

1.2 Principal Emissions

The emissions are particulate matter (cement dust, aggregate dust) arising from the use of the following raw materials:

- 1) Washed gravel or coarse and fine aggregate including granite materials.
- 2) Cement including
 - Ordinary Portland Cement (OPC)
 - Sulphate Resisting Cement (SRC)
 - White Cement
 - Pre-Blended PFA/PC
 - Pre Blended GGBFS/PC
- 3) Ground Granulated Blast Furnace Slag (GGBFS)
- 4) Pulverised Fuel Ash (PFA)
- 5) Lime

1.3 Plant Details

- a) Batch control cabin
 - b) Below ground aggregate receiving hopper
 - c) Aggregate feed conveyor to storage bins
 - d) Aggregate storage bins of 260 tonnes capacity
 - e) Track/plant mixer wash reclaimer and storage bay
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- f) Lime/cement/ash storage silo
- g) Cement and aggregate weigh hopper
- h) Mixing unit
- i) Slurry re-circulatory system
- j) Loading chute

1.4 **Plant Operation**

Aggregate materials are delivered to the site by heavy goods vehicles and fed direct to the appropriate compartment of the enclosed overhead storage bins via the below-ground level feed hopper and inclined conveyor. The aggregates are delivered graded, and ready for use in the plant; no additional crushing or processing is necessary.

The overhead storage bins hold 260 tonnes of aggregate materials, are fully enclosed and are situated above the weigh hopper. Sand is delivered damp and other aggregates sprayed with water to prevent the generation of dust. Pigments used in the manufacture of ready-mixed mortar are delivered to site in sealed bags and stored in an allocated area prior to use. The receiving hopper is fitted with a sprinkler system which is activated by the delivery tipper body being raised.

Cementitious materials are delivered to the site in bulk tankers and transferred pneumatically, powered by a compressor on the tanker, to enclosed storage silos via flexible hosing, using sealed couplings. The silos are fitted with reverse air jet filters, high level visual and audible alarms and dead-weight pressure relief valves. The internal transfer of cementitious material from the silos to the weigh hopper is totally enclosed within the plant building and is by a combination of gravity and screw feed.

From the weigh hopper the cementitious material and aggregate is screw fed into the pan mixer when water is added. The mixer is loaded in such a way as to minimise dust. This includes the simultaneous delivery of water, before, during and after the loading of cementitious material and aggregates. No 'dry leg' mixing of materials takes place. When blended, the concrete/mortar is discharged into truck mixers or tippers directly below the mixer unit.

Wastes are generated at the site through returned concrete and the washing of truck mixers and the mixer unit. Residual materials are washed from the mixers at the end of the working day into the aggregate reclamation and water system. Cement slurry is reused within the concrete batching plant and aggregates are utilised as a raw material. Any material which cannot be reused is dried and removed from site for disposal at an appropriately licensed landfill site.

The yard area is surfaced and fitted with an automatic dust suppression sprinkler system. The water from this operation is collected by an oil and grit interceptor and is pumped back into the system for re-use. The spray operates on a timing device.

Each silo is equipped with an Airmaster reverse jet RJC S18/1/36 filter and high level visual and audible alarms and dead-weight pressure relief valves.

2.0 Emission Limits

- 2.1 All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist.
- 2.2 All emissions to air shall be free from persistent fume and free from droplets.
- 2.3 No visible emissions of dust shall be noticeable across the site boundary.
- 2.4 The silo filtration plant shall be designed to operate to an emission standard of less than 10mg/m³ for particulate matter.
- 2.5 The design criteria for the silo filtration plant shall be provided for inspection to the authorised officer of Charnwood Borough Council.
- 2.6 The silo filtration plant shall be operated and maintained to ensure the emission limit is met.
- 2.7 No emissions of dust shall be visible during cement deliveries.

3.0 Visible Emissions and Monitoring

- 3.1 Regular visual assessments of emissions of cement and cementitious powers shall be made on a random basis, at least daily, by the operator. The visual assessment shall be made having regard to the piece(s) of plant or equipment in operation at the time and should include cement silos loading points, aggregate conveyor and aggregate storage bins. The results shall be recorded in a log book required by condition 3.4. In addition, visual assessment of dust emissions from the cement silos shall be carried out during the discharge of cement from delivery tanks into the cement silos.
- 3.2 Visual assessment of emissions shall be undertaken throughout the duration of bulk deliveries. The start and finish times of all deliveries shall be recorded in the log book required by condition 3.4.
- 3.3 When any visible escape of dust is observed or when any malfunction or breakdown likely to lead to an escape of dust is found, then:-
- a) An immediate investigation shall be carried out
 - b) Prompt corrective action shall be taken
 - c) The observation, finding, result of the investigation and action(s) taken under heading b) and d) in this condition shall be entered in the log required by condition 3.4.
 - d) If corrective action is not immediately effective then action to mitigate any effects shall be taken.
- 3.4 All inspections and assessments shall be recorded in a log book on a daily basis. Details of visual assessments shall include the following information when a visible emissions to atmosphere is apparent:-
- i) Date of observation
 - ii) Time of observation
 - iii) Wind direction
 - iv) Weather conditions
 - v) Position of observation
 - vi) Assessment
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vii) Identification of observed plant

Where the assessment is that there are no visible emissions, items iii), iv) and v) need not be recorded.

The log book must be retained by the operator for a minimum of two (2) years and made available for examination by the Local Authority

3.5 All audible and/or visual high level warning alarms fitted to silos shall be checked on a weekly basis by a designated and competent member of staff.

3.6 Details of all checks and inspections of the high level warning alarms and indicators attached to the silos shall be recorded in the log book (required under condition 3.4) on the day of inspection. These details shall include for each silo's system:-

- i) Date of the inspection
- ii) Time of the inspection
- iii) Name of the persons carrying out the check
- iv) Description of any defects noted.
- v) Suggested further action

3.7 The reverse air jet filters shall be inspected at least once a month by the Plant Supervisor and mechanically checked on a six-monthly basis by a qualified maintenance fitter. If defects are detected, corrective action shall be taken promptly and wherever possible before another delivery occurs. The operator shall record in the log book (required by condition 3.4) all cases where deliveries are made prior to corrective action being taken

3.8 Details of all maintenance work carried out on the filters shall be kept in a log and shall include the following details:-

- a. Date
- b. Description of work undertaken
- c. Name of operative carrying out maintenance work

3.9 A list of key arrestment plant and a written procedure for dealing with its failure shall be provided to the regulator.

Abnormal Events

- 3.10 Any malfunction or breakdown leading to abnormal emissions shall be dealt with promptly and process operations adjusted until normal operations can be restored.
- 3.11 All malfunction or any breakdown leading to abnormal emissions to atmosphere shall be recorded in the log book (required under condition 3.4.)
- 3.12 For all malfunctions or any breakdown leading to abnormal emissions likely to have an effect on the local community the Local Authority shall be informed without delay.
- 3.13 Failure of any part of the reverse-air jet filter system of any silo shall be notified to the Local Authority immediately.

4.0 Materials Handling**Silos**

- 4.1 Bulk cement and all other cementitious materials held on site shall be stored in silos.
- 4.2 All silos shall be vented to suitable arrestment plant. Suitable plant is deemed to be an Airmaster reverse air jet RJC S18/1/36 filter to each silo.
- 4.3 Each storage silo shall be equipped with visual and audible high level alarms or volume indicators to warn of overfilling. The correct operation of such devices shall be checked weekly or before each delivery, whichever is the longer interval.
- 4.4 The transfer of cement other than delivery to silo storage shall be from silos by:-
A fully enclosed mechanical screw feed conveyor into a cement weigh-hopper.
And from weigh-hoppers by screw feed into the pan mixer.
- 4.5 Seating of pressure relief valves on the silos shall be checked at least once a week or before a delivery takes place whichever is the larger interval. Immediately it appears that the valves may have become unseated, the delivery must cease and no further delivery should take place. The valve should be examined and reset if necessary. Tanker drivers should be informed of the correct procedure to be followed.
- 4.6 All silos shall be fitted with an automatic system to cut off delivery in the event of pressurisation or over-filling.
- 4.7 If emissions of particulate matter are visible from ducting, pipe-work, the pressure relief device or dust arrestment plant during silo filling, the operation shall cease, and the cause of the problem rectified prior to further deliveries taking place. Tanker drivers should be informed of the correct procedure to be followed.

Cement Deliveries

- 4.8 The connection of transfer lines to the tanker discharge point and silo delivery inlet point shall be checked before the transfer of cement commences. The transfer of cement shall only commence once it has been established that the connection to these points will prevent the emission of cement dust. Any emission occurring from the transfer line shall be recorded in the log as detailed in condition 3.4.
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All silos shall be fitted with an automatic system to cut off delivery in the event of pressurisation on over-filling.

- 4.9 During delivery from tankers, the venting of air to the silos shall be at a limited rate to avoid over-pressurisation of the silos. Particular care shall be taken at the end of deliveries. Only tankers with sufficient valve work to allow gradual release and controlled venting shall be used.
- 4.10 Deliveries from road vehicles to silos shall only be made using tankers fitted with an on-board (truck mounted) relief valve and filtration system – such that venting air from the tanker at the end of a delivery will not take place through the silo. **This condition shall be complied with by June 2007**

Stockpiles and Aggregate Storage

- 4.11 Waste material shall be stored in a stockpile before removal from site. The stockpile shall be stored in a three-sided storage bay. Waste shall not be piled higher than the external wall of the bay and shall not be forward of the bay.
- 4.12 The main feed conveyors for aggregates into the concrete plant shall be :-
- a) Of sufficient capacity to handle maximum loads
 - b) Provided with protection against wind-whipping.
 - c) Arranged to minimise free-fall at all times
 - d) Be fully enclosed within the cladded structure
- 4.13 Aggregate delivered to the site shall be sprayed with water if necessary to prevent the generation of dust.
- 4.14 Aggregate shall be managed to prevent overfilling of storage facilities.
- 4.15 The aggregate storage bins shall be fully enclosed, other than where the conveyor passes through the restricted aperture.
- 4.16 The aggregate receptor hopper shall be fitted with plastic sheeting to the front face to prevent emissions of dust.
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- 4.17 The aggregate reception hopper shall be fitted with a wet suppression system, such as an atomising spray in the hood.

Loading of truck mixers

- 4.18 Truck mixers shall be loaded in such a way as to prevent or minimise airborne dust emissions. The final discharge point will be via a flexible sock. This shall be maintained in good working order.
- 4.19 Truck mixers shall be loaded with wet pre-mixed materials only. No dry materials will be batched.
- 4.20 Truck mixers shall be cleaned using water and discharged into the reclaimer for recycling.

Fugitive Emissions

- 4.21 The pan mixer shall be fitted with dust arrestment plant, such as a bag filter.
- 4.22 A high standard of housekeeping shall be maintained.
- 4.23 All spillages which may give rise to dust emissions shall be cleaned up promptly, normally by wet handling. Dry handling of dusty spillages shall not be permitted unless within a fully enclosed building.
- 4.24 Major spillages shall be dealt with on the day on which they occur. Measures to minimise emissions such as dampening the surface to create a crust shall be taken immediately.

Roadways

- 4.25 Roadways in normal use and any other area where there is regular movement of vehicles, shall be hard-surfaced and kept clean in order to prevent or minimise dust emissions.
- 4.26 Hard surfacing shall comprise compacted stone chippings, Macadam or concrete. Roadways shall be kept in good repair.
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5.0 Management and Training

- 5.1 Essential spares and consumables shall be held in stock for all plant and the equipment concerned with the control of emissions to the air.
- 5.2 Staff at all levels shall receive proper training and instruction in their duties relating to control of the process and emissions to air. Particular emphasis shall be given to training for start-up, shut-down and abnormal conditions.

A record of training for each of those identified personnel shall be kept and made available to the authorised officer of Charnwood Borough Council on request.

- 5.3 A written maintenance programme shall be kept to include regular cleaning of process buildings and maintenance of conveyors. A record of the maintenance undertaken shall be kept and be made available for inspection.

EXPLANATORY NOTES

These notes do not comprise part of Permit Serial No.111 but contain guidance relevant to the Permit.

1. You should note that Regulation 12(10) of the Regulations provides that in relation to any aspect of the process not regulated by conditions 2.1 to 5.3 the best available techniques ('BAT') shall be used for the purpose of preventing or, where that is not practicable, reducing emissions into the air.

Section 3(1) of the Regulations describes 'BAT' as meaning the most effective and advanced stage in the development of activities and their methods of operation which indicates the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole.

2. This Permit is issued under the Pollution Prevention and Control (England and Wales) Regulations 2000. The responsibility you have under legislation for Health, Safety and Welfare in the workplace remains in force. In addition, the Permit does not relieve you of your obligations to obtain planning permission, hazardous substances consent, discharge consent from the Environment Agency, Building Regulations approval, or a Waste Disposal licence.
3. Any proposed 'change in operation' in the process (within the meaning of Regulation 2(1)) shall be notified to Charnwood Borough Council as required by Section 16(1) of the Regulations.