

Appendix 4



**A GUIDANCE NOTE ON THE
BEST PRACTICABLE MEANS**

FOR

CEMENT WORKS

(CEMENT DEPOT)

BPM 3/1

Environmental Protection Department

November 1993

1. INTRODUCTION

This note lists the minimum requirements for meeting the best practicable means for Cement Works (Cement Depot). It should be noted that in granting a licence under the Ordinance, the Authority, i.e., the Director of Environmental Protection, will also consider all other relevant aspects and may impose more stringent and/or additional control requirements by taking into account individual process characteristics, local topography and air quality and any other factors.

2. EXHAUST FROM DUST ARRESTMENT PLANT

Wherever possible the final discharge point from particulate matter arrestment plant, where it is not necessary to achieve dispersion of the residual pollutants, should be at low level to minimise the effect on the local community in case of abnormal emissions and to facilitate maintenance and inspection.

3. EMISSION LIMITS

All emissions to air, other than steam or water vapour, shall be colourless and free from persistent mist or smoke.

Particulates : 50 mg/m³

(All figures are expressed at reference condition, 0°C, 101.325 kilopascals, without correction for water vapour content. The introduction of dilution air to achieve the emission concentration limits shall not be permitted.)

4. FUGITIVE EMISSION CONTROL

(a) Boundary Ambient Standards

Total suspended particulates : 260µg/m³ (24 hour average)

Respirable suspended particulates : 180µg/m³ (24 hour average)

Odour : 2 odour units

(Note : An odour unit is the measuring unit of odour level and is analogous to pollution concentration. In this context, the odour level is defined as the ratio of the volume which the sample would occupy when diluted with air to the odour threshold, to the volume of the sample. In other words, one odour unit is the concentration of odorant which just induces an odour sensation.)

(b) Engineering Design/Technical Requirements

To be agreed with the Authority. As a general guidance, the loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner acceptable to the Authority so as to prevent the release of:-

- (i) visible dust emission; and/or
- (ii) other noxious or offensive emissions.

Without prejudice to the generality of the above general requirements, the following control measures shall be implemented:-

Cement and other dusty materials

- (1) The loading, unloading, handling, transfer or storage of cement, pulverised fuel ash and/or other dusty materials shall be carried in a totally enclosed system acceptable to the Authority. All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the particulate limit stipulated in the Section 3 above.
- (2) Cement, pulverised fuel ash (PFA) and/or other equally dusty materials shall be stored in storage silo fitted with audible high level alarms to warn of overfilling. The high-level alarm indicators shall be interlocked with the material filling line such that in the event of the silo approaching an overfilling condition, an audible alarm will operate, and after 1 minute or less the material filling line will be closed.
- (3) Vents of all silos shall be fitted with fabric filtering system to meet the particulate limit stipulated in the Section 3 above.
- (4) Seating of pressure relief valves of all silos shall be checked, and the valves resealed if necessary, before each delivery.

Vehicles

- (5) All practicable measures shall be taken to prevent or minimise the dust emission caused by vehicle movement.
- (6) All access and route roads within the premises shall be paved and adequately wetted.
- (7) Vehicle cleaning facilities shall be provided and used by all vehicles leaving the premises to wash off any dust and/or mud deposited on the wheels and/or vehicle body.

Housekeeping

- (8) A high standard of housekeeping shall be maintained. All spillages or deposits of materials on ground, support structures or roofs shall be cleaned up promptly by a cleaning method acceptable to the Authority. Any dumping of materials at open area shall be prohibited.

5. MONITORING REQUIREMENTS

Parameters and sampling frequency will be determined by the Authority. However, the following parameters should be monitored as specified below:-

(a) Process Monitoring

Total monthly raw input, product output and material stock (by manual recording), and other essential operating parameter(s) which may significantly affect the emission of air pollutants.

(b) Ambient Monitoring

At site boundary and/or any other locations acceptable to the Authority : Total suspended particulates and/or respirable suspended particulates (at least one 24-hour sample per 6 calendar days) ;

6. COMMISSIONING

Commissioning trials (to be witnessed by the Authority whenever appropriate) should be conducted to demonstrate performance and capability of the air pollution control measures and a report of commissioning trial should be submitted to the Authority within 1 month after completion of the trial.

7. OPERATION AND MAINTENANCE

Requirements include not only the provision of the appliances, but the proper operation and maintenance of equipment, its supervision when in use and the training and supervision of properly qualified staff. Specific operation and maintenance requirements may be specified for individual equipment.

Malfunctioning and breakdown of the process or air pollution control equipment which would cause exceedance of the emission limits or breaches of other air pollution control requirements should be reported to the Authority within 3 working days.