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THE ENVIRONMENTAL MANAGEMENT AND CO-
ORDINATION ACT

(Cap. 387)

THE ENVIRONMENTAL MANAGEMENT AND CO-
ORDINATION (AIR QUALITY) REGULATIONS, 2024

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THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

(Cap. 387)

IN EXERCISE of the powers conferred by section 147 of the Environmental Management and Co-ordination Act, the Cabinet Secretary for Environment, Climate Change and Forestry makes the following Regulations—

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (AIR QUALITY) REGULATIONS, 2024

PART I—PRELIMINARY PROVISIONS

1. These Regulations may be cited as the Environmental Management and Co-ordination (Air Quality) Regulations, 2024. Citation.
2. In these Regulations, unless the context otherwise requires— Interpretation.

“aerosol” means suspension in a gaseous medium of solid particles, liquid particles or solid and liquid particles having a negligible falling velocity;

“air pollutant” means—

 - (a) any fume, smoke, particulate matter, vapour, gas, odorous substance or any combination thereof; or
 - (b) any other substance or matter whether physical, chemical, biological, or radioactive, including source material, special nuclear material, and by-product materials,

which is emitted into the atmosphere from any object or activity and causes, or, if unabated, may cause air pollution, but does not include water vapour, steam condensate or any other emission exempted under these Regulations;

“air pollution” means contamination of the indoor or outdoor environment by any physical, chemical or biological agent that modifies the natural characteristic of the atmosphere;

“air quality management plan” means a comprehensive integrated and interactive planning across a broad spectrum of air pollution control measures and pollutants among sectors in a defined geographic area;

“air quality” means the concentration prescribed under the Act of a pollutant in the atmosphere at the point of measurement’;

“air quality effect” means a series of observed relationships between air pollutants and their effects on health, welfare, vegetation, or property;

“air quality standard” means an air quality level as established by these Regulations setting a limit of contaminant levels in the atmosphere;

“ambient air” means the atmosphere surrounding the earth and does not include the atmosphere within a structure or within any underground space;

“ambient air quality standard” means the quality of the ambient air specified under these Regulations as being safe for human health;

“competent person” in relation to any duty or function, means a person who has adequate training, relevant qualifications and experience to enable him to perform that duty or function;

“controlled areas” means any area where ambient air quality standards are being or are likely to be exceeded or any other situation exists which is causing or is likely to cause a significant negative impact on human health, environment and national heritage and will therefore require a specific air quality management plan to rectify the situation designated as such in accordance with the Act;

“cyclone” means a separator that removes dust, grit or droplet utilizing centrifugal force derived from the motion of the gas;

“days” means working days exclusive of weekends and public holidays;

“dioxins” includes any of the chlorinated hydrocarbon compounds known chemically as dibenzo-p-dioxins, chlorinated dibenzofurans and certain polychlorinated biphenyls;

“electrostatic precipitator” means a device for removing particles from a gas stream;

“emission” means discharge of pollutants into the atmosphere from any source;

‘emission rate’ means mass or other physical quality of pollutant transferred into the atmosphere per unit time

“emission limits” means the permissible levels of emission of pollutants set out in these Regulations;

“equipment shut-down” means the process of taking a unit of equipment off-line from an operative condition such that normal production rates are not being achieved;

“equipment start-up” means the process of bringing a unit of equipment on-line from an inoperative condition such that normal production rates are being achieved;

“exposure limit” means the standards of exposure or discharge or emissions established under the Act or under these Regulations;

"excessive emission" means emission of an air pollutant in excess of an emission standard or emission target;

"existing facility" means any facility having an air pollutant source that is constructed, or in operation, installed or used in Kenya on or before the commencement of these Regulations;

"existing source" means an air pollutant source that is constructed, in operation, installed or in use in Kenya on or before the commencement of these Regulations;

"facility" means any building, structure, establishment, installation, plant, works or activity that emits an air pollutant;

“filter bag” means a fabric shaped to remove particles from a gas stream by filtration;

"fugitive emission" includes particulates from quarry operations, construction sites, demolitions, stockpiling of materials and emissions not caught by a capture system which are often due to equipment leaks, evaporative processes and windblown disturbances;

“fugitive emission control plan” means an operating programme that is specifically designed to significantly reduce the fugitive emissions to the lowest level for compliance with the ambient air quality standards;

“fume” means an aerosol of solid particles, usually from metallurgical processes, generated by condensation from the gaseous state, generally after volatilization from melted substances and often accompanied by chemical reactions such as oxidation;

"greenhouse gas" means gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation and includes gases listed under these Regulations;

“harmful substance” means any substance whether liquid, solid or gaseous which is hazardous or potentially hazardous to human or the environment and includes objectionable odours, radio-activity, and temperature;

“hydrocarbon” means any organic compound consisting predominantly of carbon and hydrogen;

“Internationally recognized emission standards” refers to a document, method, procedure, standard, rules or guidelines that have been developed through consensus of experts from different countries and is approved and published by a globally recognized body, applied worldwide and adopted by the Authority;

“improvement order” means the instructions to a proponent or operator issued in writing by the Authority requiring compliance with the provisions of the Act;

“incineration” means the process of controlled igniting and burning solid, semi-solid, liquid, or gaseous combustible waste at temperatures high enough for complete combustion;

"incinerator" means any equipment, device or contrivance used for the destruction, by controlled burning, of solids, semi-solid, liquids or gaseous combustible wastes;

“indoor air” means air within an enclosed space;

“Kenya Standard” means a standard developed or adopted by the Kenya Bureau of Standards;

“licence” means an air pollutant emission licence granted under these Regulations;

"licensee" means a person who is granted a licence under these Regulations;

"limit value" means level fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health or the environment as a whole or both, to be attained within a given period and not to be exceeded once attained;

"malfunction" means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, process or process equipment, to operate in a normal manner, but does not include any failure that is primarily caused by poor maintenance or negligent operation;

"mobile source" means a moving producer of air pollutant, mainly forms of transport including motorcycles, tricycles, cars, trucks, cranes, trains, locomotives, ships, tug boats and aircrafts;

"monitoring" means any periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements or pollutant levels in various media or in humans, animals, and other living things;

"nitrogen oxides" means the sum of nitric oxide and nitrogen dioxide expressed collectively as a nitrogen dioxide equivalent;

"non-point source" means a source of atmospheric emissions which cannot be identified as having emanated from a single identifiable source or fixed location, and includes bush, forest and open fires, mining activities, agricultural activities and stockpiles;

"occupational air quality" means the concentration prescribed under the Act of a substance or energy in the atmosphere within a structure or underground space in which human activities take place;

"odour panel" means group of people screened to have a normal level of odour sensitivity and are trained to assess odours;

"olfactometer" means a scientific device which is used to accurately dilute an odourous sample before it is presented to the panelist;

"opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background;

"owner" means any person who owns or operates a facility, source, or air pollution control equipment, as the case may be;

"ozone-depleting substance" means a substance having chemical or physical properties which, by its release into the atmosphere, can cause depletion of the stratospheric ozone layer;

"particulate matter" includes smog, aerosols, fly ash, black carbon, cinders, and other solid particles of any kind;

'particulates' means fine liquid or solid particles including dust, smoke, mist, fumes, or smog found in air or emissions;

"point source" means a single identifiable source and fixed location of atmospheric emission, and includes smoke stacks and chimneys;

“pollutant” includes any solid, liquid, vapour, gas or aerosol, or combination hereof that causes contamination of the indoor or outdoor environment;

“PM_{2.5}” means particulate matter with an aerodynamic diameter of less than or equal to a nominal 2.5 micrometers, as determined by the appropriate reference methods;

“PM₁₀” means finely divided solid or liquid material, with an aerodynamic diameter less than or equal to ten micrometers;

“Primary pollutant” means any air pollutant emitted directly from a source;

“priority pollutant” means an air pollutant specified in these Regulations;

“reference method” means any method of sampling, testing and measurement of air pollutants as specified in these Regulations;

“Ringlemann number” means value representing the darkness of a plume of smoke assessed by visual comparison with the Ringlemann Smoke Chart with a set of grids numbered from 0 (white) to 5 (black);

“Ringlemann Smoke Chart” means the chart published and described in the Relevant Kenya Standard, or any chart, recorder, indicator, or device for the measurement of smoke density which is approved by the Authority as the equivalent of the said Ringlemann Scale;

“scrubber” means device by which particulate or gaseous contaminants are removed from a gaseous stream by contact with or impingement on wet or dry surfaces, or by use of liquid sprays;

“smoke” means visible aerosol or small gas-borne particles resulting from incomplete combustion of materials, predominantly of carbon and other combustible material;

“stack” means a flue, chimney, conduit or other device constructed for the purpose of discharging air contaminants into the atmosphere;

“stack height” means the vertical distance measured in metres between the points of discharge from a stack into the atmosphere and the land thereunder as guided under Part XIV of the Fifth Schedule;

“stationary source” means any fixed building, structure, facility, installation, equipment or any motor vehicle, waterborne craft, aircraft or diesel locomotive deposited, parked, moored, or otherwise remaining temporarily in place, which emits or may emit any air pollutant;

“Standard conditions” means a temperature of 293° K (20°C) and a pressure of 101.3 kilopascals (29.92 in Hg);

“suspended particulate matter” means all particulate material which persists in the atmosphere or in flue gas stream for lengthy periods because the particles are too small in size to have appreciable

falling velocity;

“vehicle” means a motorcycle, a tricycle, cars, and trucks as defined in KS 1515 and KS EAS 1047;

“vehicle emission testing center” means any registered facility designated by the Authority for the purposes of testing motor vehicles on exhaust emissions;

‘volatile organic compounds’ means any organic compound with a boiling point of below 145°C which plays a role in atmospheric photochemical reactions.

3. The objective of these Regulations is to provide for the prevention, control and abatement of air pollution to ensure clean and healthy ambient air. Objective of the Regulations.

4. (1) These Regulations shall apply to— Application.

- (a) internal combustion engines; and
- (b) premises, places, processes, operations, or works to which the provisions of the Act and Regulations made thereunder apply.

(2) The provisions of these Regulations shall be in addition to other requirements imposed by or under the Act or any other written law.

(3) Notwithstanding subregulation (1), the following operations shall, subject to prior notification to the Authority, be permissible under these Regulations if they are not used for the disposal of waste and they are undertaken in accordance with the appropriate environmental and social safeguards—

- (a) back-burning to control or suppress wildfires;
- (b) firefighting rehearsals or drills conducted by fire service agencies;
- (c) traditional and cultural burning of savanna grasslands; and
- (d) emissions of air pollutants from all stationary and mobile sources as set out under Part I of the Fifth Schedule.

(4) Where, in relation to a particular air pollutant or air pollutant source, there are no emission standards, targets or guidelines as set out in these Regulations, the Authority may apply, subject to such modifications, if any, as the Authority may consider necessary, any internationally recognized emission standards, in relation to the air pollutant or air pollutant source.

PART II—GENERAL PROHIBITIONS

5. No person shall— Air pollution.

- (a) act in a way that directly or indirectly causes, or is likely to cause immediate or subsequent air pollution;
- (b) emit any liquid, solid or gaseous substance or deposit any such substance in levels exceeding those set out in the First

Schedule;

- (c) engage in open burning save for in the manner permitted by this Regulation and the Act; or
- (d) engage in spray painting save for in the manner permitted by this Regulation and the Act.

6. No person shall cause or allow emission of the priority air pollutants prescribed in the Second Schedule to cause the ambient air quality limits prescribed in the First Schedule to be exceeded.

Priority air pollutants.

7. No person shall cause the ambient air quality levels specified in the First Schedule of these Regulations to be exceeded.

Ambient air quality.

8. No person shall cause or allow particulate emissions into the atmosphere from any facility listed under the Fourth Schedule in excess of those limits stipulated under the Third Schedule.

Suspended particulate matter.

9. A person, being an owner of premises, who causes or allows the generation, from any source, of any odour which unreasonably interferes, or is likely to unreasonably interfere, with any other person's lawful use or enjoyment of his property shall ensure that the odour emission limit comply with the ambient air quality limit set out under the first schedule

Odour guidelines.

PART III—PERMISSIBLE LEVELS

10. (1) The Authority shall in consultation with relevant lead agencies, from time to time review the list of priority pollutants set out under the Second Schedule and the ambient air quality levels provided for in the First Schedule and prescribe the permissible levels thereof.

Review of priority pollutants.

(2) The Authority shall in setting limits for ambient air quality levels as stipulated in the First Schedule take into account the following limit determining factors—

- (a) degree of exposure of sectors of the population, and in particular sensitive sub-groups;
- (b) climatic conditions and meteorology;
- (c) sensitivity of flora and fauna and their habitats;
- (d) historic heritage exposed to pollutants;
- (e) transboundary movement; and
- (f) any other factor that may be considered by the Authority from time to time.

PART IV—CONTROLLED AREAS

11. The Cabinet Secretary may, on the advice of the Authority, declare an area as a controlled area.

Declaration of controlled areas.

12. (1) The Authority shall, within two months after the declaration of a controlled area under regulation 11, in consultation with the relevant lead agencies prepare an air quality management plan for the area and publish the same in the *Gazette*.

Air quality management plans.

- (2) An air quality management plan shall—
- (a) be aimed at coordinating air quality management in the area;
 - (b) address issues related to air quality in the area including source apportionment studies;
 - (c) contain air quality management system requirements;
 - (d) contain operational and functional structure requirements;
 - (e) contain source reduction alternatives which may be implemented.

(3) An air quality management plan may, for the purposes of implementation, provide for the establishment of an inter-agency/interdepartmental corporation in order to assure that actions are being taken.

(4) The declaration of a controlled area under regulation 11 may be withdrawn by the Cabinet Secretary with the advice of the Authority if the area is in compliance with ambient air quality standards for a period of at least three months or as may be deemed fit by the Authority.

(5) An air quality management plan shall lapse upon the withdrawal of the declaration of the controlled area under sub-regulation (4).

PART V—STATIONARY SOURCES

13. (1) No person, operating a controlled facility specified in the Fourteenth Schedule shall—

Emission control from listed facilities.

- (a) cause emission of any pollutant listed under the Second Schedule from any point sources without a valid emission licence issued in accordance with the provisions of the Act; or
- (b) cause emission of any air pollutant listed under the Second Schedule from any point sources in levels exceeding the limits set out under the Third Schedule.

(2) The Authority may require a facility not listed under the fourteenth schedule and which has been in operation for a period exceeding twelve months to apply for an emission license.

(3) The provisions of paragraph (1) (b) shall not apply to the start-up and shut-down of equipment in respect of which an emission licence has been issued under these Regulations.

14. No person, owner or operator of a facility shall cause or allow the emission of air pollutants in excess of the limits stipulated under the Third Schedule.

Emission standards.

15. (1) Every owner or operator of a facility shall use any appropriate pollution control system including but not limited to those listed in the seventh schedule, as shall ensure that their operations shall not cause the emission of pollutants in excess of limits set out in the

Air pollution control systems.

Third Schedule.

(2) Any waste or other by-product of a system referred to in paragraph (1) shall be disposed of or treated in accordance with regulations made in that respect under this Act.

(3) Every owner or operator of a combustion equipment shall employ appropriate emission reduction measures including but not limited to those set out under Part IV of the Fifth Schedule.

16. The owner or operator of a controlled facility shall ensure that exposure of workers to occupational air pollutants is monitored and recorded in accordance with the national law relating to occupational safety and health.

Exposure format report.

17. (1) A licensee shall report to the Authority any event resulting in an excess emission—

Excessive emissions.

(a) by giving a notice of such event, in Form II set out in the Ninth Schedule, within twenty-four hours after the occurrence of the event; and

(b) by delivering a written report to the Authority within seven days after the occurrence of the event, describing the circumstances surrounding the event and the corrective measures taken or planned to be taken to prevent future occurrence of the same.

(2) No owner or operator of fuel burning equipment shall cause or allow emissions of nitrogen oxide in excess of those stipulated in the Third Schedule.

18. (1) An owner or operator of the controlled facility shall submit a stack emission report as a requirement during the application for the emission licence once every twenty-four months unless otherwise directed by the Authority.

Stack emission reports.

(2) An emissions report shall contain information including but not limited to the matters set out in Part V of the Fifth Schedule.

19. No owner or operator of any facility shall cause or allow fugitive emissions to cause the ambient air quality at its property boundary to exceed the limits prescribed under the First Schedule.

Air quality at property boundaries.

20. (1) An Improvement Order may be issued upon an inspection where there is breach of any provision of these Regulations or of any term or condition of a licence.

Improvement orders.

(2) The owner or operator of a facility from which the fugitive emissions cause ambient air quality limits specified under the First Schedule to be exceeded, shall institute remedial measures recommended under Part VI of the Fifth Schedule.

(3) An Improvement Order shall—

(a) specify the breach in respect of which it is issued;

(b) specify the steps to be taken to mitigate the effects of the

breach;

- (c) specify the time within which the steps shall be taken; and
- (d) may, where appropriate, require the immediate cessation of the breach.

(4) Any person who fails to comply with the provisions of an improvement order issued under this regulation commits an offence and shall be liable on conviction to a fine not exceeding four million shillings or imprisonment for a term not exceeding four years or both such fine and imprisonment.

21. (1) The Authority may, as part of the requirements of an application for an emission licence for a controlled facility with a fugitive emission air pollutant source, or as part of a requirement of an improvement order require the applicant to submit a written fugitive emission control plan for the control of fugitive emissions, if—

Fugitive
emissions control
plans.

- (a) the facility has a fugitive emissions source operating with emissions in excess of twenty percent opacity as determined by methods prescribed under Part VII of the Fifth schedule of these Regulations;
- (b) the facility has a fugitive emissions source operating with visible emissions that are being transported off the boundary of the property on which the source is located; or
- (c) In relation to the facility, the ambient air quality standard for total suspended particulates or for PM_{2.5} and PM₁₀ specified in these Regulations is being exceeded at a location off the boundary of the property on which the source is located.

(2) The fugitive emission control plan shall contain information as prescribed by the Authority from time to time.

(3) The Authority shall review a fugitive emission control plan within thirty days of the receipt thereof, and shall, before the end of that period, notify the applicant as to whether the plan is approved, disapproved, or if further information is required.

(4) Where a fugitive emissions control plan is submitted as part of the requirements of a licence application, such plan shall be reviewed along with all other aspects of the application and all provisions relating to the time period for review of licence applications shall apply to the review of such plan.

(5) Where a fugitive emission control plan is disapproved, the notification of the disapproval of the plan shall—

- (a) be given to the licensee within twenty-one days, setting out the reasons thereof; and
- (b) inform the licensee that he is entitled to revise and resubmit the plan within thirty days of the date of delivery of such notification.

(6) If after the review of a resubmitted fugitive emission control

plan there remain aspects of the plan that are unsatisfactory to the Authority, the Authority may approve the plan subject to such terms, conditions or modifications as it thinks necessary in order to eliminate or mitigate the unsatisfactory aspects of the plan.

(7) Where a plan is made subject to any term, condition or modification under paragraph (6), the notification of the approval of the plan shall contain a written statement of the reasons for the term, condition or modification, as the case may be.

(8) The Authority may periodically review any fugitive emission control plan and may where the Authority deems necessary, require that a revised plan be submitted within sixty days after such request.

(9) For the purposes of this regulation, fugitive emission air pollutant sources shall include those indicated in Part VIII of the Fifth Schedule.

22. A fugitive emission control plan may require the employment of measures or operating procedures including but not limited to those indicated in Part VI of the Fifth Schedule.

Fugitive emissions reduction measures.

PART VI—MOBILE SOURCES

23. The Authority shall ensure that emissions from all internal combustion engines are monitored in accordance with the methods set out under Part II of the Eleventh Schedule.

Internal combustion engines.

24. (1) No person shall cause or allow the emission of visible air pollutants from a stationary vehicle, tri-cycle, motorcycle or any other internal combustion engine, in excess of the limits set out under the KS East African Standard 1047 air quality-vehicular exhaust emission limits and Kenyan Standard – Road vehicles –inspection of road vehicles 1515.

Vehicular emissions sources.

(2) Every operator or owner of a mobile emission source including road, rail, air, marine and inland water transport and conveyance equipment, shall control the emission of priority air pollutants set out in the Second Schedule.

25. (1) The Authority may at any time order emission testing of an internal combustion engines releasing visible exhaust emissions, including but not limited to motor vehicle.

Emissions testing.

(2) In performing its functions under paragraph (1), the Authority shall ensure that—

- (a) all commercial and public service vehicles undergo emission tests annually;
- (b) all private vehicles over five years old undergo emission tests once in every two years; and
- (c) trans-boundary movement of public and private vehicles shall adhere to this regulation.

(3) Every vehicle owner or operator shall ensure their vehicles

undergo emission testing at centers designated by the authority as prescribed in 2 above.

(4) All vessels shall undergo emission testing as stipulated under the International Convention for the Prevention of Pollution from Ships.

(5) All aircrafts shall undergo emissions testing as stipulated under the International Civil Aviation Organization.

(6) All locomotives shall undergo emissions testing as stipulated by the relevant guidelines.

(7) The Authority may in undertaking its functions under (1) and (2) designate qualified emission testing centres to undertake those functions on behalf of the Authority.

26. (1) The designation of an emission testing centre shall be made upon an application to be submitted to the Authority as per the prescribed form in the Eighth Schedule and accompanied by the fees set out in Thirteenth Schedule.

Emissions testing centres.

(2) An application to the Authority for designation shall be processed within thirty days from the date of receipt of the application.

(3) The Authority shall issue guidelines on the designation of emission testing centres.

(4) The authority shall prescribe the code of practice for the designated emission testing centres.

(5) The Authority shall keep a register of the designated emission testing centres which shall be reviewed annually.

27. (1) Every designated testing center shall be required to apply for an annual operational license from the Authority as per the prescribed Form under the Eighth Schedule accompanied by the prescribed processing and monitoring fee stipulated in the thirteenth schedule.

Operational licenses.

(2) A designated Vehicle Emission Testing Centre shall ensure that it has taken out an insurance cover against third-party risks that may arise from damage occasioned during emission testing.

28. The emissions from mobile sources shall be tested in accordance with the methods of tests under Part II of the Eleventh Schedule or any other approved method by the Authority.

Testing methods.

29. The emission limits for mobile sources shall be as stipulated under existing national, regional and internationally recognized emissions limits—

Certificate of compliance.

- (a) vehicular emissions limits shall be as stipulated under KS 1515 and EAS1047;
- (b) marine vessels emissions limits shall be as stipulated under MARPOL;
- (c) aircrafts emission limits shall be as stipulated under International Civil Aviation Organization guidelines; and

- (d) locomotives emissions limits shall be as stipulated under the relevant guidelines.

30. Every vehicle undergoing an emissions testing shall be required to pay to the Designated Emissions Testing Centre, the prescribed fees as provided under the Thirteenth schedule of this regulations.

31. (1) The Authority shall issue certificate of compliance for the mobile source that meets the emission limits.

(2) The Authority shall issue an improvement notice for non-compliant mobile sources and clearly stipulate the compliance period.

(3) Any mobile source that fails to meet the emission limits after emission re-testing shall be required to pay a pollution tax as prescribed in the Thirteenth schedule upon which a provisional compliance certificate will be issued.

(4) Any mobile source that fails to meet the emissions limits after the required or the prescribed servicing and maintenance procedures for a continuous period of five years, shall be declared environmentally unfit.

(5) Upon declaration of the mobile source as environmentally unfit the Authority shall notify the agency responsible for registration to deregister the mobile source.

(6) Upon deregistration the Authority shall order scrappage of the environmentally unfit mobile sources in line with the relevant legislation.

32. In order to meet the emission standards stipulated by the Authority the owner or operator of a mobile emission source may apply appropriate emission reduction measures.

Mobile source emission reduction measures.

33. No person shall cause or allow the dispersion of visible particulate matter from any material being transported by motor vehicle or by other mode of transportation. Any person who causes emissions contrary to the provisions of this regulation, commits an offence.

Dispersion of particulate matter.

PART VII—OCCUPATIONAL AIR QUALITY LIMITS

34. The occupier or operator of premises shall ensure that exposure of indoor air pollutants does not exceed the exposure limits stipulated under the national law on occupational safety and health.

Occupational exposure of air pollutants.

35. The Authority, in consultation with the relevant lead agencies may—

Variation of exposure levels.

- (a) prescribe exposure limits of air pollutants and emission levels of hazardous substances;
- (b) prohibit the use of substances which pollute the working environment; or
- (c) specify particular measures of prevention of pollution or protection of workers.

36. An owner or occupier of a controlled facility shall—
- Exposure to hazardous substances.
- (a) inform the workers of the hazards in specific work environments;
 - (b) train the workers on the potential hazards of any hazardous substance to which they are exposed and the safety precautions to be taken to prevent any harm to their health;
 - (c) ensure that measurements of pollutants are carried out by a laboratory designated by the Authority in order to determine compliance with the prevailing allowed levels of exposure;
 - (d) ensure that record of measurements carried out under paragraph (c) are reported to the relevant agency on a quarterly basis; and
 - (e) take exposure reduction measures recommended under Part IX of the Fifth Schedule.

PART VIII—OTHER SOURCES

37. No person operating construction equipment or handling construction material shall allow emission of particulate matter so as to adversely affect the limits set out in the First schedule.

Particulates from material handling.

38. No person shall cause or allow emission of particulate matter during the demolition of structures, buildings, or parts of buildings in such a manner as to adversely affect the limits set out in the First Schedule.

Particulates from demolitions.

39. No person shall cause or allow stockpiling or other storage of material in a manner likely to cause ambient air quality levels to be exceeded.

Effect of stockpiling of material.

PART IX—LICENCES

40. (1) The owner or operator of any existing controlled facility shall apply to the Authority for an emission licence every twenty-four months using the form 4 prescribed in Schedule Nine upon payment of the prescribed fee.

Application for emission licence.

41. (1) An owner or operator of a controlled facility shall apply for an emission licence every twenty-four months by submitting to the Authority, an application as set out in Form I of the Ninth Schedule.

Application procedure for an emission licence.

(2) An application shall be considered complete when the following requirements are satisfied—

- (a) the application form is complete in respect of all the information required of the applicant, including a valid stack emission report and any necessary supporting data;
- (b) an authorized official of the applicant certifies the truth, accuracy, and completeness of the application, as provided in the application form; and
- (c) the application form is accompanied by proof of payment of the applicable fee as prescribed in the thirteenth schedule.

(3) Where the Authority considers and it is satisfied that the application is complete, it shall issue the applicant with an emission licence in Form III or Form V as set out in the Ninth Schedule within a period of forty five days from the date of receipt of the application.

(4) Where the Authority considers and it is satisfied that an application under this regulation is incomplete, it shall notify the applicant accordingly within a period of thirty days of the receipt of the application.

(5) A notification under paragraph 4 shall be in writing and shall specify the information needed to make the application complete and prescribe a reasonable time frame for response from the applicant.

42. Further to the provision in regulation 41, where emissions from the facility or activity in the application are exceeding applicable emission standards or target, the Authority may consider issuance of a provisional emission license.

Applications for provisional emission licences.

43. (1) The owner or operator shall be required to submit an emission compliance plan that indicates the activities and the schedule for bringing the facility into compliance.

Emission compliance plans.

(2) The adequacy and completeness of the emission compliance plan shall be as guided under Part XI of the Fifth Schedule.

(3) The Authority shall review an emission compliance plan within fourteen days of the receipt thereof, and shall, before the end of that period, notify the person who submitted the plan as to whether the plan is approved, disapproved, or if further information is required:

Provided that where a compliance plan is submitted as part of the requirements of a license application, such plan shall be reviewed along with all other aspects of the license application and all provisions relating to the time period for review of license applications shall apply to the review of the compliance plan.

(4) Where a compliance plan is approved as part of the review of a license application, such plan shall be affixed to the license and shall form a part of the terms and conditions of the license.

(5) Where a compliance plan is disapproved, the notification of such disapproval shall—

- (a) set out the reasons for the disapproval; and
- (b) inform such person that he is entitled to revise and resubmit the compliance plan within fourteen days of the date of delivery of such notification.

(6) If after the review of a resubmitted compliance plan there remain aspects of the plan that are unsatisfactory to the Authority, the Authority may approve the plan subject to such terms, conditions or modifications as it thinks necessary in order eliminate or mitigate the unsatisfactory aspects of the plan.

(7) Where a compliance plan is made subject to any term, condition or modification under paragraph (6), the notification of the

approval of the plan shall contain a written statement of the reasons for inserting the term, condition or modification, as the case may be.

(8) The deadline for the complete implementation of a compliance plan shall be no later than three years from the date of notification of approval of the plan.

44. (1) Where the Authority is satisfied that the application and emission compliance plan is complete it may issue the Applicant with a provisional emission license as set out in form III set out in the Ninth Schedule.

Provisional
emission licence.

(2) A provisional emission license issued by the Authority shall be valid for a period of one year from the date of issuance and any subsequent renewal shall not exceed a period of two years based on progressive improvements in implementing the emission compliance plan as shall be determined by the Authority.

45. (1) An emission license, shall be in Form IV set out in the Ninth Schedule, and shall be valid for a period of one year, beginning on the date of the approval of the application for the license.

Emission licence.

(2) An emission licence shall be subject to such terms and conditions as the Authority may deem necessary.

46. (1) The Authority shall make a decision in respect of a licence application within forty five days after receipt and shall—

Licence
processing.

(a) notify the applicant of the decision, and give written reasons if the application was unsuccessful;

(b) notify any person who may have complained of the facility; and

(c) at the request of any person contemplated in paragraph (b), give written reasons for its decision or make public its reasons.

(2) Where an incomplete application has been submitted it shall be deemed to have been properly submitted when any clarification or additional information required is satisfactorily submitted to the Authority within the stipulated time lines.

47. (1) A licensee shall apply to the Authority two months before the expiry of the license for the renewal of the license by submitting an application in Form VI set out in the Ninth Schedule.

Renewal of
emission licence.

(2) An application for the renewal of a licence shall be accompanied by—

(a) the prescribed emission processing and monitoring fee stipulated under the Thirteenth Schedule;

(b) a valid stack emission report;

(c) an air dispersion modeling assessment report under Part XV of the Fifth Schedule where there is modification or redesign of the stack or the facility operations or as may be

prescribed by the Authority;

- (d) fugitive emissions control plan;
- (e) maintenance record for emitting equipment and pollution control system;
- (f) certificate of analysis for the fuel;
- (g) any other condition specified in the license; and
- (h) such other information as may be required by the Authority.

48. (1) Where a licensee wishes to transfer the license to another person, the transferee and transferor shall jointly apply to the Director-General for approval of the transfer in Form VII set out under the Ninth Schedule accompanied by the prescribed fee under the Thirteenth Schedule at least ninety days prior to any such change.

Transfer of
emission licence.

(2) The Director-General shall consider an application under paragraph (1) and may grant the approval or decline with reasons in writing and forwarded to the applicant.

(3) A license transferred under paragraph (3) shall be only in respect of the facility for which the license was issued.

(4) A person to whom a licence is transferred to shall be issued with a Certificate of Transfer in Form VIII set out in the Ninth Schedule.

(5) The transferor of a license under these Regulations shall be liable for all liabilities prior to the date of transfer.

(6) The transferee shall be responsible for any future liabilities or any obligations imposed with regard to the license from the date the transfer become effective.

49. (1) The holder of an emission license may apply to the Authority for the variation of the license where the licensee wants to vary terms and conditions of an emission license.

Variation of
emission licence.

(2) An application under paragraph (1) shall be in Form IX set out in the Ninth Schedule and shall be accompanied by the prescribed fee.

(3) Upon receipt of an application for variation of an emission license the Authority may in consultation with the relevant lead agencies consider the application within twenty-one days, and where the application is approved, issue a certificate of variation in Form X set out in the Ninth Schedule.

50. The Authority may, in consultation with the relevant lead agencies vary an emission license where it deems it necessary and inform the holder accordingly in writing, giving reasons for the necessary variation.

Variation of
emission licence
by the Authority.

51. (1) The owner or operator of the controlled facility may voluntarily surrender emission licence if he ceases the operations due to

Surrender of
emission licence.

commercial or personal reasons by making a formal application to the Authority in the prescribed form set out in the Ninth Schedule accompanied by the prescribed fee.

(2) The owner or operator of the controlled facility shall not surrender the licence without the consent of the Authority.

(3) The surrender of the emission licence shall not be effective until the Authority issues the certificate of surrender in respect of that licence in form XII set out in the Ninth Schedule.

(4) A surrender shall be without prejudice to any liabilities or obligations which have accrued on the licensee prior to the date of the surrender

52. (1) The Authority may at any time, after issuing an emission licence under these Regulations, suspend, revoke or cancel the licence on such terms and conditions as it may deem fit.

Suspension, revocation or cancellation of emission licence.

(2) A licence shall be suspended, revoked or canceled under paragraph (1) where—

- (a) the licensee contravenes the conditions set out in the licence;
- (b) there is substantial change or modification in the activities in respect of which it was issued;
- (c) the emission poses a health or environmental threat which could not be reasonably foreseen before the licence was issued;
- (d) it is established that the information or data given by the licensee in support of the application for an emission licence was false, incorrect or intended to mislead;
- (e) the licensee fails to obey an improvement order issued under these Regulations; or
- (f) the licensee fails to submit and comply with a fugitive emissions control plan or an emission compliance plan as required under these Regulations.

53. The Authority shall maintain—

- (a) a register of emission licences as set out in Form XI under the Ninth Schedule; and
- (b) monitoring reports,

Register of emission licences.

which shall be public documents maintained at the offices of the Authority for inspection by any person.

54. A person aggrieved by the decision of the Authority pursuant to the exercise of its powers under this Part may appeal in the manner provided in the Act.

Appeals.

PART X—METHODS OF MEASUREMENT AND ANALYSIS

55. (1) A person, owner or operator of a facility listed under the

Measurement of

Fourteenth Schedule shall ensure that measurement of emissions and occupational exposure levels are carried out in accordance with the methods of test set out in the Eleventh Schedule. air pollutants.

(2) The analysis of all measurements in paragraph (1) above shall be carried out by laboratories designated and licensed by the Authority in accordance with the relevant legislation on chemicals management.

(3) A designated and licensed laboratory shall conduct themselves in accordance with the code of practice as contained in the Fifteenth Schedule to these Regulations or prescribed by the Authority from time to time.

(4) Any designated and licensed laboratory shall undertake air quality measurements in line with the methods of tests as prescribed in the Eleventh schedule.

56. The Authority in consultation with the relevant lead agencies may carry out all measurements of ambient air quality levels in accordance with the methods of test set out in the Eleventh Schedule. Measurement of ambient air quality.

57. (1) The record of the measurements carried out as required under regulation 52 shall be kept by the owner, occupier, or operator of the facility for a period of at least two years or such other period as may be prescribed by the Authority. Air quality monitoring records.

(2) All emission test reports shall be delivered to the Authority within Thirty days from the date of completion of testing or as may be prescribed by the Authority.

(3) The Authority may, grant an extension of the period specified in paragraph (2) upon the submission to the Authority, not less than five days before the expiration of such period, of a written explanation for the requested extension.

PART XI—INSPECTION AND MONITORING

58. The Authority may carry out monitoring of ambient air quality or request designated and licensed laboratories to do so on its behalf. Monitoring of ambient air quality.

59. A controlled facility shall install web-enabled continuous emission monitoring system which shall transmit real time emissions data to the Authority. Continuous monitoring system.

60. (1) An owner or operator of a controlled facility while installing a stack shall ensure that it complies with the requirements stipulated under part XIV of the Fifth Schedule. Stack height.

(2) An owner or operator of a controlled facility shall provide portholes, and platforms which shall be conveniently located for easy access and all other facilities required for taking samples of air or emission from any chimney, flue or duct, plant or vessel or any other outlets. Provision of portholes in stacks.

61. Where the Authority requires stack emission tests to be performed under these Regulations, an owner of a facility shall provide Provision of service for stack sampling.

the following—

- (a) sampling ports which are adequate for the test methods applicable to the facility;
- (b) safe sampling platforms or other suitable and safe permanent or temporary structures or equipment; and
- (c) safe access to sampling platforms.

62. (1) Results of emissions sampling and analysis shall be prescribed in the format set out in Part XIII of the Fifth Schedule and expressed in metric units consistent with the emission standards or targets set out in these Regulations and in the conditions, if any, imposed in the relevant license.

Stack emission recording and reporting requirements.

(2) Any expected emissions from the facility are based on dispersion modeling, are found to be likely to exceed any ambient air quality standard; or

(3) Any expected ambient air quality measurements at required monitoring locations exceeds a prescribed ambient air quality standard.

PART XII—REPORTING

63. (1) An owner or operator of any facility listed in the Fourteenth Schedule shall submit the monitoring Report to the Authority biannually or as may be prescribed by the Authority.

Monitoring reports.

(2) The Authority shall convey its written comments on the Report to the owner or the operator within thirty days of the receipt thereof.

64. (1) An owner or operator of any facility where the air pollution control system breaks down or malfunctions, and is likely to cause excessive emissions leading to imminent danger, shall notify the Authority within a period of twenty-four hours from the time of the occurrence.

Notification of excessive emissions.

(2) An owner or operator of any controlled facility to which paragraph (1) applies shall submit to the Authority a report on exceeded emission limit in the Form II set out in the Ninth Schedule.

PART XIII—MISCELLANEOUS PROVISIONS

65. The Authority in consultation with the relevant lead agencies may issue guidelines, including guidelines listed under Part XIII of the Fifth Schedule to these Regulations, on the monitoring of air pollutants.

Guidelines for monitoring air pollutants.

66. The Authority may in consultation with the relevant lead agencies establish baseline levels of priority air pollutants set out in the Second Schedule.

Baseline levels of priority air pollutants.

67. A person who fails to comply with the provisions of these Regulations, commits an offence and is liable on conviction to a fine not exceeding four million Kenya shillings or to imprisonment not exceeding four years or to both such fine and imprisonment.

Offences and penalties.

68. Where the Authority demonstrates through scientific or empirical data that a person is not complying with any of the standards set out in these Regulations, the Authority may charge such person a penalty of ten thousand Kenya shillings for every parameter not being complied with, per day, until such person demonstrates full compliance with the relevant standard related to such parameter:

Charges for
pollution.

Provided that the penalty shall not be charged in cases where—

- (a) an operator has been issued with a provisional emission license and the same is valid;
- (b) an operator has obtained an approval from the Authority for an emission compliance plan;
- (c) where an operator has notified the Authority of a breakdown in the emission control system; and
- (d) any activity under the exemptions clause.

FIRST SCHEDULE

rr. 5, 6, 7, 10, 33, 38

AMBIENT AIR QUALITY TOLERANCE LIMITS

Table 1: Ambient Air Quality Tolerance Limits

| | Pollutant | Time weighted Average | | | |
|----|--|-----------------------|-----------------------|-----------------------------------|-----------------------|
| | | | Industrial area | Residential, Rural and Other area | Controlled areas*** |
| 1. | Sulphur Dioxide (SO ₂); | Annual Average* | 80 µg/m ³ | 60 µg/m ³ | 15 µg/m ³ |
| | | 24 hours** | 125 µg/m ³ | 80 µg/m ³ | 30 µg/m ³ |
| | | Annual Average | | 0.019 ppm/50µg/m ³ | |
| | | Month Average | | | |
| | | 24 Hours | | 0.048ppm /125µg/m ³ | |
| | | One Hour | | | |
| | | Instant Peak | | 500 µg/m ³ | |
| | | Instant Peak (10 min) | | | 0.191 ppm |
| 2. | Oxides of Nitrogen (NO _x); | Annual Average* | 80 µg/m ³ | 60 µg/m ³ | 15 µg/m ³ |
| | | 24 hours** | 150 µg/m ³ | 80 µg/m ³ | 30 µg/m ³ |
| | | 8 hours | | | |
| | | Annual Average | | 0.2 ppm | |
| | | Month Average | | 0.3 ppm | |
| | | 24 Hours | | 0.4 ppm | |
| | | One Hour | | 0.8 ppm | |
| | | Instant Peak | | 1.4 ppm | |
| 3. | Nitrogen Dioxide | Annual Average | 150 µg/m ³ | 0.05 ppm | |
| | | Month Average | | 0.08 ppm | |
| | | 24 Hours | 100 µg/m ³ | 0.1 ppm | |
| | | One Hour | | 0.2 ppm | |
| | | Instant Peak | | 0.5 ppm | |
| 4. | Suspended particulate matter (SPM) | Annual Average* | 360 µg/m ³ | 140 µg/m ³ | 70 µg/m ³ |
| | | 24 hours** | 500 µg/m ³ | 200 µg/m ³ | 100 µg/m ³ |
| | | | Industrial area | Residential, Rural and Other area | Controlled areas*** |
| | | mg/Kg | | | |

| | Pollutant | Time weighted Average | | | |
|-----|---|-----------------------|------------------------|-------------------------|------------------------|
| | | Annual Average**** | | 100 µg/m ³ | |
| | | 24 hours*** | | 180 µg/m ³ | |
| 5. | Respirable particulate matter (<10µm) (RPM) | Annual Average* | 70 µg/m ³ | 50 µg/m ³ | 50 µg/m ³ |
| | | 24 hours** | 150 µg/Nm ³ | 100 µg/Nm ³ | 75 µg/Nm ³ |
| 6. | PM _{2.5} | Annual Average | 35 µg/m ³ | | |
| | | 24 hours | 75 µg/m ³ | | |
| 7. | Lead (Pb) | Annual Average* | 1.0 µg/Nm ³ | 0.75 µg/Nm ³ | 0.50 µg/m ³ |
| | | 24 hours** | 1.5 µg/m ³ | 1.00 µg/m ³ | 0.75 µg/m ³ |
| | | Month Average | | 2.5 | |
| 8. | Carbon monoxide (CO)/ carbon dioxide (CO ₂) | 8 hours** | 5.0 mg/m ³ | 2.0 mg/m ³ | 1.0 mg/m ³ |
| | | 1 hour | 10.0 mg/m ³ | 4.0 mg/m ³ | 2.0 mg/m ³ |
| | | mg/Kg | | | |
| | | 24 hours** | | | |
| 9. | Hydrogen Sulphide | 24 hours** | 150µg/m ³ | | |
| 10. | Non-methane hydrocarbons | | | | |
| | | instant Peak | 700ppb | | |
| 11. | Total VOC | 24 hours** | 600 µg/m ³ | | |
| 12. | Ozone | 1-Hour | 200 µg/m ³ | 0.12 ppm | |
| | | 8 hour (instant Peak) | 120 µg/m ³ | 1.25 ppm | |
| 13. | Odour | | | | |

Legend

- a) µg- microgram
- b) m³ – cubic metre
- c) ppm – parts per million
- d) ppb – parts per billion
- e) Values at Standard Temperature and Pressure (STP)
- f) Conversion factors from ppm to mg/m³ and mg/m³ to ppm are stipulated under the Eleventh Schedule
- g) * [Annual Arithmetic mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval.]

- h) [** 24 hourly/8 hourly values should be met 98% of the time in a year. However, 2% of the time, it may exceed but not on two consecutive days.]
- i) Whenever and wherever two consecutive values exceeds the limit specified above for the respective category, it would be considered adequate reason to institute regular/continuous monitoring and further investigations.
- j) * the 24-hour limit may not be exceeded more than three times in one year;
- k) ** 24-hour limit may not be exceeded more than three times in one year micrograms/m³
- l) *** Not to be exceeded more than once per year average concentration
- m) ***In conversion of units from ppm to mg/m³ and vice versa shall use guidelines set out under Part II of the Fifth Schedule.

R20

Table 2: Ambient Air Quality at Property Boundary for General Pollutants

| | Pollutant | Time weighted Average | Property Boundary |
|----|--|-----------------------|-----------------------|
| 1. | Particulate matter (PM) | Annual Average* | 50 µg/m ³ |
| | | 24 hours** | 70 µg/m ³ |
| 2. | Oxides of Nitrogen (NO _x); | Annual Average* | 80 µg/m ³ |
| | | 24 hours** | 150 µg/m ³ |
| 3. | Sulphur oxides (SO _x); | Annual Average* | 50 µg/m ³ |
| | | 24 hours** | 125 µg/m ³ |
| 4. | Hydrogen Sulphide | 24 hours** | 50 µg/m ³ |
| 5. | Ammonia | 24 hours** | 100 µg/m ³ |

Note.

- a) For residential premises in designated industrial areas, the above standards do not apply.
- b) For industries in designated residential areas, standards for residential areas shall apply.

SECOND SCHEDULE

rr. 6,10, 14, 35

Priority Air Pollutants

Part I: General Source Pollutants

- a) Particulate matter (Dust, black smoke, smog, aerosols);
- b) Sulphur oxides (SO_x);
- c) Nitrogen oxides (NO_x);
- d) Carbon monoxide (CO)
- e) *Carbon dioxide (CO₂);*
- f) Hydrocarbons (HC);
- g) Volatile organic Compounds(VOC);
- h) Hydrogen Sulphide (H₂S);
- i) Hydrogen Chloride (HCl);
- j) Lead and its compounds;
- k) Mercury vapour (Hg)
- l) Ozone (O₃);
- m) Dioxins and furans (PCDD and PCDF).

Part II: Mobile Source Pollutants

- a) Hydrocarbons (HCs)
- b) Volatile organic Compounds(VOC);
- c) Sulphur dioxide (SO_x)
- d) Nitrogen oxides (NO_x)
- e) Particulates (PM)
- f) Carbon Monoxide (CO)

Part III: Greenhouse gases(GHG)

- a) Carbon dioxide (CO₂);
- b) Methane (CH₄);
- c) Nitrous oxides (N₂O);
- d) Hydrofluorocarbons (HFCs);
- e) Perfluorocarbons (PFCs); and
- f) Sulphur hexafluoride (SF₆)

THIRD SCHEDULE

rr. 8, 14, 15,35,36,64

EMISSION LIMITS FOR CONTROLLED AND NON-CONTROLLED FACILITIES

| Air Pollutant | Industry | Particulate (Dust) PM ₁₀ (mg/Nm ³) | | Sulphur oxide (SO _x) (mg/Nm ³) | Nitrogen oxides (NO _x) (mg/Nm ³) | | O ₂ % | Carbon monoxide (mg/Nm ³) | Carbon dioxide (mg/Nm ³) | Hydrocarbons (mg/Nm ³) | Hydrogen Sulphide (mg/Nm ³) | Hydrogen Chloride (mg/Nm ³) | Hydrogen Fluoride (mg/Nm ³) | Dioxins/Furans |
|-----------------------------|----------|---|--|--|--|----------------------|------------------|---------------------------------------|--------------------------------------|------------------------------------|---|---|---|-----------------------------------|
| | | Opacity | NDA | DA | NDA | DA | | | | | | | | |
| | | | NDA | | | | | | | | | | | |
| | | | DA | | | | | | | | | | | |
| | | | | NDA | | | | | | | | | | |
| | | | | DA | | | | | | | | | | |
| | | | | | NDA | | | | | | | | | |
| | | | | | DA | | | | | | | | | |
| Aluminium recycling plants | | | 10 – 30 | | | | | | | 20 | | * | | * |
| Asphalt mixing batch plants | | | < 100 t: 4g/kg 100 to 300 t: 22g/kg 300 to 500 t: 31g/kg > 500 t: 33 g/kg | 2000 | | 460 | | * | * | 20 | | | | |
| Boilers | * | | 50 | * | | * | | * | * | * | * | | | * |
| Cement plants | | | 50 | 400 | | 1500 | | * | 500 | 300 | | | | 0.5ng/Nm ³ |
| Ceramics manufacture | | | 400 | | | 180-250 ppm | | | | | | | | |
| Coke and coal plants | | * | | * | | * | | * | * | * | * | * | | |
| Dairy | | | 50 | | | | | | | | | | | |
| Fertilizer plant | | | 50 | * | | 500 | | | | 20 | 30 | | 50 | |
| Iron Foundry | | | 50 | 560 | | | | * | * | | | | 5 | |
| Brass bronze Foundry | | | 50 | 20 - 50 | | | | | | | | | | |
| Glass Manufacture | | | 20 - 50 | Oil fired: 1,800 Gas fired: 700 | | 1000 - 2000 | | | | | | 50 | 5 | |
| Galvanizing operations | * | | 50 | | | | | | | | | | | |
| Incinerators | | * | < 10 t: 4g/kg 10 to 30 t: 10g/kg 30 to 50 t: 10g/kg | 500 | | Existing:130-600 ppm | | * | * | | | | | 2.0 – 80 ng – TEQ/Nm ³ |

| Air Pollutant | Industry | Particulate (Dust) PM ₁₀ (mg/Nm ³) | | Sulphur oxide (SO _x) (mg/Nm ³) | Nitrogen oxides (NO _x) (mg/Nm ³) | O ₂ % | Carbon monoxide (mg/Nm ³) | Carbon dioxide (mg/Nm ³) | Hydrocarbons (mg/Nm ³) | Hydrogen Sulphide (mg/Nm ³) | Hydrogen Chloride (mg/Nm ³) | Hydrogen Fluoride (mg/Nm ³) | Dioxins/Furans |
|---------------|---------------------------------|--|---|--|--|------------------|---------------------------------------|--------------------------------------|------------------------------------|---|---|---|-------------------------------------|
| | | Opacity | Particulate (Dust) PM ₁₀ (mg/Nm ³) | | | | | | | | | | |
| | | | NDA DA | NDA | DA NDA | DA | | | | | | | |
| | | | 10g/kg > 50 t: 17.5 g/kg | | New: 60-400 ppm | | | | | | | | 0.1 – 5 ng – TEQ/Nm ³ |
| | Municipal waste | 100 | | | 300 | | * | * | | | | | |
| | Medical waste | 20 (PM _{2.5}) | | 500 | 300 | | * | * | * | * | * | * | * |
| | Industrial waste | * 50 | | 150 | 460 | | * | * | * | * | * | * | * |
| | Kraft pulp mills | 100-150 | | 500 | 600 | | * | * | 20 | 15 | * | * | * |
| | Lead Recycling plants | 20 (PM _{2.5}) | | 400 | | | | | | | | | * |
| | Mineral Processing | 50 | | | | | | | | | | | |
| | Mining and Quarry | 20% | 400 | | | | | | | | | | |
| | Non-ferrous secondary smelters | 50 | | 20 | * | | * | * | * | * | | | * |
| | Non-ferrous secondary smelters | * < 10 t: 7.5 g/kg (PM _{2.5}) 10 to 30 t: 22.5 g/kg (PM _{2.5}) 30 to 50 t: 37.5g/kg (PM _{2.5}) > 50 t: 52.5 g/kg (PM _{2.5}) | | 800 | * | | * | * | 20 | 15 | | | * |
| | Paint and varnish manufacturing | 50 (PM _{2.5}) | | | | | | | 20 | 15 | 10 | | |
| | Pesticides formulation | 20 (PM _{2.5}) | | | | | | | 20 | | 5 | | |

| Air Pollutant | Industry | Particulate (Dust) PM ₁₀ (mg/Nm ³) | | Sulphur oxide (SO _x) (mg/Nm ³) | Nitrogen oxides (NO _x) (mg/Nm ³) | O ₂ % | Carbon monoxide (mg/Nm ³) | Carbon dioxide (mg/Nm ³) | Hydrocarbons (mg/Nm ³) | Hydrogen Sulphide (mg/Nm ³) | Hydrogen Chloride (mg/Nm ³) | Hydrogen Fluoride (mg/Nm ³) | Dioxins/Furans |
|--------------------------------------|----------|---|----|--|--|------------------|---------------------------------------|--------------------------------------|------------------------------------|---|---|---|----------------|
| | | Opacity | | | | | | | | | | | |
| | | NDA | DA | NDA | DA | NDA | DA | | | | | | |
| Pesticide manufacturing | | 20 | | | | | | 20 | | | | | |
| Petroleum Refineries | | 50 | | Sulphur recovery: 150 Combustion units: 500 | 460 | | * | 20 | 152 | | | | * |
| Pharmaceuticals manufacturing plants | | 20 | | | | | | 80 | | 10 | | | |
| Printing industry | | | | | | | | 20 | | 10 | | | |
| Steel mills | * | Existing-240 (PM _{2.5}) New-120 (PM _{2.5}) | | 500 | 200 | | * | | | | | | |
| Sulphuric acid Plants | | 50 | | SO ₂ : 2 kg/t acid SO ₃ : 0.15 kg/t acid | | | | | | | | | |
| | | | | < 100 t: 3.75 g/kg 100 to 300 t: 10.5 g/kg 300 to 500 t: 34.5 g/kg > 500 t: 48 g/kg | | | | | | | | | |
| Sugar Manufacture | | < 8.7 mw input boiler): 150 (>8.7 mw input boiler): 100 | | 2000 | Liquid fuels: 460 ppm Solid fuels: 750 ppm | | | | | | | | |
| Soda ash Manufacture | | 50 | | | | | | | | | * | | |
| Tanneries | | 50 | | 1000 | 1500 | | | 20 | 15 | * | | * | |

| Air Pollutant | Industry | Particulate (Dust) PM ₁₀ (mg/Nm ³) | | Sulphur oxide (SO _x) (mg/Nm ³) | Nitrogen oxides (NO _x) (mg/Nm ³) | | O ₂ % | Carbon monoxide (mg/Nm ³) | Carbon dioxide (mg/Nm ³) | Hydrocarbons (mg/Nm ³) | Hydrogen Sulphide (mg/Nm ³) | Hydrogen Chloride (mg/Nm ³) | Hydrogen Fluoride (mg/Nm ³) | Dioxins/Furans |
|---------------|--|---|-----|--|--|--|------------------|---------------------------------------|--------------------------------------|------------------------------------|---|---|---|----------------|
| | | Opacity | | | | | | | | | | | | |
| | | N/A | DA | N/A | DA | N/A | DA | | | | | | | |
| | Natural Gas (All turbine types of unit > 50MWth) | N/A | N/A | N/A | N/A | 51 | 25 | | | | | | | |
| | Fuels other than Natural Gas (unit > 50MWth) | 50 | 30 | Use 1%SF | Use 0.5%SF | | | | | | | | | |
| | Boiler | | | | | | | | | | | | | |
| | Natural Gas | N/A | N/A | N/A | N/A | 240 | 240 | 3% | | | | | | |
| | Other Gaseous fuels | 50 | 30 | 400 | 400 | 240 | 240 | 3% | | | | | | |
| | Liquid Fuels (Plant >=50MWth to < 600MWth) | 50 | 30 | 900-1500 | 400 | 400 | 200 | 3% | | | | | | |
| | Liquid Fuels (>=600 MWth) | 50 | 30 | 200-850 | 200 | 400 | 200 | 3% | | | | | | |
| | Solid Fuels >=50MWth to < 600MWth) | 50 | 30 | 900-1500 | 400 | 510 | 200 | 6% | | | | | | |
| | Solid Fuels (>=600 MWth) | 50 | 30 | 200-850 | 200 | 1,100 upto volatile matter of fuel < 10% | 200 | 6% | | | | | | |
| | Waste water treatment plants | | | | | NH ₃ (100-400) | | | | 400-2,000 | 50-200 | | | |

Legend

SF: Sulphur Fuel

* 1.5-3.0% only justified by project specific considerations i.e. add secondary treatment to meet levels of 1.5% Sulphur

** dependent on water availability for injection

CI: Compression Ignition

SI: Spark Ignition

DF: Dual Fuel

DA: Degraded Area

NDA: Non-degraded Area

The chimney or stack should have a minimum height of 10 metres above ground level and clear the highest of the building by not less than 3 metres for all roofs. The topography and height of adjacent buildings within 50 metres radius should be taken into account.

Toxic Equivalent (TEQ) is the sum of the toxic equivalent factors (TEF) of a mixture congeners contained in a compound. The compound 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) was assigned a TEF of 1 after being identified, by International Association of Radiology and Cancer (IARC) and World Health Organisation (WHO), as the most toxic of all compounds, and as carcinogenic to humans, based mainly on studies of cases involving accidental or occupational heavy exposure. Therefore the TEF is a weighting factor.

g - gram

µg- microgram

kg – kilogram (1,000g)

mg - milligram

µg- microgram

m³ – cubic metre

ppm – parts per million

FOURTH SCHEDULE

rr. 8, 66(2)

AIR POLLUTION MONITORING PARAMETERS FROM STATIONARY SOURCES

| Industry Air Pollutant | Opacity | Particulate (Dust) | Sulphur oxide (SO _x) | Nitrogen oxides (NO _x) | Carbon monoxide | Carbon dioxide | Hydrocarbons | Hydrogen Sulphide (H ₂ S) | Hydrogen Chloride | Dioxins/Furans |
|---------------------------------------|---------|-----------------------|--|--|--------------------|----------------|--------------|---|----------------------|----------------|
| Aluminium recycling plants | | * | | | | | * | | * | * |
| Asphalt batch plants | | * | * | * | * | * | * | | | |
| Boilers | * | * | * | * | * | * | * | | | * |
| Cement plants | | * | * | | * | * | * | | | * |
| Ceramics manufacturing plants | | * | | * | | | | | | |
| Coke and coal plants | | * | * | * | * | * | * | * | * | |
| Fertilizer plant | | * | * | * | | | * | * | * | |
| Galvanizing plants | | * | | | * | * | | | | |
| Glass manufacturing plants | | * | * | * | | | | | * | * |
| Iron Foundry plant | | * | * | | * | * | | | * | |
| Kraft pulp mills | | * | * | * | * | * | * | * | * | * |
| Lead Recycling plant | | * | * | | | | | | | * |
| Mineral Processing plants | | * | | | | | | | | |
| Mining and Quarry | * | * | | | | | | | | |
| Municipal and Industrial incinerators | * | * | * | * | * | * | * | | * | * |
| Non-ferrous smelters, secondary | * | * | * | * | * | * | * | * | | * |
| Paint and varnish manufacturing | | * | | | | | * | * | * | |
| Pesticides formulation | | * | | | | | * | | * | |
| Pesticide Manufacturing plants | | * | | | | * | | | | |

| Industry Air Pollutant | Opacity | Particulate (Dust) | Sulphur oxide (SO _x) | Nitrogen oxides (NO _x) | Carbon monoxide | Carbon dioxide | Hydrocarbons | Hydrogen Sulphide (H ₂ S) | Hydrogen Chloride | Dioxins/Furans |
|--------------------------------------|---------|-----------------------|--|--|--------------------|----------------|--------------|---|----------------------|----------------|
| Petroleum Refineries | | | * | | * | | * | | | * |
| Pharmaceuticals manufacturing plants | | * | | | | | * | | * | |
| Printing industry | | | | | | | * | | * | |
| Steel mills | * | * | * | * | * | | | | | |
| Sugar manufacturing plants | | * | * | * | | | | | | |
| Sulphuric acid Plants | | * | * | | | | | | | |
| Salt and Soda ash processing plants | | * | | | | | | | * | |
| Thermal Power Plants | | * | * | * | * | * | | | | * |
| Geothermal Power Plants | | | * | * | | | * | * | | |
| Tanneries | | * | * | * | | | * | * | * | * |
| Textile | | * | | | | | * | | | |
| Waste water Treatment Plants | | | | * | | | * | * | | |
| | | | | | | | | | | |

And any other parameter as may be prescribed by the Authority from time to time

Legend

- a) * - parameters to be monitored
- b) Frequency – dependent on parameter and reported on a quarterly basis

FIFTH SCHEDULE

rr. 4, 10, 16, 19, 21, 22, 23, 31, 36, 48, 59, 60, 61, 63, 66, 67, 71, 72, 73

General Guidelines

Part I - Exempted Equipment and Activities

- a) Air pollutant detector, air pollutant recorder, combustion controller or combustion shut-off.
- b) Air conditioning or comfort ventilating systems.
- c) Vacuum cleaning systems used exclusively for office applications or residential housekeeping.
- d) Ventilating or exhaust systems for print storage room cabinets.
- e) Exhaust systems for controlling steam and heat.
- f) Maintenance, repair, or replacement in kind of equipment for which a permit to operate has been issued.
- g) Equipment which emits only nitrogen, oxygen, *carbon dioxide*, and/or water vapour.
- h) Ventilating or exhaust systems used in eating establishments where food is prepared for the purpose of consumption.
- i) Equipment used to liquefy or separate oxygen, nitrogen or the rare gases from the air.
- j) Fireworks display.
- k) Outdoor painting and sand blasting equipment.
- l) Lawnmowers, tractors, farm equipment and construction equipment.
- m) Fire schools or fire fighting training.
- n) Residential wood burning stoves and wood burning fireplaces.
- o) Buildings, cabinets, and facilities used for storage of chemicals in closed containers.
- p) Sewage treatment facilities.
- q) Water treatment units.
- r) Inactive wastewater treatment systems.
- s) Non-contact water cooling towers (water that has not been in direct contact with process fluids).
- t) Laundry dryers, extractors, or tumblers used for fabrics cleaned with a water solution of bleach or detergents.
- u) Equipment used for hydraulic or hydrostatic testing.
- v) Blueprint copiers and photographic processes.
- w) Inorganic acid storage tanks equipped with an emission control device.

- x) Any fuel burning equipment used exclusively for providing domestic electrical power of a capacity not greater than 100 KVA.

Part II — *Guideline on Conversion factors*

- a) ppm to mg/m³ - air

The conversion between ppm and mg/m³ is dependent on both the molecular weight of the substance and the temperature at which the conversion is made. The assumption is that the pollutant behaves as an ideal gas and as such, 1 mole of the substance occupies 22.4 litres at standard temperature (273K) and pressure (101.3 kPa). This is consistent with normalised concentrations, and it is therefore not normally necessary to take account of the temperature or pressure difference in the conversion. However, when converting ppm to mg/m³ at actual discharge conditions, it is important to take account of the necessary factors.

To convert from ppm to mg/m³, the following formula should be used:

$$\text{mg/m}^3 = \text{ppm} \times (\text{MW}/22.4) \times (273/\text{T}) \times (\text{P}/101.3)$$

Where MW is the molecular weight of the substance (in grams)

T is the temperature at which the conversion is to be made (degrees Kelvin)

P is the pressure at which the conversion is to be made (kPa)

To convert from mg/m³ to ppm, the following formulae should be used:

$$\text{ppm} = \text{mg/m}^3 \times (22.4/\text{MW}) \times (\text{T}/273) \times (101.3/\text{P})$$

Part IV — *Emission Reduction Measures of Dark Smoke from Chimneys*

- 1) Avoid overloading burners with fuel oil.
- 2) Use the correct fuel to air ratio by proper adjustment of the air and fuel supplies.
- 3) Avoid flame impingement on any cold surface.
- 4) Avoid carbon build-up in the boiler and furnace tubes and maintain the boiler and furnace settings in good condition.
- 5) Clean the burner at regular intervals and remove the carbon deposits from the nozzle with soft article after soaking, the nozzle in Kerosene.
- 6) Use the correct atomizing nozzle and atomizing pressure.
- 7) Check for worn or distorted parts of the burner and replace the damaged parts.
- 8) Allow sufficient time in lighting up the burners from cold and adopt the correct start-up procedures as recommended by the burner manufacturers.
- 9) Keep the mesh at the inlet of the air blower clear at all times

Part V — *emissions report format* –

The emissions report format shall include -

- (a) an estimate of the emissions for the relevant calendar year.
- (b) all the data applicable to the emissions sources, in respect of the licensed facility.

(c) Estimates of annual emissions shall be made based on the following methods, in order of preference –

(1) continuous emission monitoring data;

(2) calculation of SO₂ emissions based on fuel use and sulphur content data including combustion processes in which exhaust gases do not come in contact with products;

(3) most recent and representative stack monitoring measurements conducted in the previous five years and activity data for the year for which emissions are estimated;

(4) emission factor or equivalent methods and activity data for the year;

(5) emission factor or equivalent methods and plant capacity data;

(6) mass balance (including fuel use data) based on the two previous years or the most recent representative year;

(7) other approved methods supported by calculation and documentation, and the procedures set out by the Authority

Part VI — *Measures or operating procedures to control fugitive emissions*

The following measures or operating procedures may be used to control fugitive emissions —

(a) from storage piles through use of enclosures, covers or stabilisation, minimising the slope of the upwind face of the pile, confining as much pile activity as possible to the downwind side of the pile and such other methods or techniques as are approved by the Authority.

(b) by enclosing, covering, watering, or otherwise treating loaded haul trucks and railroad cars, or limiting size of loads, to minimise loss of material to wind and spillage.

(c) by minimising the area of disturbed land or tailings.

(d) by planting special wind break vegetation at critical points.

(e) by prompt removal of coal, rock minerals, soil, and other dust-forming debris from paved roads and scraping and compaction of unpaved roads to stabilise the road surface as often as necessary to minimise re-entrainment of fugitive particulate matter from the road surface.

(f) by minimising the period of time between initially disturbing the soil and re-vegetating or other surface stabilization.

(g) by restricting the areas to be blasted at any one time.

(h) by restricting the speed of vehicles in or around mining, tailing or quarrying operations.

(i) by re-vegetating, mulching, or otherwise stabilising the surface of all areas adjoining roads that are a source of fugitive particulate emissions.

(j) by substituting covered conveyor systems for haul trucks.

(k) by using synthetic or re-vegetative covers.

(l) by restricting vehicular travel to established paved roads.

- (m) by watering or chemical stabilisation of unpaved roads as often as necessary to minimise re- entrainment of fugitive particulate matter from the road surface, or paving of roads.

Part VII — Opacity Measurement Guidelines

The darkness of smoke is determined by comparing the shade of smoke to the shades on a Ringelmann Chart which consists of four squares with grids, which denoted shade 1 to shade 4. The darkness covered in each of these four squares represents twenty percent, forty percent, sixty percent and eighty percent opacity respectively. Ringelmann shade 0 is completely white and shade 5 is totally black. Therefore, Ringelmann shade 1 corresponds to smoke of twenty percent opacity.

The regulations stipulate that dark smoke emission from any chimney or relevant plant must not exceed: -

- i) 8 minutes in any period of four hours; or
- ii) 3 minutes continuously at any one time.

Part VIII - *Guideline on sources of fugitive emission air pollutants*

The following are the sources of fugitive emissions:

- (a) construction activities;
- (b) storage and handling, including loading and unloading, of materials such as bauxite, alumina, gypsum, or Portland cement or the raw materials therefore;
- (c) mining and quarrying activities;
- (d) haul roads;
- (e) haul trucks;
- (f) tailings piles and ponds;
- (g) demolition activities;
- (h) blasting activities; and
- (i) Sandblasting operations.
- (n) wind breaks; and
- (o) the paving of roads.
- (p) conveyor belts

Part IX — *Occupational Air Quality Guidelines*

The owner or operator shall control the exposure to employees by: -

- 1) limiting the amount of harmful substances used which may pollute the indoor environment;
- 2) limiting the number of employees who will be exposed or may be exposed;
- 3) limiting the period during which an employee will be exposed or may be exposed;
- 4) introducing engineering control measures for the control of exposure, which may include the following:

- a. Process separation, automation or enclosure.
 - b. Installation of local extraction ventilation systems to process and equipment.
 - c. tools for the control of emission of an air borne hazardous substances.
 - d. Use of wet methods.
 - e. Substituting hazardous substances with less hazardous ones.
- 5) Providing suitable respiratory protective breathing equipment.
- 6) Where respiratory protective equipment is provided, the employer shall ensure-
- a) that the relevant equipment is capable of controlling the exposure to below the Occupational Exposure Level for the relevant harmful substance;
 - b) that the relevant equipment is correctly selected and properly used;
 - c) that information, instructions, training and supervision which is necessary with regard to the use of the equipment is known to the employees; and
 - d) that the equipment is kept in good condition and efficient working order

Part X — *Guideline on NO_xs*

- a) Existing fuel burning equipment shall be presumed to meet the definition of Best Available Technology if the owner or operator proves to the satisfaction of the Authority that the emission levels in the Third Schedule can be met.
- b) If the owner or operator does not prove as described in paragraph (a) of this section, Best Available Technology shall be installed by the owner with the goal of achieving the presumptive emission limits as set forth in the Third Schedule.
- c) If actual achievable emission levels following installation of such combustion modification technology are greater than the presumptive emission limits in the Third Schedule these actual emission levels will become Best Available Technology for those sources.
- d) If the owner or operator does not comply with paragraphs a or b of this section, alternative NO control technology and emission X limitation proposals shall be required and approved by the Authority.
- e) Compliance with the emission levels as determined above is based upon twenty-four hour rolling averaging period, Continuous Emission Monitoring Systems approved by the Authority will be used.

Part XI — *contents of a compliance plan*

A compliance plan shall include but not limited to: –

- (a) a description of the current compliance status of the facility with respect to all applicable requirements, including all sources that exceed emission standards or targets or are predicted to exceed ambient air quality monitoring locations at which ambient air quality standards or guideline concentrations are exceeded, and any other administrative or other requirements that have not been satisfied;
- (b) a statement of the methods used to determine the facility's compliance status, including a description of all monitoring, record keeping, reporting and test methods, and any other information necessary to verify compliance with or to enforce applicable requirements;
- (c) a statement that the facility will continue to comply with each applicable requirement in respect of which compliance is currently achieved at the facility; and
- (d) in respect of each applicable requirement for which compliance is not currently achieved at the facility –
 - (i) a detailed statement of how the facility will achieve compliance;
 - (ii) a proposed compliance schedule setting forth the remedial measures to be taken, including a sequence of actions with milestones leading to compliance;
 - (iii) if the facility is subject to a control order, the proposed schedule of remedial measures shall incorporate the order and shall be at least as stringent as the order;
 - (iv) a schedule for submission of progress reports to the Authority at least once in every six months or more frequently if so required by the licence; and

- (v) a schedule for the submission of compliance reports to the Authority, at least once in every six months or more frequently if so required by the licence, indicating what, if any, progress has been made in relation to the schedule and the milestones.

Part XII - *Guideline for Assessment of Air Quality*

(1) Such assessments, firstly, shall establish actual levels of the given pollutants based on representative measurements, surveys or assessments.

(2) For areas where actual levels of a given pollutant are above the standard values stipulated for that pollutant, the preliminary assessment shall include the following:

- a) establish source contributions to ambient air concentrations of the pollutant of concern;
- b) characterize future trends in ambient air concentrations of the pollutant of concern given a “business as usual” scenario;
- c) identify emission reduction measures suited to reduce contributions from major sources and associated time frames for implementation;
- d) assess the environmental benefit of measures to reduce and maintain air quality within limit values;
- e) determine the technical feasibility of measures to reduce and maintain air quality within limit values;
- f) evaluate the economic viability of measures to reduce and maintain air quality within limit values;
- g) assess the social acceptability and policy applicability measures to reduce and maintain air quality within standard values;
- h) prioritize emission reduction measures on the basis of their environmental benefits, technical feasibility, economic viability, and social acceptability;
- i) determine the time required to reduce air pollutant concentrations to fall within the standard values taking into account the implementation of prioritized emission reduction measures.

Part XIII — *Guideline on Results of Emissions Sampling and Analysis*

Results of emissions sampling and analysis shall be as follows -

(1) Results of emissions sampling and analysis shall be expressed in metric units consistent with the emission standards or targets set out in these Regulations or in the conditions, if any, imposed in the relevant licence.

(2) Measurements of emissions into the atmosphere from stacks, vents or other air pollutant sources, which are reported to the Authority whether voluntarily or as a requirement of these Regulations or of any condition of a licence, shall be reported to the Authority in the form of a test report that includes the following information –

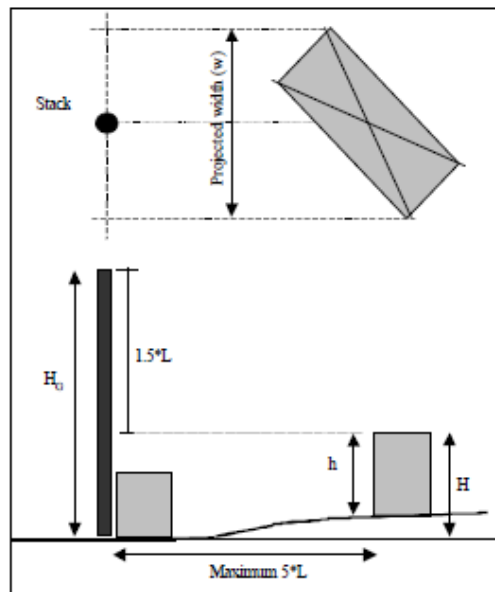
- (a) the testing methods and results, certified as being true, accurate, and in compliance with these Regulations by the person responsible for conducting the emissions test;

-
- (b) the name and location of the facility, the name and location of the source tested, the purpose of the tests, the test participants and their titles, and the date of the performance test;
 - (c) a summary of the results, setting out emission rates for each pollutant and a comparison with applicable emission standards or targets and with any emission limits in the licence;
 - (d) a description of the facility tested and the type of process and control equipment utilised;
 - (e) a description of the process sampled and associated emission control devices referenced to process, and locations at which sampling took place consistent with information provided in the relevant licence application or licence, as the case may be;
 - (f) a schematic of each location sampled including duct diameter, direction of flow, dimensions to nearest upstream and downstream disturbances, including the number of duct diameters, location and configuration of the sampling ports, nipple length and port diameters, and the number and configuration of traverse points;
 - (g) confirmation that sampling locations meet the criteria in the test methods set out in the Eleventh Schedule, or the reasons why those locations do not meet such criteria and a discussion of the effect on results;
 - (h) a discussion of special traversing or measurement schemes (if any);
 - (i) a process flow diagram, maximum design capacities, a fuel analysis and heat value for heat input rate determinations, process and control equipment operating conditions, stack height, exit diameter, volumetric flow rate, exit temperature, exit velocity and a discussion of variations from normal plant operations;
 - (j) a description of the sampling methods used;
 - (k) a brief discussion of the analytical procedures, with justifications for any variance from prescribed method procedures;
 - (l) the number of sampling points, time per point and the total sampling time per run;
 - (m) a cross-sectional diagram showing sampling points and a diagram of the sampling train;
 - (n) a diagram showing stack dimensions, sampling location and the distance from the nearest flow disturbance upstream and downstream, respectively, of the sampling points;
 - (o) results and calculations in units consistent with the applicable emission limits with one complete calculation using actual data for each type of test performed;
 - (p) the tabulated data and results of the process weight rate or heat input rate in metric units, the referenced or derived conversion factors, the stack gas flow rate, the measured emissions given in units consistent with the applicable emission limits, the visible emissions observations or six consecutive minute average continuous opacity monitor readings, and the average value of

emissions from any continuous gaseous emissions monitoring system in units consistent with applicable emission limits;

- (q) quality assurance procedures;
- (r) appendices with raw data and details of calculations, including –
- (i) raw production data signed by the source official;
 - (ii) photocopies of all raw data;
 - (iii) a chain of custody report; and
 - (iv) copies of all calibration data;
- (s) for particulate matter tests, copies of visible emissions evaluations or opacity monitor readings, and, for gaseous pollutant tests, copies of any continuous gaseous emissions monitoring system readings during the tests.

Part XIV: Minimum Stack Height Requirements



$H_g = H + 1.5L$; where

H_g = Good Engineering Practice stack height measured from the ground level elevation at the base of the stack

H = Height of nearby structure(s) above the base of the stack

L = Lesser dimension, height(h) or width(w), of nearby structures

'Nearby Structures' = Structures within/touching a radius of $5L$ but less than 800m

PART XV – GUIDELINES ON AIR DISPERSION MODELLING ASSESSMENT

- (a) as part of the baseline ambient air quality assessment report to be submitted once at the first renewal.
- (b) In order to determine the impacts of emissions from stationary sources at a certain location one will carry out an air dispersion assessment on the facility.
- (c) In determination of the fall out point of an existing facility the input data into the dispersion model shall be its actual operating parameters.
- (d) Determination of the fall out point of a proposed facility, the input data into the dispersion model shall be its designed parameters.
- (e) The dispersion modeling report to be submitted to the Authority shall be in the dispersion modelling report format prescribed under Part..... of the Fifth Schedule.
- (f) Dispersion modeling assessment referred to above shall be carried out using the dispersion models prescribed under part..... of the methods of test and analysis.

SEVENTH SCHEDULE

rr. 16, 72

ACCEPTABLE EMISSION CONTROL TECHNOLOGIES AND STRATEGIES

List of Acceptable Emission Control Technologies

| | Air Pollutants | Emission Control technologies and strategies | Remarks |
|----|--|---|---------|
| 1. | Particulate Matter | <u>Mechanical collectors (dust cyclones, multicyclones)</u> | |
| | | <u>Electrostatic precipitators</u> | |
| | | <u>Filter bags (baghouses)</u> | |
| | | <u>Particulate scrubbers</u> | |
| 2. | Nitrogen Oxides (Nox) * | <u>Low NOx burners</u> | |
| | | <u>Selective catalytic reduction (SCR)</u> | |
| | | <u>Selective non-catalytic reduction (SNCR)</u> | |
| | | <u>NOx scrubbers</u> | |
| | | <u>Exhaust gas recirculation</u> | |
| | | <u>Catalytic converter</u> | |
| 3. | Volatile Organic Compounds (VOC), hydrocarbons | <u>Adsorption systems, such as activated carbon</u> | |
| | | <u>Flares</u> | |
| | | <u>Thermal oxidizers</u> | |
| | | <u>Catalytic oxidizers</u> | |
| | | <u>Biofilters</u> | |
| | | <u>Absorption (scrubbing)</u> | |
| | | <u>Cryogenic condensers</u> | |
| 4. | Sulphur Oxides (SOx) | <u>Wet scrubbers</u> | |
| | | <u>Dry scrubbers</u> | |
| | | <u>Flue gas desulphurization</u> | |
| 5. | Carbon Oxides | <u>Thermal oxidizers</u> | |
| 6. | Hydrogen Sulphides | <u>Absorption (scrubbing)</u> | |
| 7. | Hydrogen Chloride | Dry Scrubbers, <u>Adsorption systems, such as activated carbon</u> | |
| 8. | Dioxins and Furans | Cyclone | |
| | | Electrostatic precipitator | |
| | | Filter bag | |
| | | Wet scrubber | |
| | | Quenching and subsequent wet scrubber | |
| | | Catalytic oxidation (selective catalytic reaction) | |
| | | Catalytic Filter bag | |
| | | Dry absorption in resins (carbon) | |

| | Air Pollutants | Emission Control technologies and strategies | Remarks |
|-----|--|---|---------|
| | | particles dispersed in a polymer matrix) | |
| | | Entrained flow reactor with added activated carbon or coke/lime or limestone solutions and subsequent Filter bag Filter bag | |
| | | Fixed bed or circulating fluidized bed reactor, adsorption with activated carbon or open hearth coke | |
| 9. | Metals (Hg, Pb,) | <u>Sorbent Injection Technology</u> | |
| | | <u>Electro-Catalytic Oxidation (ECO)</u> | |
| | | <u>K-Fuel</u> | |
| 10. | Particulate matter, Sulphur oxides, nitrogen oxides | Cleaner fuels, Sustainable aviation fuels, raw materials substitution, processed change or modification | |
| 10. | Any other technology approved by the Authority from time to time | | |

* Notes

Best Available Technology (BAT) for this category of equipment will consist of combustion modification technology including either:

- (a) low NO burner technology with low excess air
- (b) Air if technically feasible; or
- (c) flue gas re-circulation with low excess air.

EIGHTH SCHEDULE

r. 65

Emission monitoring report

1. Name of Industry

2. Name of contact person

3. Position of contact person

4. Business registration No.

5. Address

Telephone No. Fax

Email:

6. Source of pollutants

.....

.....

.....

7. Emission concentrations and Quantities (mg/l, kg/day)

.....

.....

.....

8. Emission Control Technology

.....

.....

.....

9. Status of Compliance to Emission Limits

.....

.....

.....

Signature dated day of 20.....

Position

10. Official use only

Recommendations

.....

.....

Dated this day of 20.....

Signature.....

(Seal)

NINTH SCHEDULE

r. 40,

Emission Licences

Form I:

Application Form for Emission Licence

1. Name of Company

2. Address

Fax..... E-mail:

Name of Contact Person

3. Location

LR No..... Street..... Area..... Sub-County.....
Town..... County.....

4. Activity

5. Duration:

From.....day/...../month...../year

7. Stack Emissions

(a) Normal operational conditions

(i)

(ii)

(iii)

(iv)

(b) Start-up, maintenance and shut-down conditions

(i)

(ii)

(iii)

(iv)

8. Other relevant information on non-point sources or fugitive emissions any other operating requirements relating to atmospheric discharges

9. Ambient air quality reporting

(i) on-site point source emission measurement

10. Anticipated Date of complianceday.....month.....year.

11. Road map to compliance with standards under Seventh Schedule

(i)

(ii)

(iii)

(iv)

Signature of ApplicantDate.....

Position

FOR OFFICIAL USE

13. Review Period (To be filled out by the Authority)

From.....day/...../month...../year

Upto.....day/...../month...../year

From.....day/...../month...../year

Upto.....day/...../month...../year

Approved/Not approved.....

Dated this.....day.....of 20.....

Signature.....

(Seal)

Form II

r18, 69

Reporting on Emission Limit Exceedence

1. Name of Company
 2. Address
P.O.Box..... Tel..... Fax..... E-mail.....
Name of Contact Person
 3. Location
LR No..... Street..... Area..... Division.....
Town.....District..... Province.....
 4. Source(s) that Caused the Excess Emissions.
 - a)
 - b)
 - c)
 5. First observation of the excess emissions.
 - a) The time..... date..... ofYear
 6. The cause and expected duration of the excess emissions.
 - (a) Cause.....
 - (b) Expected Duration of Exceedence (No.).....hours (No.).....days
(No.).....months
 7. Estimated rate of emissions for sources subject to numerical emission limitations
.....(mg/m³) (*expressed in the units of the applicable emission limitation*)
and the operating data and calculations used in determining the magnitude of the excess emissions
 8. The proposed corrective actions and schedule to correct the conditions causing the excess emissions.
 - a)
 - b)
 9. The test methods listed under the Fifth Schedule or any other approved by the Authority shall be used. The results of the tests shall be submitted to the Authority within 45 days after completing the test.
- Signature of ApplicantDate.....
Position

Form III

r40

Provisional Emission Licence

THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT
PROVISIONAL EMISSION LICENCE

Application Reference No.

Licence No.

FOR OFFICIAL USE

This is to certify that the application for emission into the atmosphere received from (name of applicant) of(address) to the National Environment Management Authority in accordance with Air Quality Regulations for (facility) located at (locality, district and province) has been evaluated and a licence is hereby issued for emission, subject to the attached conditions.

Dated this day of..... 20.....

Signature:

(Official Stamp)

Director General
The National Environment Management Authority

Conditions of Licence

1. This Licence is valid for a period of from the date hereof.
2. Frequency of Monitoring (Daily/Weekly/Monthly/Quarterly)
3.
4.

Form IV

r. 41

Application for Initial Emission Licence

1. Name of Company

2. Address

P.O. Box

Tel.....Fax..... E-mail:

Name of Contact Person

3. Location

LR No..... Street..... Area..... Division.....

Town.....District..... Province.....

4. Type of Industry

5. Name(s) of emitting Equipment

.....
.....
.....
.....
.....

6. Site Plan Layout, (attach sketch)

(a) Distance of the equipment to the nearest building.....

(b) Height of the above referred building.....

(c) Nearest sensitive area or facility.....

(d) Immission (fall-out) point.....

7. Operating Emission levels

(i)

(ii)

(iii)

(iv)

8. Proposed Emission Control Mitigation Measures

(v)

(vi)

(vii).....

(viii)

9. Additional information required

10. Start-up, and shut-down of the equipment

- a) Methods
- b) Expected Frequency of Occurrence
- c) Duration of occurrence
- d) Projected emitted Pollutants
 - (i)
 - (ii)
 - (iii)
 - (iv)

11. (a) Nature of emissions (gaseous, particulates)

- (i)
- (ii)
- (iii)
- (iv)

(b) Concentration of the emissions

- (i)
- (ii)
- (iii)

Signature of ApplicantDate.....

Position

FOR OFFICIAL USE

Approved/Not approved

Dated this.....day.....of 20.....

Signature.....

(Seal)

Form V

r. 41

Initial/Renewal Emission Licence

THE ENVIRONMENTAL MANAGEMENT AND COORDINATION ACT

EMISSION LICENCE

Application Reference No.

Licence No.

FOR OFFICIAL USE

This is to certify that the application for emission into the atmosphere received from (name of applicant) of (address) to the National Environment Management Authority in accordance with Air Quality Regulations for (facility) located at (locality, district and province) has been evaluated and a licence is hereby issued for emission, subject to the attached conditions.

Dated this day of 20.....

Signature:

(Official Stamp)

Director General
The National Environment Management Authority

Conditions of Licence

1. This Licence is valid for a period of from the date hereof.
2. Frequency of Monitoring (Daily/Weekly/Monthly/Quarterly)
3.
4.
5.

Form VI:

r. 44

Application for Renewal of Emission Licence

- 1. Name of industry
- 2. Name of contact person
- 3. Position of contact person
- 4. Business registration No.
- 5. Previous Licence No.
- 6. Address
- Telephone No. Fax..... Email:
- 7. Emission source(s)
-
-
-
-

8. Emission control measures (Environmental Management Plan)

Signature of ApplicantDate.....

Position

Official use

Approved/Not approved.....

Dated this.....day.....of 20.....

Signature.....

(Seal)

FORM VII:

r. 45

Notification of Transfer of Emission Licence

1.0. Details of Current Licence

Name of current emission licence holder

PIN No.

Address

Telephone No. Fax

Email:

Application No. of current emission licence

Date of issue of the current emission licence

2. Details of the Transferee

2.1. Name of facility

2.2. PIN No.

2.5. Address

2.6. Telephone No. Fax

2.7. Email:

2.8. Name of contact person

3.0. Capacity of transferee to operate the facility (financial, technological, manpower) (Conditions)

.....

.....

4.0. Reasons for transfer of licence

.....

.....

5.0. Declaration by transferor and transferee

It is hereby notified that of on
 this day of transferred emission licence No.
 to of who will
 assume his responsibility for all liability under this project.

| | |
|--------------|--------------|
| Transferor | Transferee |
| Name..... | Name..... |
| Address..... | Address..... |
| Signed..... | Signed..... |
| Date..... | Date..... |

6.0. For Official Use

Approved/Not Approved.....

.....
Comments.....

.....
Officer.....Signature.....Date.....

FORM VIII:

r. 45

Certificate of Transfer of Emission Licence

This is to certify that the Emission Licence No.issued on
.....(date) to(name of previous holder) of
.....(address) regarding(type of facility)
whose activities include.....located at.....(town, district) has been
transferred to(name of new
holder).....
.....(nature of variation) with effect from(date of
transfer) in accordance with the provisions of the Act.

Dated this.....day of 20.....

Signature.....
(Seal)

FORM IX:

r. 46

Application of Variation of Emission Licence

1. Previous Applications

(If any
.....
.....

2. Details of Applicant

- 2.1. Name of Industry
- 2.2. Name of contact person
- 2.3. Position of contact person
- 2.4. Business registration No.
- 2.5. Address
- 2.6. Telephone No. Fax
- 2.7. Email:

3. Details of Current Emission Licence

- 3.1. Name of current holder
- 3.2.No. of current emission licence
- 3.3. Date of issue of the current emission licence

4.0. Proposed Variations

- 4.1. Current emission limits
.....
.....
- 4.2. Proposed variations
- 4.3. Reasons for variations
- 4.4. Describe the atmospheric effects
- 4.5. Describe the effects on ambient air quality
- 4.6. Describe the effects on the performance of the equipment
- 4.7. Describe the measures proposed to reduce emission impacts

5.0. Declaration by Applicant

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand the emission licence may be suspended, varied or cancelled if any information given above is false, misleading, wrong or incomplete.

Name..... position..... signature.....

On behalf of(company name and seal)
.....date.....

Official use

Approved/Not approved

Dated this.....day.....of 20.....

Signature.....
(Seal)

FORM X:

r. 46

Certificate of Variation of Emission Licence

This is to certify that the emission Licence No.issued on
.....(date) to(name of firm) of
.....(address) regarding(type of facility)
whose activities include.....located
at.....(town, district) has been varied to
.....
.....(nature of variation) with effect
from(date of variation) in accordance with the provisions of the Act.

Dated this.....dayof 20.....

Signature.....
(Seal)

TENTH SCHEDULE

r. 17

RECORD OF POLLUTION EXPOSURE RESULTS

Form I: Record of Pollution Exposure Results

| Record of Pollution Exposure Assessment | | | | |
|---|---|-----------------|----------------|---------|
| 1. | Name of facility..... | | | |
| 2. | Contact Address..... | | | |
| | Contact person..... | | | |
| 3. | Location | | | |
| 4. | Date..... | | | |
| 5. | Time of the assessment..... | | | |
| 6. | Type of Work Place..... | | | |
| 7. | Measuring methods | | | |
| | (i)..... | | | |
| | (ii)..... | | | |
| | (iii)..... | | | |
| | (iv)..... | | | |
| 8. | Type of measurements (e.g. gases, dust, fumes....) | | | |
| | (i)..... | | | |
| | (ii)..... | | | |
| | (iii)..... | | | |
| 9. | Tabulated results of the measurements and compliance limits | | | |
| | Pollutant | Measured result | Exposure limit | Remarks |
| | (i) | | | |
| | (ii) | | | |
| | (iii) | | | |
| | (iv) | | | |
| 9. | Number of persons exposed..... | | | |
| 10. | Recommended remedial measures | | | |
| | (i)..... | | | |
| | (ii)..... | | | |
| | (iii)..... | | | |
| 11. | Name of the assessor..... | | | |
| | Signature of the Assessor..... | | | |
| | Organization/Company/Firm..... | | | |

ELEVENTH SCHEDULE

r. 24, 52, 53, 55, 57

METHODS OF TEST AND MEASUREMENT OF AIR POLLUTANTS

List of methods of test and measurement of air pollutants

| | Standard |
|----|--|
| 1 | <u>KS ISO 10155</u> Stationary source emissions -- Automated monitoring of mass concentrations of particles -- Performance characteristics, test methods and specifications |
| 2 | <u>KS ISO 10397</u> Stationary source emissions -- Determination of asbestos plant emissions -- Method by fibre count measurement |
| 3 | <u>KS ISO 10780</u> : Stationary source emissions -- Measurement of velocity and volume flow rate of gas streams in ducts |
| 4 | <u>KS ISO 10849</u> : Stationary source emissions -- Determination of the mass concentration of nitrogen oxides -- Performance characteristics of automated measuring systems |
| 5 | <u>KS ISO 11338-1</u> : Stationary source emissions -- Determination of gas and particle-phase polycyclic aromatic hydrocarbons -- Part 1: Sampling |
| 6 | <u>KS ISO 11338-2</u> : Stationary source emissions -- Determination of gas and particle-phase polycyclic aromatic hydrocarbons -- Part 2: Sample preparation, clean-up and determination |
| 7 | <u>KS ISO 11564</u> : Stationary source emissions -- Determination of the mass concentration of nitrogen oxides -- Naphthylethylenediamine photometric method |
| 8 | <u>KS ISO 11632</u> : Stationary source emissions -- Determination of mass concentration of sulfur dioxide -- Ion chromatography method |
| 9 | <u>KS ISO 12039</u> : Stationary source emissions -- Determination of carbon monoxide, carbon dioxide and oxygen -- Performance characteristics and calibration of automated measuring systems |
| 10 | <u>KS ISO 12141</u> : Stationary source emissions -- Determination of mass concentration of particulate matter (dust) at low concentrations -- Manual gravimetric method |
| 11 | <u>KS ISO 14164</u> : Stationary source emissions -- Determination of the volume flow rate of gas streams in ducts -- Automated method |
| 12 | <u>KS ISO 15713</u> : Stationary source emissions -- Sampling and determination of gaseous fluoride content |
| 13 | <u>KS ISO 7708</u> : Air quality -- Particle size fraction definitions for health-related sampling |
| 14 | <u>KS ISO 11041</u> : Workplace air -- Determination of particulate arsenic and arsenic compounds and arsenic trioxide vapour -- Method by hydride generation and atomic absorption spectrometry |
| 15 | <u>KS ISO 11174</u> : Workplace air -- Determination of particulate cadmium and cadmium compounds -- Flame and electrothermal atomic absorption spectrometric method |

| | Standard |
|----|--|
| 16 | <u>KS ISO 15202-1</u> : Workplace air -- Determination of metals and metalloids in airborne particulate matter by inductively coupled plasma atomic emission spectrometry -- Part 1: Sampling |
| 17 | <u>KS ISO 15202-2</u> : Workplace air -- Determination of metals and metalloids in airborne particulate matter by inductively coupled plasma atomic emission spectrometry -- Part 2: Sample preparation |
| 18 | <u>KS ISO 15202-3</u> : Workplace air -- Determination of metals and metalloids in airborne particulate matter by inductively coupled plasma atomic emission spectrometry -- Part 3: Analysis |
| 19 | <u>KS ISO 15767</u> : Workplace atmospheres -- Controlling and characterizing errors in weighing collected aerosols |
| 20 | <u>KS ISO 16107</u> : Workplace atmospheres -- Protocol for evaluating the performance of diffusive samplers |
| 21 | <u>KS ISO 16200-1</u> : Workplace air quality -- Sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography -- Part 1: Pumped sampling method |
| 22 | <u>KS ISO 16200-2</u> : Workplace air quality -- Sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography -- Part 2: Diffusive sampling method |
| 23 | <u>KS ISO 16702</u> : Workplace air quality -- Determination of total isocyanate groups in air using 2-(1-methoxyphenyl) piperazine and liquid chromatography |
| 24 | <u>KS ISO 16740</u> : Workplace air -- Determination of hexavalent chromium in airborne particulate matter -- Method by ion chromatography and spectrophotometric measurement using diphenyl carbazide |
| 25 | <u>KS ISO 17733</u> : Workplace air -- Determination of mercury and inorganic mercury compounds -- Method by cold-vapour atomic absorption spectrometry or atomic fluorescence spectrometry |
| 26 | <u>KS ISO 17734-1</u> : Determination of organonitrogen compounds in air using liquid chromatography and mass spectrometry -- Part 1: Isocyanates using dibutylamine derivatives |
| 27 | <u>KS ISO 17734-2</u> : Determination of organonitrogen compounds in air using liquid chromatography and mass spectrometry -- Part 2: Amines and aminoisocyanates using dibutylamine and ethyl chloroformate derivatives |
| 28 | <u>KS ISO 20552</u> : Workplace air -- Determination of mercury vapour -- Method using gold-amalgam collection and analysis by atomic absorption spectrometry or atomic fluorescence spectrometry |
| - | <u>KS ISO 4224</u> : Ambient air -- Determination of carbon monoxide -- Non-dispersive infrared spectrometric method |
| 30 | <u>KS ISO 6767</u> : Ambient air -- Determination of the mass concentration of sulfur dioxide -- Tetrachloromercurate (TCM)/pararosaniline method |
| 31 | <u>KS ISO 7996</u> : Ambient air -- Determination of the mass concentration of nitrogen oxides -- Chemiluminescence method |

| | Standard |
|----|---|
| 32 | KS ISO 8186 : Ambient air -- Determination of the mass concentration of carbon monoxide -- Gas chromatographic method |
| 33 | KS ISO 10312 : Ambient air -- Determination of asbestos fibres -- Direct transfer transmission electron microscopy method |
| 34 | KS ISO 10313 : Ambient air -- Determination of the mass concentration of ozone -- Chemiluminescence method |
| 35 | KS ISO 10473 : Ambient air -- Measurement of the mass of particulate matter on a filter medium -- Beta-ray absorption method |
| 36 | KS ISO 10498 : Ambient air -- Determination of sulfur dioxide -- Ultraviolet fluorescence method |
| 37 | KS ISO 12884 : Ambient air -- Determination of total (gas and particle-phase) polycyclic aromatic hydrocarbons -- Collection on sorbent-backed filters with gas chromatographic/mass spectrometric analyses |
| 38 | KS ISO 13794 : Ambient air -- Determination of asbestos fibres -- Indirect-transfer transmission electron microscopy method |
| 39 | KS ISO 13964 : Air quality -- Determination of ozone in ambient air -- Ultraviolet photometric method. |
| 40 | KS ISO 14965 : Air quality -- Determination of total non-methane organic compounds -- Cryogenic pre-concentration and direct flame ionization detection method |
| 41 | KS ISO 14966 : Ambient air -- Determination of numerical concentration of inorganic fibrous particles -- Scanning electron microscopy method |
| 42 | KS ISO 16362 : Ambient air -- Determination of particle-phase polycyclic aromatic hydrocarbons by high performance liquid chromatography |
| 43 | KS ISO 7168-1 : Air quality -- Exchange of data -- Part 1: General data format |
| 44 | KS ISO 7168-2 : Air quality -- Exchange of data -- Part 2: Condensed data format |
| 45 | KS ISO 9169 : Air quality -- Definition and determination of performance characteristics of an automatic measuring system |
| 46 | KS ISO 11222 : Air quality -- Determination of the uncertainty of the time average of air quality measurements |
| 47 | KS ISO 13752 : Air quality -- Assessment of uncertainty of a measurement method under field conditions using a second method as reference |
| 48 | KS ISO 14956 : Air quality -- Evaluation of the suitability of a measurement procedure by comparison with a required measurement uncertainty |
| 49 | KS ISO 20988 : Air quality -- Guidelines for estimating measurement uncertainty |
| 50 | KS ISO 16622 : Meteorology -- Sonic anemometers/thermometers -- Acceptance test methods for mean wind measurements |
| 51 | KS ISO 17713-1 : Meteorology -- Wind measurements -- Part 1: Wind tunnel test methods for rotating anemometer performance |

| | Standard |
|----|---|
| 52 | <u>KS ISO 17714</u> : Meteorology -- Air temperature measurements -- Test methods for comparing the performance of thermometer shields/screens and defining important characteristics |
| 53 | <u>KS ISO 16000-1</u> : Indoor air -- Part 1: General aspects of sampling strategy |
| 54 | <u>KS ISO 16000-2</u> : Indoor air -- Part 2: Sampling strategy for formaldehyde |
| 55 | <u>KS ISO 16000-3</u> : Indoor air -- Part 3: Determination of formaldehyde and other carbonyl compounds -- Active sampling method |
| 56 | <u>KS ISO 16000-4</u> : Indoor air -- Part 4: Determination of formaldehyde -- Diffusive sampling method |
| 57 | <u>KS ISO 16000-5</u> : Indoor air -- Part 5: Sampling strategy for volatile organic compounds (VOCs) |
| 58 | <u>KS ISO 16000-6</u> : Indoor air -- Part 6: Determination of volatile organic compounds in indoor and test chamber air by active sampling on Tenax TA sorbent, thermal desorption and gas chromatography using MS/FID |
| 59 | <u>KS ISO 16000-8</u> : Indoor air -- Part 8: Determination of local mean ages of air in buildings for characterizing ventilation conditions |
| 60 | <u>KS ISO 16000-9</u> : Indoor air -- Part 9: Determination of the emission of volatile organic compounds from building products and furnishing -- Emission test chamber method |
| 61 | <u>KS ISO 16000-10</u> : Indoor air -- Part 10: Determination of the emission of volatile organic compounds from building products and furnishing -- Emission test cell method |
| 62 | <u>KS ISO 16000-11</u> : Indoor air -- Part 11: Determination of the emission of volatile organic compounds from building products and furnishing -- Sampling, storage of samples and preparation of test specimens |
| 63 | <u>KS ISO 16017-1</u> : Indoor, ambient and workplace air -- Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography -- Part 1: Pumped sampling |
| 64 | <u>KS ISO 16017-2</u> : Indoor, ambient and workplace air -- Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography -- Part 2: Diffusive sampling |
| 65 | KS ISO 4219: Air quality - Determination of gaseous sulphur compounds in ambient air - Sampling equipment |
| 66 | KS ISO 4220: Ambient air - Determination of a gaseous acid air pollution index - Titrimetric method with indicator or potentiometric end-point detection. |
| 67 | KS ISO 4221: Air quality - Determination of a mass concentration of sulphur dioxide in ambient air - Thorin spectrophotometric method |
| 68 | KS ISO 4225: Air quality - General aspects - Vocabulary |
| 69 | KS ISO 4226: Air quality - General aspects - Units of measurement |

| | Standard |
|----|--|
| 70 | KS ISO 6768: Ambient air - Determination of the mass concentration of nitrogen dioxide - modified Griess - Saltzman method |
| 71 | KS ISO 7934: Stationary source emissions - Determination of the mass concentration of sulphur dioxide - Hydrogen peroxide / barium perchlorate – Thorin method |
| 72 | KS ISO 8518: Workplace air - Determination of particulate lead and lead compounds - Flame or electrothermal atomic absorption spectrometric method |
| 73 | KS ISO 8672: Air quality - Determination of the number concentration of airborne inorganic fibres by phase contrast optical microscopy - Membrane filter method |
| 74 | KS ISO 8756: Air quality - Handling of temperature, pressure and humidity data |
| 75 | KS ISO 8760: Workplace air - Determination of mass concentration of carbon monoxide - Method using detector tubes for short -term sampling with direct indication |
| 76 | KS ISO 8761: Workplace air - Determination of mass concentration of nitrogen dioxide - Method using detector tubes for short -term sampling with direct indication |
| 77 | KS ISO 8762: Workplace air - Determination of vinyl chloride - Charcoal tube / gas chromatographic method |
| 78 | KS ISO 9096: Stationary source emissions - Determination of the concentration and mass flow rate of particulate material in gas-carrying ducts – Manual gravimetric method |
| 79 | KS ISO 9359: Air quality - Stratified sampling method for assessment of ambient air quality |
| 80 | KS ISO 9486: Workplace air - Determination of vaporous chlorinated hydrocarbons - Charcoal tube / solvent desorption / gas chromatographic method |
| 81 | KS ISO 9487: Workplace air - Determination of vaporous aromatic hydrocarbons - Charcoal tube / solvent desorption / gas chromatographic method |
| 82 | KS ISO 9835: Ambient air - Determination of a black smoke index |
| 83 | KS ISO 9855: Ambient air - Determination of the particulate lead content of aerosols collected on filters - Atomic absorption spectrometric method |
| 84 | KS ISO 10396: Stationary source emissions - Sampling for the automated determination of gas concentrations |
| 85 | KS 2060: Motor gasolines - Specification |
| 86 | KS 1515: Code of practice for inspection of road vehicles |
| 87 | KS 03-1289: Specification for illuminating kerosene |
| 88 | KS 1309-1: Specification for diesel fuels - Part 1: Automotive gas oil. |
| 89 | KS 03-1309-2: Specification for diesel fuels - Part 2: Industrial diesel oil (IDO). |
| 90 | KS 03-1310: Specification for fuel oils |
| 91 | KS 03-91: Specification for liquefied petroleum gases (LPG). |

TWELFTH SCHEDULE

r. 27

ACCEPTABLE MOBILE EMISSION CONTROL TECHNOLOGIES

Mobile Sources

The aim of these guidelines is without sacrificing performance, improve engine performance through understanding pollutant formation mechanism, ensure precise control of engine parameters, such as air/fuel ratio, spark timing, airflow, optimize on exhaust gas treatment.

List of mobile emission control technologies

| Pollutant | Control measures |
|--------------------------|---|
| NO _x Exhaust | Exhaust Gas Recirculation (EGR) Valves |
| HC, CO Exhaust | Three Way Catalyst (TWC), 2 nd Air Pumps |
| Evaporative Emissions | Canisters |
| Crankcase e/m s | Positive Crankcase Valve PCV valves |
| On Board Display (Obd-2) | Precise a/f control |
| | Dual Oxygen Sensors |
| | Individual cylinder a/f control |
| | Adaptive fuel control |
| | Electronic throttle control |
| | Improved induction |
| | Heat optimized exhaust system |
| | Leak-free exhaust system |
| Particulate matter | Diesel Oxidation Catalyst (DOC) |
| | Diesel particulate filter (DPF) |
| | Flow Through Filter (FTF) |
| | Retrofit, Repower, or Replace |

And any other technology that may be approved by the Authority from time to time

List of evaporative emission control technologies

| Cause | Measure |
|-----------------------------|--|
| 1 Diffusion | Precise purge control and optimization of canister structure |
| 2 Leakage | Modification of designs for locking parts and fuel filler cap |
| 3 Permeation | Material changes for hoses in fuel line |
| 4 Evaporation while fueling | Improve sealing by putting elastic cap around the nozzle of fueling gun |
| | Create negative pressure while fuelling by using the venturi effect |
| 5 Fuel Temperature | Reduce the fuel amount returning to fuel tank Limit the fuel tank temperature |

THIRTEENTH SCHEDULE

r. 85

FEES

The fees chargeable under these Regulations shall be as specified hereafter.

- (a) Application for:
- (i) Emission Licence for listed emitting facility - *KShs.5,000/=*
 - (ii) Emission Licence for other emitting facility than (i) above - *KShs.5,000/=*
 - (iii) Variation of emission licence : *KShs.3,000/=*
 - (iv) Transfer of emission licence - *KShs.3,000/=*
- (b) Annual Licence fee for Emission into the atmosphere
- (i) Facility listed in ^{14th} schedule under category I - *KShs.50,000/=*
 - (ii) Facility listed in ^{14th} schedule under category II - *KShs.30,000/=*
 - (iii) Polluting facility not in ^{14th} Schedule other than (i) and (ii) above - *KShs.20,000/=*
- (c) Variation of emission Licence is 10% of the Annual Licence fee
- (a) Application fees for mobile source testing centres; - 50,000/-
 - (b) Annual operational license for mobile source testing centres – 100,000/-
 - (c) Mobile Source Operator or owner Emission testing fee to be charged by the Designated Testing Centres for each mobile source as follows

| | Mobile source | Kshs |
|------|---|----------------------|
| i. | Motorcycles and tricycles | 1,000/- |
| ii. | Motor vehicles less than 3.5 tonne in tare weight | 5,000/- |
| iii. | Motor Vehicles exceeding 3.5 tonne but less than 7 tonne in tare weight | 10,000/- |
| iv. | Motor vehicles exceeding 7 tonne in tare weight | 20,000/- |
| v. | Locomotives | 30,000/- |
| vi. | Marine and Freshwater Vessels- Motorized boats Ships and ferries | 10,000/- 50,000/- |
| vii. | Aircrafts | 50,000/- |

Pollution tax

- a) A deviation of 10% from the emission limits shall attract an additional 100% of total cost of the emission testing fee.
- b) Any incremental deviation for every 10% or part thereof shall attract an additional kshs. 20,000

FOURTEENTH SCHEDULE

r. 14

LIST OF CONTROLLED FACILITIES

Part I

Fertilizer manufacturing plants

- (b) Lead recycling plants
- (c) Grain millers
- (d) Hot mix asphalt batching plants
- (e) Incinerators
- (f) Iron and steel mills;
- (f) Kraft pulp mills;
- (g) Manufacture of soda ash
- (h) Mineral processing and production plants;
- (i) Paint manufacturing plants
- (j) Pesticide formulation and manufacturing plants
- (k) Petroleum refineries and depots;
- (l) Pharmaceutical industries
- (m) Phosphate rock processing plants;
- (n) Portland cement plants (clinker plants included);
- (o) Sulphur recovery plants;
- (p) Sulphuric, or nitric acid plants;
- (q) Thermal power plants
- (s) Any other chemical processing industry
- (t) (Pyrolysis
- (u) Hydrocarbon recycling plant
- (v) Copper smelting (primary and secondary)
- (w) Gold mine ores processing plant
- (x) Upstream petroleum facilities

Edible oil processing plants

Tanneries

Sugar processing plants

Coal plants

Quarry operations

Any other facility that the Authority may prescribe

Part II

- i. Iron recycling plants;
- ii. Secondary aluminium production plants;
- iii. Plastic recycling plants;
- iv. Textile industries
- v. Tea processing plants
- vi. Midstream petroleum facilities
- vii. Crematoria
- viii. Any other facility that the Authority may prescribe

Part III

- Stockpiling or storage of materials
- Major construction sites
- Outdoor spraying/painting
- Any other facility that the Authority may prescribe
- b. Mobile Sources

PART I - Vehicles

- Cars,
- Trucks, Motorcycles
- Tricycles

PART II - marine vessels

PART III – locomotives

PART IV - Aircrafts

FIFTEENTH SCHEDULE

(r. 55(3))

Code of Conduct for Designated and Licensed air quality measurement Laboratories

| No. | Item | Subject Matter |
|-----|------------------------------|---|
| 1 | Citation | This may be cited as the code of conduct for air quality measurement laboratories |
| 2 | Application | This code of conduct shall apply to all designated and licensed air quality measurement laboratories |
| 3 | Fundamental Principles | Designated and licensed air quality measurement Laboratories shall; <ul style="list-style-type: none"> a) Uphold and advance integrity in the conduct of their work b) Be professional and honest in their service to clients c) Shall avoid conflicts of interest. d) Subject their emission measurement staff to at least two refresher courses annually within their scope of designation |
| 4 | Obligations to Clients | Designated and licensed Laboratories shall; <ul style="list-style-type: none"> a. Act in professional manner to client b. Not solicit or accept financial or other valuable consideration, directly or indirectly, from clients or other parties in connection with work for employers or clients for which they are responsible. c. Not disclose facts, data or information obtained in a professional capacity without the prior consent of the client. d. Not falsify or misrepresent data e. Interpret issues to the client and offer advice in an objective and truthful manner |
| 5 | Obligations to the Authority | The designated and licensed Laboratory shall ensure that; <ul style="list-style-type: none"> i. Only competent personnel identified in the designation process are involved in the testing and approval of the analysis report ii. Any change in the competent personnel is duly approved by the Authority iii. Only equipment evaluated for the laboratory is used for the relevant measurements iv. Where subcontracting is undertaken of the equipment the analysis results will be countersigned by the subcontracted laboratory |

| | | |
|---|--------------------------------|--|
| | | <p>v. Emissions measurements are conducted for only parameters relevant for the sector</p> <p>vi. All equipment used in testing for the particular parameters are validly calibrated</p> <p>vii. Emissions tests are done in line with methods set in this Regulations</p> <p>viii. Emission measurement results are not falsified</p> |
| 6 | Consequences of non-compliance | Any designated laboratory which contravenes this code of conduct risks having its designation withdrawn by the Director General. |

Made on the 14th October, 2024.

ADEN DUALE,
*Cabinet Secretary Ministry of Environment,
Climate Change and Forestry.*

LEGAL NOTICE NO. 181

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION
ACT

(Cap. 387)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION
(MANAGEMENT AND CONTROL OF PLASTIC PACKAGING
MATERIALS) REGULATIONS, 2024

ARRANGEMENT OF REGULATIONS

Regulation

PART I – PRELIMINARY

- 1—Citation.
- 2—Interpretation.
- 3—Objective of the Regulations.
- 4—Application.
- 5—Collaboration with lead agencies.

PART II – REGULATION AND EXEMPTION

- 6—Prohibition.
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THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION
ACT

(Cap. 387)

IN EXERCISE of the powers conferred by section 147 of the Environmental Management and Co-ordination Act, the Cabinet Secretary for Environment, Climate Change and Forestry makes the following Regulations—

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION
(MANAGEMENT AND CONTROL OF PLASTIC PACKAGING
MATERIALS) REGULATIONS, 2024

PART I— PRELIMINARY

1. These Regulations may be cited as the Environmental Management and Co-ordination (Management and Control of Plastic Packaging Materials) Regulations, 2024.

Citation.

2. In these Regulations, unless the context otherwise requires—

Interpretation.

“carrier bag” means a plastic bag, constructed with or without handles, and supplied to consumers at the point of sale of goods or products;

“export” means to take or cause to be taken out of Kenya any plastic packaging material;

“extended producer responsibility” has the meaning assigned to it under the Sustainable Waste Management Act;

Cap. 387C.

“flat bag” means a plastic bag constructed without handles and with or without gussets;

“gussets” means an extension of a bag on the sides or bottom that allow packaging of thicker or bulkier items having extra material on the side or bottom that expands;

“handles” means holes or holding support of a bag or the crotch or handle bracket;

“industrial packaging” means packaging of goods during or after the manufacturing process;

“import” means to bring or cause to be brought into Kenya of any plastic packaging material from a foreign country;

“manufacture” means the transformation of raw material into finished goods for sale, or other use including intermediate processes involving production or finishing or semi-manufactured goods;

“non-industrial packaging” means packaging of the items listed in the First Schedule;

“plastic bag” means a carrier bag or flat bag made from any polymer including polyethylene, polypropylene, polyethylene terephthalate that could be laminated or non-laminated, film or fabric, woven or non-woven;

“plastic film” means flexible plastic of thickness of up to 250 microns which could be simple or complex depending on a particular product or package;

“plastic packaging material” means flat plastic bags and plastic film;

“polymer” means a large molecule composed of repeating structural units typically connected by covalent chemical bonds;

“producer responsibility organization” means a collective entity set up by manufacturers, users and importers which is approved by the Authority and becomes responsible for meeting the collection and recycling obligations of the individual manufacturers, users and importers;

“Resin Identification Codes” means symbols appearing on plastic products that identify the plastic resin out of which the product is made; and

“user” means industries, individuals or other outlets who use plastic carrier bags or plastic packaging materials to pack, re-pack or wrap products to deliver goods to consumers.

3. The objective of these Regulations shall be to—

- (a) establish a framework for the management and control of the use of plastic packaging material;
- (b) promote the use of environmentally-friendly packaging material;
- (c) preserve and promote a clean and healthy environment for sustainable development; and
- (d) promote the recycling of plastic packaging material.

Objective of the Regulations.

4. (1) These Regulations shall apply to—

- (a) all plastic carrier bags and plastic packaging materials; and
- (b) all plastic packaging materials on imported products.

Application.

(2) These Regulations shall apply in addition to any other requirements imposed by or under the Act or any other written law.

5. The Authority may collaborate with lead agencies to ensure the effective implementation of these Regulations.

Collaboration with lead agencies.

PART II — REGULATION AND EXEMPTION

6. (1) A person shall not manufacture, import, export, possess, use or offer for sale a flat bag, plastic bag or plastic film without authorization from the Authority.

Prohibition.

(2) Notwithstanding sub-regulation (1), the Authority may authorize the manufacture, import, export or use of plastic packaging materials for industrial packaging and non-industrial packaging of the items specified in the First Schedule.

7. (1) A person who wishes to manufacture, import, export, possess, use or offer for sale flat plastic bags or plastic films shall apply to the Authority for a licence in Form A as set out in the Second Schedule.

Authorization to manufacture, import, use or export plastic flat bags and plastic film products.

(2) The application under sub-regulation (1) shall be accompanied by an extended producer responsibility plan and the fee prescribed in the Third Schedule.

(3) An applicant may specify the portion of information that should be treated as confidential by the Authority during the consideration of the application under sub-regulation (1).

(4) The Authority shall, within twenty-one days of receiving the application under sub-regulation (1), determine the application and communicate, in writing, to the applicant.

(5) The Authority may, in considering an application—

- (a) approve the application;
- (b) request for further particulars from the applicant; or
- (c) reject the application.

8. The Authority shall, after approving an application, issue a licence in Form B set out in the Second Schedule on such terms and conditions as may be appropriate to facilitate sustainable development and sound environmental management.

Issuance of licence.

9. A licence issued under regulation 8 shall be valid for a period of twelve months.

Validity of licence.

10. The Authority may suspend, revoke or cancel a licence issued under regulation 8 where—

Suspension, cancellation or revocation of a licence.

- (a) the licensee contravenes any conditions of the licence;
- (b) the plastic packaging material to which the licence relates poses an environmental threat which could not be reasonably foreseen before the licence was issued; or
- (c) it is established that the information given by the applicant in support of the application under regulation 7 was false, incorrect or intended to mislead.

11. An applicant who is aggrieved by any decision of the Authority under these Regulations may appeal to the National Environment Tribunal within sixty days of delivery of the decision.

Appeals against decisions of the Authority.

12. The Authority shall deposit all fees collected under regulation 7(2) into the National Environmental Restoration Fund.

Fees to be deposited in Environmental Restoration Fund.
Register of licences.

13. (1) The Authority shall maintain a register of all licences issued under these Regulations.

(2) The register shall be a public document and may be inspected by any person at any reasonable time.

14. In determining whether to issue a licence under these Regulations, the Authority shall be guided by the following criteria—
- Criteria for authorization.
- (a) the degree of recyclability of the plastic packaging material;
 - (b) whether the plastic packaging material is required for product preservation and public health concerns;
 - (c) whether the plastic packaging material is required as a security measure;
 - (d) whether the plastic packaging material is required for water and dust proofing;
 - (e) whether the plastic packaging material is required to maintain product integrity while on transit;
 - (f) whether the plastic packaging material constitutes over-packaging or not;
 - (g) whether there is any other reasonably feasible non-plastic alternative packaging material;
 - (h) whether the plastic packaging material is in accordance with any international rules and standards applicable in Kenya;
 - (i) whether the plastic packaging material for export is in accordance with relevant standards and requirements of the country where the good is being exported to; and
 - (j) whether or not the plastic packaging material is used in conformity with an industry standard for which there is no viable alternative.

PART III— MANAGEMENT OF PLASTIC PACKAGING MATERIALS

15. (1) In addition to the provisions of any other written law relating to extended producer responsibility—
- Extended Producer Responsibility Plan.
- (a) each manufacturer, importer or user of plastic packaging materials shall develop and maintain an extended producer responsibility plan to support the collection, reduction, re-use, recycling, recovery, treatment and disposal of plastic packaging materials and the waste therefrom and submit a copy of the plan to the Authority for approval;
 - (b) each manufacturer, importer or user of plastic packaging material may develop and implement the extended producer responsibility plan individually, jointly with other manufacturers, importers or users or through an extended producer responsibility organization; and
 - (c) the extended producer responsibility shall include—
 - (i) a description of the distribution coverage of the plastic packaging material or product wrapped with plastic packaging material, whether countrywide or regionally;

- (ii) the mode of the distribution network, whether to production entities or direct consumers, factory-owned distribution or agent distribution or retail collection or a mixture thereof;
- (iii) an indication of the estimated quantities of plastic packaging material to be released into Kenya;
- (iv) a description of the programs for the reduction, re-use, recycling, recovery, treatment and disposal of plastic packaging materials and their waste to be implemented including collection sites and implementation plans;
- (v) a description of the performance measures to document and demonstrate plastic packaging material reduction, re-use, recycling and recovery efforts;
- (vi) a description of the monetary and non-monetary measures for supporting the plan; and
- (vii) a public education plan on the re-use and recycling of plastic packaging materials.

(2) During the preparation of the extended producer responsibility plan, the manufacturer, importer and user shall seek the views of persons who may be affected by the plan.

16. A person who manufactures, imports, exports, or offers for sale plastic packaging materials shall submit an annual report to the Authority that includes a description of the status and implementation of the extended producer responsibility plan that includes —

Extended producer responsibility plan report.

- (a) information relating to the collection locations for plastic packaging materials and the processing locations for collected plastic packaging materials;
- (b) the total weight in kilograms of plastic packaging materials introduced in Kenya by that person;
- (c) the total weight in kilograms of plastic packaging materials collected and processed for recycling;
- (d) the proportions of pre-consumer recycled content and post-consumer recycled content in the plastic packaging materials introduced in Kenya by that person; and
- (e) samples of the education materials provided to consumers.

17. (1) A person who manufactures, imports, exports, or offers for sale plastic packaging materials shall conduct and document due diligence assessment of any person with whom that person contracts to—

Due diligence.

- (a) implement the extended producer responsibility plan;
- (b) manage a recycling collection center;
- (c) collect, process or transport plastic bags or plastic film product wrap; or

(d) recycle plastic packaging materials.

(2) Upon completion of due diligence under sub-regulation (1), that person shall prepare a due diligence report and submit the same to the supervising entity for review.

(3) Where the due diligence report is found to be satisfactory, a “no objection” for the proposal to proceed to full design will be issued within seven days.

18. (1) Each person who sells plastic packaging materials in Kenya shall label each bag to identify the recycled content in the bag. Recycled content.

(2) Each manufacturer of plastic packaging materials shall ensure that the materials are made up of at least thirty percent total recycled material in cases where recyclable content is required to make up part of the materials.

19. The Authority shall publish on its website— Publication.

(a) a list of licensed producer responsibility organizations and their addresses; and

(b) the location of collection centres identified by persons who manufacture, import, export, or offer for sale plastic packaging in their extended producer responsibility plans and annual reports.

20. (1) A person shall not sell or offer for sale plastic packaging materials in Kenya unless the name and contacts of that person are printed on the materials. Labelling.

(2) The Authority may, on the application of a person who intends to sell or offer for sale plastic packaging materials in Kenya, approve the use of any other identifiable mark in place of the contact details of that person.

(3) A person shall not sell or offer for sale plastic packaging materials in Kenya unless—

(a) the plastic packaging materials are clearly marked recyclable or non-recyclable with Resin Identification Codes;

(b) the details of the prices and buying location are printed on the plastic packaging materials where the materials have a buy back scheme; and

(c) the percentage of the recycled content is printed on the plastic packaging materials where the materials are made from recycled content.

(4) A person who fails to comply with this regulation commits an offence.

21. (1) A person shall not purchase plastic packaging materials directly from any other person for use or distribution in Kenya unless— Prohibition on purchase of plastic packaging materials.

(a) that other person has been licensed by the Authority in accordance with regulation 7; and

(b) the name of that other person is printed on the materials in accordance with regulation 16.

(2) A person who fails to comply with this regulation commits an offence.

PART IV—RECORDS AND INSPECTION

22. (1) Every manufacturer, importer, exporter and user of plastic packaging materials shall keep a record of the quantities of plastic packaging materials manufactured, exported, imported or used annually by that manufacturer, importer, exporter or user.

Record Keeping.

(2) Every manufacturer, importer, exporter and user of plastic packaging materials shall submit the records kept under sub-regulation (1) to the Authority annually in the format set out in the Fourth Schedule.

23. (1) Every importer of plastic packaging materials shall declare, at the port of entry in Kenya, the quantities and purpose of the plastic packaging materials being imported.

Declaration at the point of entry.

(2) An importer who fails to comply with the provisions of sub-regulation (1) commits an offence.

PART V— OFFENCES AND PENALTIES

24. (1) A person who manufactures, imports, exports, uses, sells, offers for sale or possess plastic carrier bag without a licence commits an offence and shall, on conviction, be liable to the penalties set out in section 144 of the Act.

Offences.

(2) A person who manufactures, imports, exports, uses, sells or offers for sale plastic flat bags without authorization commits an offence and shall, on conviction, be liable to the penalties set out under section 144 of the Act.

(3) A person who manufactures, imports, exports, uses, sells or offers for sale plastic film product without authorization commits an offence and shall, on conviction, be liable to the penalties set out under section 144 of the Act.

PART VI— TRANSITIONAL PROVISIONS

25. Each manufacturer, importer, seller or user in possession of plastic packaging materials shall, within one month of the commencement of these Regulations—

Transitional provisions.

(a) declare the stock of plastic packaging materials to the Authority; and

(b) comply with these Regulations.

FIRST SCHEDULE

(r. (2),6(2))

ITEMS FOR NON-INDUSTRIAL PACKAGING

1. Materials used in the construction sector.
2. Materials used in the agricultural sector.
3. Materials used for manufacture of tents.
4. Materials used in mechanical and machine parts.
5. Materials used for packaging of household wares and packaging.
6. Garbage bags and bin liner bags.
7. Caution tapes.
8. Vegetable and food packing bags.
9. Diaper and sanitary disposal bags.
10. Any other material that may be determined by the Authority from time to time

SECOND SCHEDULE

(r. 7(1), 8)

FORM A

APPLICATION FOR LICENCE TO MANUFACTURE, IMPORT, EXPORT OR USE OF PLASTIC PACKAGING MATERIAL FOR INDUSTRIAL AND NON-INDUSTRIAL PACKAGING

Application reference No.....

(For official use)

Part A: DETAILS OF THE APPLICANT

- A1. Name (Individual Firm)
- A2. Business Registration No.
- A3. Address:
- A4. Name of contact person
- A5. Position of contact person
- A6. Address of contact person
- Telephone No.
- Email:

PART B: CATEGORY OF EXEMPTION BEING SOUGHT

B1. Manufacturer Importer User |

B2. Nature of the plastic packaging material for which authority is sought—

- (a) Printed flat bags for industrial packaging;
- (b) Printed flat bags for non-industrial packaging;
- (c) Printed courier bags;
- (d) Printed hazardous/biomedical waste plastic liners;
- (e) Printed garbage bags;
- (f) Plastic film;
- (g) Other (specify)

B3. Product to be packaged in the plastic packaging material – (attach list where necessary)

.....

B4. Certification by the Kenya Bureau of Standards (KEBS) [where applicable]

(Attach evidence)

-
B5. Source of the plastic packaging material (for non-manufacturers)
.....
- B6. Quantity applied for
.....
- B7. Expected duration of use/consumption per month
.....
- B8. Expected normal points of use
.....
- B9. Extended producer/plan to be put in place to manage the resultant waste from the plastic packaging materials (Attach the Extended Producer Plan)
.....

Part C: DECLARATION BY APPLICANT

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. I understand my clearance may be suspended, varied or cancelled if any information given above is false, misleading, wrong or incomplete.

Name

Position

Signature..... Date

Company/ Entity name and Seal/Stamp

Part F: OFFICIAL USE

Approved / Not approved

Comments

Officer.....Signature.....Date.....

Important Note:

Please submit 1(one) copy of this completed Form and all the requisite documentary evidence to:

The Director-General,
National Environment Management Authority

FORM B

(r. 7(7))

LICENCE TO MANUFACTURE, IMPORT, EXPORT OR USE OF PLASTIC
PACKAGING MATERIAL FOR INDUSTRIAL AND NON-INDUSTRIAL
PACKAGING

Licence No:

This is to certify that (name and address).....is hereby issued
with a licence to..... plastic flat bags/Plastic film for the
purpose of

This license is valid for a period of 1 (one) year with effect from.....

Dated this..... day..... of 20.....

Signature.....

(seal)

Director General
The National Environment Management Authority

CONDITIONS OF THE LICENCE

1.....

2.....

FORM C

(r. 11(2))

APPLICATION FOR A PRODUCER RESPONSIBILITY ORGANISATION

Part A: DETAILS OF THE APPLICANT

- A1. Name (Organization)
- A2. Business Registration No.
- A3. Address
- A4. Name of contact person
- A5. Position of contact person
- A6. Address of contact person

Part B: PLASTIC PACKAGING MATERIALS MANAGEMENT

1. Registration number and type of vehicles to transport plastic packaging materials
2. Quantity of plastic packaging materials per vehicle to be transported
3. Licensed sites/plant to which plastic packaging materials are to be transported
4. Collection schedule
5. Any other information
6. Is Application for: Initial licence Renewal
7. Previous License Number
- Date Signature
- Telephone No.
- E-mail:

PART C: NATURE OF EXTENDED PRODUCER RESPONSIBILITIES AGREEMENTS

1. Agreement/Contracts of entities enlisted for this service for plastic packaging materials
2. Nature of products to be collected
3. Physical Location of the facility
4. Documentation for the collection, sorting and recycling of packaging waste
5.
- B3. Period of the of the licence
- Date issued
- Expiry date

Part D: DECLARATION BY APPLICANT

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief.

Name

Position

Signature..... Date

Company/ Entity name and Seal/Stamp

Part E: OFFICIAL USE

Receiving officer.....Signature.....Date.....

The Director-General,
National Environment Management Authority

FORM D

(r. 11(4))

LICENCE FOR A PRODUCER RESPONSIBILITY ORGANISATION

Licence No.

This is to certify that (name and address).is a registered Producer Responsibility Organization licenced to provide extended producer responsibility services to—

- a. Collect []
- b. Sort []
- c. Recycle []
- d. Package waste []

This licence is valid for a period of 1 (one) year with effect from.....

Dated this..... day..... of 20.....

Signature.....(seal)

Director General
The National Environment Management Authority

CONDITIONS OF THE LICENCE

- 1.....
- 2.....

FORM E

(r. 21(2))

Seizure Form

At..... (Time) on (Date)

At (location)

.....
.....
.....

Officer's full name

From (give address of NEMA Office)

.....
.....

being an Environmental inspector appointed and gazette under section 117 (1) of the Environmental Management Co-ordination Act 1999 and having entered land / premises/vessel/motor vehicle/ox-drawn cart, other (specify).....at above time, date and location did seize from (specify from whom or where seized)-

Name/address

Items seized

.....
.....
.....

Being an article/vessel/motor vehicle/plant/substance/any other thing (specify)..... which I reasonably believed to have been used in the commission of an offence under the Act or regulations thereunder.

Signed (inspector).....Date.....

Print name.....

Delete as appropriate

THIRD SCHEDULE

*(r. 7(2))*APPLICATION FEES MANUFACTURE, IMPORT, EXPORT OR USE OF PLASTIC
PACKAGING MATERIALS FOR INDUSTRIAL AND NON- INDUSTRIAL
PACKAGING.

| Item | Total quantities of plastic packaging materials imported/exported/manufactured/used per annum (Kilograms) | Fees (Ksh.) |
|------|---|-------------|
| 1. | 1- 500,000 | 10,000.00 |
| 2. | 501,000- 1,000,000 | 20,000.00 |
| 3. | Over 1,000,000 | 50,000.00 |

| Item | Total quantities of plastic packaging materials imported/exported/manufactured/used per annum In (kilograms) | Fees (Ksh.) |
|------|--|-------------|
| 1 | 1-50,000 | 3,000 |
| 2 | 51,000-100,000 | 5,000 |
| 3 | 101,000-500,000 | 10,000 |
| 4 | 501,000-1,000,000 | 20,000 |
| 5 | Over 1,000,000 | 50,000 |

FOURTH SCHEDULE

(r.22(2))

RECORD OF PLASTIC PACKAGING MATERIALS

PART A: DETAILS OF THE APPLICANT

- A1. Name (Individual or Firm
- A2. Business Registration No.
- A3. Address
- A4. Name of contact person
- A5. Position of contact person
- A6. Address of contact person
- Telephone No.
- E-mail:

PART B: CATEGORY OF EXEMPTION GRANTED

- B1. Manufacturer/Importer/User
- B2. Type of the plastic packaging material used
- B3. Period of the exemption
Date issued
- Expiry date
- B4. Quantity of the plastic packaging materials used in a given year.
.....
- B5. Destination of the plastic packaging material (Please state whether destined for local or international use)
.....

PART C: DECLARATION BY APPLICANT

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief.

- Name
- Position
- Signature..... Date
- Company/ Entity name and Seal/Stamp

PART D: OFFICIAL USE

- Receiving officer.....Signature.....Date.....

The Director-General,
National Environment Management Authority

Made on the 14th October, 2024.

ADEN DUALE,
*Cabinet Secretary for Environment,
Climate Change and Forestry.*