

L.N. 14 of 2013

**ENVIRONMENT AND DEVELOPMENT PLANNING ACT
(CAP. 504)**

**Industrial Emissions (Waste Incineration)
Regulations, 2013**

BY VIRTUE of the powers conferred by articles 2, 61, 64 and 66 of the Environment and Development Planning Act, the Minister for Tourism, Culture and the Environment, in consultation with the Malta Environment and Planning Authority, has made the following regulations:-

1. (1) The title of these regulations is the Industrial Emissions (Waste Incineration) Regulations, 2013. Citation and commencement.

(2) These regulations shall be deemed to have come into force on the 7th January, 2013.

2. (1) These regulations provide for the implementation in part of Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on Industrial Emissions (Integrated Pollution Prevention and Control) (Recast). Scope.

(2) These regulations also provide for the implementation of the Industrial Emissions (Framework) Regulations, 2013. L.N. 9 of 2013.

(3) These regulations shall apply to waste incineration plants and waste co-incineration plants which incinerate or co-incinerate solid or liquid waste.

(4) These regulations shall not apply to gasification or pyrolysis plants, if the gases resulting from this thermal treatment of waste are purified to such an extent that they are no longer a waste prior to their incineration and they can cause emissions no higher than those resulting from the burning of natural gas.

(5) For the purposes of these regulations, waste incineration plants and waste co-incineration plants shall include all incineration lines or co-incineration lines, waste reception, storage, on site pre-treatment facilities, waste-, fuel- and air-supply systems, boilers, facilities for the treatment of waste gases, on-site facilities for treatment or storage of residues and waste water, stacks, devices and systems for controlling incineration or co-incineration operations, recording and monitoring incineration or co-incineration conditions.

B 278

(6) If processes other than oxidation, such as pyrolysis, gasification or plasma process, are applied for the thermal treatment of waste, the waste incineration plant or waste co-incineration plant shall include both the thermal treatment process and the subsequent incineration process.

(7) If waste co-incineration takes place in such a way that the main purpose of the plant is not the generation of energy or production of material products but rather the thermal treatment of waste, the plant shall be regarded as a waste incineration plant.

Exclusions.

3. These regulations shall not apply to the following plants:

(a) plants treating only the following wastes:

L.N. 9 of 2013.

(i) waste listed in the paragraph (b) of the definition of biomass laid down in regulation 5 of the Industrial Emissions (Framework) Regulations, 2013;

(ii) radioactive waste;

(iii) animal carcasses as regulated by Regulation (EC) No 1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules concerning animal by-products not intended for human consumption;

(iv) waste resulting from the exploration for, and the exploitation of, oil and gas resources from off-shore installations and incinerated on board the installations;

(b) experimental plants used for research, development and testing in order to improve the incineration process and which treat less than 50 tonnes of waste per year.

Definition of residue.

4. For the purposes of these regulations, "residue" shall mean any liquid or solid waste which is generated by a waste incineration plant or waste co-incineration plant.

Applications for permits.

5. An application for a permit for a waste incineration plant or waste co-incineration plant shall include a description of the measures which are envisaged to guarantee that the following requirements are met:

(a) the plant is designed, equipped and will be maintained and operated in such a manner that the requirements of these regulations are met taking into account the categories of waste to be incinerated or co-incinerated;

(b) the heat generated during the incineration and co-incineration process is recovered as far as practicable through the generation of heat, steam or power;

(c) the residues will be minimised in their amount and harmfulness and recycled where appropriate;

(d) the disposal of the residues which cannot be prevented reduced or recycled will be carried out in conformity with national and European Union legislation.

6. (1) The permit shall include the following:

Permit
conditions.

(a) a list of all types of waste which may be treated using at least the types of waste set out in the European Waste List established by Decision 2000/532/EC, if possible, and containing information on the quantity of each type of waste, where appropriate;

(b) the total waste incinerating or co-incinerating capacity of the plant;

(c) the limit values for emissions into air and water;

(d) the requirements for the pH, temperature and flow of waste water discharges;

(e) the sampling and measurement procedures and frequencies to be used to comply with the conditions set for emission monitoring;

(f) the maximum permissible period of any technically unavoidable stoppages, disturbances, or failures of the purification devices or the measurement devices, during which the emissions into the air and the discharges of waste water may exceed the prescribed emission limit values.

(2) In addition to the requirements set out in sub-regulation (1), the permit granted to a waste incineration plant or waste co-incineration plant using hazardous waste shall include the following:

(a) a list of the quantities of the different categories of hazardous waste which may be treated;

(b) the minimum and maximum mass flows of those hazardous wastes, their lowest and maximum calorific values and their maximum contents of polychlorinated biphenyls, pentachlorophenol, chlorine, fluorine, sulphur, heavy metals

and other polluting substances.

(3) The competent authority may list the categories of waste to be included in the permit which can be co-incinerated in certain categories of waste co-incineration plants.

(4) The competent authority shall periodically reconsider and where necessary, update permit conditions.

Control of
emissions.

7. (1) Waste gases from waste incineration plants and waste co-incineration plants shall be discharged in a controlled way by means of a stack the height of which is calculated in such a way as to safeguard human health and the environment.

(2) (a) Emissions into air from waste incineration plants and waste co-incineration plants shall not exceed the emission limit values set out in Schedule 2 and Schedule 3 or determined in accordance with Schedule 3.

(b) If in a waste co-incineration plant more than 40% of the resulting heat release comes from hazardous waste, or the plant co-incinerates untreated mixed municipal waste, the emission limit values set out in Schedule 2 shall apply.

(3) Discharges to the aquatic environment of waste water resulting from the cleaning of waste gases shall be limited as far as practicable and the concentrations of polluting substances shall not exceed the emission limit values set out in Schedule 4.

(4) (a) The emission limit values shall apply at the point where waste waters from the cleaning of waste gases are discharged from the waste incineration plant or waste co-incineration plant.

(b) When waste waters from the cleaning of waste gases are treated outside the waste incineration plant or waste co-incineration plant at a treatment plant intended only for the treatment of this sort of waste water, the emission limit values set out in Schedule 4 shall be applied at the point where the waste waters leave the treatment plant. Where the waste water from the cleaning of waste gases is treated collectively with other sources of waste water, either on site or off site, the operator shall make the appropriate mass balance calculations, using the results of the measurements set out in point 3 of Schedule 5 in order to determine the emission levels in the final waste water discharge that can be attributed to the waste water arising from the cleaning of waste gases.

(c) Under no circumstances shall dilution of waste water take place for the purpose of complying with the emission limit

values set out in Schedule 4.

(5) (a) Waste incineration plant sites and waste co-incineration plant sites, including associated storage areas for waste, shall be designed and operated in such a way as to prevent the unauthorised and accidental release of any polluting substances into soil, surface water and groundwater.

(b) Storage capacity shall be provided for contaminated rainwater run-off from the waste incineration plant site or waste co-incineration plant site or for contaminated water arising from spillage or fire-fighting operations. The storage capacity shall be adequate to ensure that such waters can be tested and treated before discharge where necessary.

(6) (a) Without prejudice to regulation 11(4)(c), the waste incineration plant or waste co-incineration plant or individual furnaces being part of a waste incineration plant or waste co-incineration plant shall under no circumstances continue to incinerate waste for a period of more than four hours uninterrupted where emission limit values are exceeded.

(b) The cumulative duration of operation in such conditions over one year shall not exceed sixty hours.

(c) The time limit set out in the paragraph (b) shall apply to those furnaces which are linked to one single waste gas cleaning device.

8. In the case of a breakdown, the operator shall:

Breakdown.

(a) reduce or close down operations as soon as practicable until normal operations can be restored;

(b) notify the competent authority immediately.

9. (1) The competent authority shall ensure that the monitoring of emissions is carried out in accordance with Schedule 5 and Schedule 6.

Monitoring of emissions.

(2) The installation and functioning of the automated measuring systems shall be subject to control and to annual surveillance tests as set out in point 1 of Schedule 5.

(3) The competent authority shall determine the location of the sampling or measurement points to be used for monitoring of emissions.

B 282

(4) All monitoring results shall be recorded, processed and presented in such a way as to enable the competent authority to verify compliance with the operating conditions and emission limit values which are included in the permit.

Compliance
with emission
limit values.

10. The emission limit values for air and water shall be regarded as being complied with if the conditions described in Schedule 7 are fulfilled.

Operating
conditions.

11. (1) Waste incineration plants shall be operated in such a way as to achieve a level of incineration such that the total organic carbon content of slag and bottom ashes is less than 3% or their loss on ignition is less than 5% of the dry weight of the material. If necessary, waste pre-treatment techniques shall be used.

(2) (a) Waste incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the incineration of waste is raised, after the last injection of combustion air, in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850°C for at least two seconds.

(b) Waste co-incineration plants shall be designed, equipped, built and operated in such a way that the gas resulting from the co-incineration of waste is raised in a controlled and homogeneous fashion and even under the most unfavourable conditions, to a temperature of at least 850°C for at least two seconds.

(c) If hazardous waste with a content of more than 1% of halogenated organic substances, expressed as chlorine, is incinerated or co-incinerated, the temperature required to comply with the first and second subparagraphs shall be at least 1 100°C.

(d) In waste incineration plants, the temperatures set out in paragraphs (a) and (c) shall be measured near the inner wall of the combustion chamber. The competent authority may authorise the measurements at another representative point of the combustion chamber.

(3) (a) Each combustion chamber of a waste incineration plant shall be equipped with at least one auxiliary burner. This burner shall be switched on automatically when the temperature of the combustion gases after the last injection of combustion air falls below the temperatures set out in subregulation (2). It shall also be used during plant start-up and shut-down operations in order to ensure that those temperatures are maintained at all times during these operations and as long as unburned waste is in the combustion chamber.

(b) The auxiliary burner shall not be fed with fuels which can cause higher emissions than those resulting from the burning of gas oil as defined in regulation 2(1) of the Quality of Fuels Regulations, as may be amended from time to time, relating to a reduction in the sulphur content of certain liquid fuels, liquefied gas or natural gas. S.L. 423.29

(4) Waste incineration plants and waste co-incineration plants shall operate an automatic system to prevent waste feed in the following situations:

(a) at start-up, until the temperature set out in sub-regulation (2) or the temperature specified in accordance with regulation 12(1) has been reached;

(b) whenever the temperature set out in sub-regulation (2) or the temperature specified in accordance with regulation 12(1) is not maintained;

(c) whenever the continuous measurements show that any emission limit value is exceeded due to disturbances or failures of the waste gas cleaning devices.

(5) Any heat generated by waste incineration plants or waste co-incineration plants shall be recovered as far as practicable.

(6) Infectious clinical waste shall be placed straight in the furnace, without first being mixed with other categories of waste and without direct handling.

(7) The competent authority shall ensure that the waste incineration plant or waste co-incineration plant is operated and controlled by a natural person who is competent to manage the plant.

12. (1) Conditions different from those laid down in regulation 11(1), (2) and (3) and, as regards the temperature, regulation 11(4) and specified in the permit for certain categories of waste or for certain thermal processes, may be authorised by the competent authority provided the other requirements of these regulations are met. The competent authority may lay down rules governing these authorisations. Authorisation to change operating conditions.

(2) For waste incineration plants, the change of the operating conditions shall not cause more residues or residues with a higher content of organic polluting substances compared to those residues which could be expected under the conditions laid down in regulation 11(1), (2) and (3).

B 284

(3) (a) Emissions of total organic carbon and carbon monoxide from waste co-incineration plants, authorised to change operating conditions according to sub-regulation (1) shall also comply with the emission limit values set out in Schedule 2.

(b) Emissions of total organic carbon from bark boilers within the pulp and paper industry co-incinerating waste at the place of its production which were in operation and had a permit before 28 December 2002 and which are authorised to change operating conditions according to sub-regulation (1) shall also comply with the emission limit values set out in Schedule 2.

Delivery and
reception of
waste.

13. (1) The operator of the waste incineration plant or waste co-incineration plant shall take all necessary precautions concerning the delivery and reception of waste in order to prevent or to limit as far as practicable the pollution of air, soil, surface water and groundwater as well as other negative effects on the environment, odours and noise, and direct risks to human health.

(2) The operator shall determine the mass of each type of waste, if possible according to the European Waste List established by Decision 2000/532/EC, prior to accepting the waste at the waste incineration plant or waste co-incineration plant.

(3) Prior to accepting hazardous waste at the waste incineration plant or waste co-incineration plant, the operator shall collect available information about the waste for the purpose of verifying compliance with the permit requirements specified in regulation 6(2).

That information shall cover the following:

(a) all the administrative information on the generating process contained in the documents mentioned in subregulation (4)(a);

(b) the physical, and as far as practicable, chemical composition of the waste and all other information necessary to evaluate its suitability for the intended incineration process;

(c) the hazardous characteristics of the waste, the substances with which it cannot be mixed, and the precautions to be taken in handling the waste.

(4) Prior to accepting hazardous waste at the waste incineration plant or waste co-incineration plant, at least the following procedures shall be carried out by the operator:

(a) the checking of the documents required by the Waste Regulations, 2011, as may be amended from time to time, and, where applicable, those required by Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste and by legislation on transport of dangerous goods; S.L. 504.37

(b) the taking of representative samples, unless inappropriate as far as possible before unloading, to verify conformity with the information provided for in sub-regulation (3) by carrying out controls and to enable the competent authorities to identify the nature of the wastes treated.

The samples referred to in paragraph (b) shall be kept for at least one month after the incineration or co-incineration of the waste concerned.

(5) The competent authority may grant exemptions from subregulations (2), (3) and (4) to waste incineration plants or waste co-incineration plants which are a part of an installation covered by the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations, 2013 and only incinerate or co-incinerate waste generated within that installation. L.N. 10 of 2013

14. (1) Residues shall be minimised in their amount and harmfulness. Residues shall be recycled, where appropriate, directly in the plant or outside. Residues.

(2) Transport and intermediate storage of dry residues in the form of dust shall take place in such a way as to prevent dispersal of those residues in the environment.

(3) Prior to determining the routes for the disposal or recycling of the residues, appropriate tests shall be carried out to establish the physical and chemical characteristics and the polluting potential of the residues. Those tests shall concern the total soluble fraction and heavy metals soluble fraction.

15. A change of operation of a waste incineration plant or a waste co-incineration plant treating only non-hazardous waste in an installation covered by the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations, 2013 which involves the incineration or co-incineration of hazardous waste shall be regarded as a substantial change. Substantial change.
L.N. 10 of 2013

B 286

Reporting and public information on waste incineration plants and waste co-incineration plants.

16. (1) Applications for new permits for waste incineration plants and waste co-incineration plants shall be made available to the public at one or more locations for an appropriate period to enable the public to comment on the applications before the competent authority reaches a decision. That decision, including at least a copy of the permit, and any subsequent updates, shall also be made available to the public.

(2) For waste incineration plants or waste co-incineration plants with a nominal capacity of 2 tonnes or more per hour, the information in the report referred to in Article 72 of Directive 2010/75/EU, which shall include information on the functioning and monitoring of the plant and give account of the running of the incineration or co-incineration process and the level of emissions into air and water in comparison with the emission limit values, shall be made available to the public.

(3) A list of waste incineration plants or waste co-incineration plants with a nominal capacity of less than 2 tonnes per hour shall be drawn up by the competent authority and shall be made available to the public.

Offences.

17. Any person shall be guilty of an offence under these regulations if:

(a) he fails to comply with any provision of these regulations or fails to comply with permit conditions or with any order lawfully given in terms of any provision of these regulations; or

(b) he contravenes any restriction, prohibition or requirement imposed by or under these regulations; or

(c) he acts in contravention of any of the provisions of these regulations; or

(d) he conspires or attempts, or aids, or abets, any other person by whatever means, including advertising, counselling or procurement to contravene the provisions or to fail to comply with any such provisions, including any order lawfully given in terms of any of the provisions of these regulations, or to contravene any restriction, prohibition or requirement imposed by or under the said regulations.

Penalties.

18. Any person who commits an offence against these regulations shall, on conviction, be liable:

(a) on a first conviction to a fine (*multa*) of not less than

twenty-three thousand euro (€23,000) and not greater than two hundred and thirty-three thousand euro (€233,000) or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment;

(b) on a second or subsequent convictions, to a fine (*multa*) of not less than forty-six thousand euro (€46,000) and not greater than four hundred and sixty-six thousand euro (€466,000) or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment:

Provided that whenever any person is found guilty of committing an offence under these regulations by means of a vehicle, the owner of the said vehicle, where applicable, is held liable in the same manner and degree:

Provided further that the court may order any person who has been found guilty of committing an offence against these regulations to pay for the expenses incurred by the competent authority mentioned in these regulations as a result of the said offence, the revocation of the permit issued by the competent authority and the confiscation of the *corpus delicti*, including the vehicle, if applicable.

19. (1) The provisions of articles 23 and 30 of the Criminal Code shall, *mutatis mutandis*, apply to proceedings in respect of offences against these regulations, so however that the disqualification from holding or obtaining a licence, permit or authority shall in no case be for less than one year.

Applicability of
the Criminal
Code.
Cap. 9.

(2) Notwithstanding the provisions of article 370 of the Criminal Code, proceedings for an offence against these regulations shall be held before the Court of Magistrates (Malta) or the Court of Magistrates (Gozo), as the case may be, and shall be in accordance with the provisions of the Criminal Code regulating the procedure before the said courts as courts of criminal judicature.

Cap. 9.

(3) Notwithstanding the provisions of the Criminal Code, the Attorney General shall always have a right of appeal to the Court of Criminal Appeal from any judgement given by the Court of Magistrates (Malta) or the Court of Magistrates (Gozo) in respect of proceedings for any offence against these regulations.

Cap. 9.

20. (1) The Waste Management (Incineration) Regulations, 2001, hereinafter referred to as "the revoked regulations", are revoked with effect from 7 January 2014.

Revocation of
the Waste
Management
(Incineration)
Regulations,
2001.
L.N. 336 of
2001.

(2) References to the revoked regulations shall be construed as references to these regulations.

B 288

Existing installations covered by the Integrated Pollution Prevention and Control Regulations, 2002. L.N. 234 of 2002.

L.N. 10 of 2013.

21. (1) The provisions of these regulations shall apply from 7 January 2014 to installations carrying out the activities referred to in Schedule 1 of the Integrated Pollution Prevention and Control Regulations, 2002, which are in operation and hold a permit before 7 January 2013, or the operators of which have submitted a complete application for a permit before that date, provided that those installations are put into operation no later than 7 January 2014.

(2) The provisions of these regulations shall apply from 7 July 2015 for installations carrying out the activity referred to point 5.2 in Schedule 1 of the Industrial Emissions (Integrated Pollution Prevention and Control) Regulations, 2013, which are not covered by subregulation (1), and which are in operation before 7 January 2013. Such installations shall apply to the competent authority for a permit by 7 July 2013 at the latest.

(3) In relation to combustion plants which co-incinerate waste, point 3.1 of Schedule 3 shall apply until:

(a) 31 December 2015, for combustion plants which have been granted a permit before 7 January 2013, or the operators of which have submitted a complete application for a permit before that date, provided that such plants are put into operation no later than 7 January 2014;

(b) 6 January 2013, for combustion plants not covered by paragraph (a).

(4) Point 3.2 of Schedule 3 shall apply in relation to combustion plants which co-incinerate waste, as from:

(a) 1 January 2016, for combustion plants which have been granted a permit before 7 January 2013, or the operators of which have submitted a complete application for a permit before that date, provided that such plants are put into operation no later than 7 January 2014;

(b) 7 January 2013, for combustion plants not covered by paragraph (a).

SCHEDULE 1

DEFINITIONS

For the purpose of these schedules the following definitions shall apply:

(a) "existing waste incineration plant" means one of the following waste incineration plants:

(i) which was in operation and had a permit in accordance with applicable European Union law before 28 December 2002,

(ii) which was authorised or registered for waste incineration and had a permit granted before 28 December 2002 in accordance with applicable European Union law, provided that the plant was put into operation no later than 28 December 2003,

(iii) which, in the view of the competent authority, was the subject of a full request for authorisation before 28 December 2002, provided that the plant was put into operation not later than 28 December 2004;

(b) "new waste incineration plant" means any waste incineration plant not covered by point (a).

SCHEDULE 2

AIR EMISSION LIMIT VALUES FOR WASTE INCINERATION PLANTS

1. All emission limit values shall be calculated at a temperature of 273.15 K, a pressure of 101.3 kPa and after correcting for the water vapour content of the waste gases.

They are standardised at 11% oxygen in waste gas except in case of incineration of mineral waste oil as defined in regulation 4 the Waste Regulations (S.L. 504.37), when they are standardised at 3% oxygen, and in the cases referred to in point 2.7 of Schedule 5.

1.1. Daily average emission limit values for the following polluting substances (mg/Nm³)

Total dust	10
Gaseous and vaporous organic substances, expressed as total organic carbon (TOC)	10
Hydrogen chloride (HCl)	10

B 290

Hydrogen fluoride (HF)	1
Sulphur dioxide (SO ₂)	50
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as NO ₂ for existing waste incineration plants with a nominal capacity exceeding 6 tonnes per hour or new waste incineration plants	200
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as NO ₂ for existing waste incineration plants with a nominal capacity of 6 tonnes per hour or less	400

1.2. Half-hourly average emission limit values for the following polluting substances (mg/Nm³)

	(100%) A	(97%) B
Total dust	30	10
Gaseous and vaporous organic substances, expressed as total organic carbon (TOC)	20	10
Hydrogen chloride (HCl)	60	10
Hydrogen fluoride (HF)	4	2
Sulphur dioxide (SO ₂)	200	50
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂), expressed as NO ₂ for existing waste incineration plants with a nominal capacity exceeding 6 tonnes per hour or new waste incineration plants	400	200

1.3. Average emission limit values (mg/Nm³) for the following heavy metals over a sampling period of a minimum of 30 minutes and a maximum of 8 hours

Cadmium and its compounds, expressed as cadmium (Cd)	Total: 0.05
Thallium and its compounds, expressed as thallium (Tl)	
Mercury and its compounds, expressed as mercury (Hg)	0.05
Antimony and its compounds, expressed as antimony (Sb)	Total: 0.05
Arsenic and its compounds, expressed as arsenic (As)	
Lead and its compounds, expressed as lead (Pb)	
Chromium and its compounds, expressed as chromium (Cr)	
Cobalt and its compounds, expressed as cobalt (Co)	
Copper and its compounds, expressed as copper (Cu)	
Manganese and its compounds, expressed as manganese (Mn)	
Nickel and its compounds, expressed as nickel (Ni)	
Vanadium and its compounds, expressed as vanadium (V)	

These average values cover also the gaseous and the vapour forms of the

relevant heavy metal emissions as well as their compounds.

1.4. Average emission limits value (ng/Nm³) for dioxins and furans over a sampling period of a minimum of 6 hours and a maximum of 8 hours. The emission limit value refers to the total concentration of dioxins and furans calculated in accordance with Schedule 1 of the Industrial Emissions (Framework) Regulations, 2013.

Dioxins and furans	0.1
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1.5. Emission limit values (mg/Nm³) for carbon monoxide (CO) in the waste gases:

- (a) 50 as daily average value;
- (b) 100 as half-hourly average value;
- (c) 150 as 10-minute average value.

The competent authority may authorise exemptions from the emission limit values set out in this point for waste incineration plants using fluidised bed technology, provided that the permit sets an emission limit value for carbon monoxide (CO) of not more than 100 mg/Nm³ as an hourly average value.

2. Emission limit values applicable in the circumstances described in regulation 7(6) and regulation 8.

The total dust concentration in the emissions into the air of a waste incineration plant shall under no circumstances exceed 150 mg/Nm³ expressed as a half-hourly average. The air emission limit values for TOC and CO set out in points 1.2 and 1.5(b) shall not be exceeded.

3. The competent authority may lay down rules governing the exemptions provided for in this Schedule.

SCHEDULE 3

DETERMINATION OF AIR EMISSION LIMIT VALUES FOR THE CO-INCINERATION OF WASTE

The following formula (mixing rule) shall be applied whenever a specific total emission limit value 'C' has not been set out in a table in this Schedule.

The emission limit value for each relevant polluting substance and CO in the waste gas resulting from the co-incineration of waste shall be calculated as

B 292

follows:

$$\frac{V_{\text{waste}} \times C_{\text{waste}} + V_{\text{proc}} \times C_{\text{proc}}}{V_{\text{waste}} + V_{\text{proc}}} = C$$

V_{waste} : waste gas volume resulting from the incineration of waste only determined from the waste with the lowest calorific value specified in the permit and standardised at the conditions given by these regulations.

If the resulting heat release from the incineration of hazardous waste amounts to less than 10% of the total heat released in the plant, V_{waste} must be calculated from a (notional) quantity of waste that, being incinerated, would equal 10% heat release, the total heat release being fixed.

C_{waste} : emission limit values for waste incineration plants set out in Schedule 2.

V_{proc} : waste gas volume resulting from the plant process including the combustion of the authorised fuels normally used in the plant (wastes excluded) determined on the basis of oxygen contents at which the emissions must be standardised as set out in Union or national law. In the absence of legislation for this kind of plant, the real oxygen content in the waste gas without being thinned by addition of air unnecessary for the process must be used.

C_{proc} : emission limit values as set out in this Schedule for certain industrial activities or in case of the absence of such values, emission limit values of plants which comply with the national laws, regulations and administrative provisions for such plants while burning the normally authorised fuels (wastes excluded). In the absence of these measures the emission limit values set out in the permit are used. In the absence of such permit values the real mass concentrations are used.

C: total emission limit values at an oxygen content as set out in this Schedule for certain industrial activities and certain polluting substances or, in case of the absence of such values, total emission limit values replacing the emission limit values as set out in specific schedules of the Industrial Emissions (Integrated Pollution Prevention and Control, IPPC) Regulations, 2013. The total oxygen content to replace the oxygen content for the standardisation is calculated on the basis of the content above respecting the partial volumes. All emission limit values shall be calculated at a temperature of 273.15 K, a pressure of 101.3 kPa and after correcting for the water vapour content of the waste

gases.

The competent authority may lay down rules governing the exemptions provided for in this Schedule.

2. Special provisions for cement kilns co-incinerating waste.

2.1. The emission limit values set out in points 2.2 and 2.3 apply as daily average values for total dust, HCl, HF, NO_x, SO₂ and TOC (for continuous measurements), as average values over the sampling period of a minimum of 30 minutes and a maximum of 8 hours for heavy metals and as average values over the sampling period of a minimum of 6 hours and a maximum of 8 hours for dioxins and furans.

All values are standardised at 10% oxygen.

Half-hourly average values shall only be needed in view of calculating the daily average values.

2.2. C – total emission limit values (mg/Nm³ except for dioxins and furans) for the following polluting substances

Polluting substance	C
Total dust	30
HCl	10
HF	1
NO _x	500 (*)
Cd + Tl	1
Hg	0.05
Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V	0.05
Dioxins and furans (ng/Nm ³)	0.5
(*) Until 1 January 2016, the competent authority may authorise exemptions from the limit value for NO _x for Lepol kilns and long rotary kilns provided that the permit sets a total emission limit value for NO _x of not more than 800 mg/Nm ³	

2.3. C – total emission limit values (mg/Nm³) for SO₂ and TOC

Pollutant	C
SO ₂	50
TOC	10

The competent authority may grant derogations for emission limit values set out in this point in cases where TOC and SO₂ do not result from the co-incineration of waste.

2.4. C- total emission limit values for CO

B 294

The competent authority may set emission limit values for CO.

3. Special provisions for combustion plants co-incinerating waste

3.1. C_{proc} expressed as daily average values (mg/Nm³) valid until the date set out in regulation 21(3).

For determining the total rated thermal input of the combustion plants, the aggregation rules as defined in the definition of "combustion plant" in Regulation 2 of the Industrial Emissions (Large Combustion Plants) Regulations, 2013 shall apply. Half-hourly average values shall only be needed in view of calculating the daily average values.

C_{proc} for solid fuels with the exception of biomass (O₂ content 6%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	850	200	200
NO _x	-	400	200	200
Dust	50	50	30	30

C_{proc} for biomass (O₂ content 6%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	200	200	200
NO _x	-	350	300	200
Dust	50	50	30	30

C_{proc} for liquid fuels (O₂ content 3%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	850	400 to 200 (linear decrease from 100 to 300 MW _{Th})	200
NO _x	-	400	200	200
Dust	50	50	30	30

3.2. C_{proc} expressed as daily average values (mg/Nm³) valid from the date set out in regulation 21(4).

For determining the total rated thermal input of the combustion plants, the aggregation rules as defined in the definition of "combustion plant" in Regulation

2 of the Industrial Emissions (Large Combustion Plants) Regulations, 2013 shall apply. Half-hourly average values shall only be needed in view of calculating the daily average values.

3.2.1. C_{proc} for combustion plants referred to in regulation 21(3)(a), with the exception of gas turbines and gas engines

C_{proc} for solid fuels with the exception of biomass (O_2 content 6%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	400 for peat: 300	200	200
NO _x	-	300 for pulverised lignite: 400	200	200
Dust	50	30	25 for peat: 20	20

C_{proc} for biomass (O_2 content 6%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	200	200	200
NO _x	-	300	250	200
Dust	50	30	20	20

C_{proc} for liquid fuels (O_2 content 3%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	350	250	200
NO _x	-	400	200	150
Dust	50	30	25	20

3.2.2 C_{proc} for combustion plants referred to in regulation 21(3)(b), with the exception of gas turbines and gas engines.

C_{proc} for solid fuels with the exception of biomass (O_2 content 3%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
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B 296

SO ₂	-	400 for peat: 300	200 for peat: 300, except in the case of fluidised bed combustion: 250	150 for circulating or pressurised fluidised bed combustion or, in case of peat firing, for all fluidised bed combustion: 200
NO _x	-	300 for peat: 250	200	150 for pulverised lignite combustion: 200
Dust	50	20	20	10 for peat: 20

C_{proc} for biomass (O₂ content 6%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	200	200	150
NO _x	-	250	200	150
Dust	50	20	20	20

C_{proc} for liquid fuels (O₂ content 3%):

Polluting substance	< 50 MW _{Th}	50-100 MW _{Th}	100 to 300 MW _{Th}	> 300 MW _{Th}
SO ₂	-	350	250	150
NO _x	-	300	200	100
Dust	50	20	20	10

3.3. C - total emission limit values for heavy metals (mg/Nm³) expressed as average values over the sampling period of a minimum of 30 minutes and a maximum of 8 hours (O₂ content 6% for solid fuels and 3% for liquid fuels)

Polluting substances	C
Cd + Tl	0.05
Hg	0.05

Sb + As + Pb + Cr + Co + Cu + Mn + Ni + V	0.5
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3.4. C - total emission limit value (ng/Nm³) for dioxins and furans expressed as average value measured over the sampling period of a minimum of 6 hours and a maximum of 8 hours (O₂ content 6% for solid fuels and 3% for liquid fuels)

Polluting substance	C
Dioxins and furans	0.1

3. Special provisions for waste co-incineration plants in industrial sectors not covered under points 2 and 3 of this Schedule.

4.1. C - total emission limit value (ng/Nm³) for dioxins and furans expressed as average value measured over the sampling period of a minimum of 6 hours and a maximum of 8 hours:

Polluting substance	C
Dioxins and furans	0.1

4.2. C - total emission limit values (mg/Nm³) for heavy metals expressed as average values over the sampling period of a minimum of 30 minutes and a maximum of 8 hours:

Polluting substances	C
Cd + Tl	0.5
Hg	0.5

SCHEDULE 4

EMISSION LIMIT VALUES OR DISCHARGES OF WASTE WATER FROM THE CLEANING OF WASTE GASES

Polluting substances	Emissions limit values for unfiltered samples (mg/l except for dioxins and furans)	
1. Total suspended solids as defined in Annex I of Directive 91/271/EEC	(95%) 30	(100%) 45
2. Mercury and its compounds, expressed as mercury (Hg)	0.03	
3. Cadmium and its compounds, expressed as cadmium (Cd)	0.05	
4. Thallium and its compounds, expressed as thallium (Tl)	0.05	

B 298

5. Arsenic and its compounds, expressed as arsenic (As)	0.15
6. Lead and its compounds, expressed as lead (Pb)	0.2
7. Chromium and its compounds, expressed as chromium (Cr)	0.5
8. Copper and its compounds, expressed as copper (Cu)	0.5
9. Nickel and its compounds, expressed as nickel (Ni)	0.5
10. Zinc and its compounds, expressed as zinc (Zn)	1.5
11. Dioxins and furans	0.3 ng/l

SCHEDULE 5

MONITORING OF EMISSIONS

1. Measurement techniques

1.1. Measurements for the determination of concentrations of air and water polluting substances shall be carried out representatively.

1.2. Sampling and analysis of all polluting substances including dioxins and furans as well as the quality assurance of automated measuring systems and the reference measurement methods to calibrate them shall be carried out according to CEN-standards. If CEN standards are not available, ISO, national or other international standards which ensure the provision of data of an equivalent scientific quality shall apply. Automated measuring systems shall be subject to control by means of parallel measurements with the reference methods at least once per year.

1.3. At the daily emission limit value level, the values of the 95% confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values:

Carbon monoxide:	10%
Sulphur dioxide:	20%
Nitrogen dioxide:	20%
Total dust:	30%
Total organic carbon:	30%
Hydrogen chloride:	40%
Hydrogen fluoride:	40%

Periodic measurements of the emissions into air and water shall be carried out in accordance with points 1.1 and 1.2.

2. Measurements relating to air polluting substances

2.1. The following measurements relating to air polluting substances shall be carried out:

(a) continuous measurements of the following substances: NO_x, provided that emission limit values are set, CO, total dust, TOC, HCl, HF, SO₂;

(b) continuous measurements of the following process operation parameters: temperature near the inner wall or at another representative point of the combustion chamber as authorised by the competent authority, concentration of oxygen, pressure, temperature and water vapour content of the waste gas;

(c) at least two measurements per year of heavy metals and dioxins and furans; one measurement at least every 3 months shall, however, be carried out for the first 12 months of operation.

2.2. The residence time as well as the minimum temperature and the oxygen content of the waste gases shall be subject to appropriate verification, at least once when the waste incineration plant or waste co-incineration plant is brought into service and under the most unfavourable operating conditions anticipated.

2.3. The continuous measurement of HF may be omitted if treatment stages for HCl are used which ensure that the emission limit value for HCl is not being exceeded. In that case the emissions of HF shall be subject to periodic measurements as laid down in point 2.1(c).

2.4. The continuous measurement of the water vapour content shall not be required if the sampled waste gas is dried before the emissions are analysed.

2.5. The competent authority may decide not to require continuous measurements for HCl, HF and SO₂ in waste incineration plants or waste co-incineration plants and require periodic measurements as set out in point 2.1(c) or no measurements if the operator can prove that the emissions of those pollutants can under no circumstances be higher than the prescribed emission limit values.

The competent authority may decide not to require continuous measurements for NO_x and require periodic measurements as set out in point 2.1(c) in existing waste incineration plants with a nominal capacity of less than 6 tonnes per hour or in existing waste co-incineration plants with a nominal capacity of less than 6 tonnes per hour if the operator can prove on the basis of information on the quality of the waste concerned, the technologies used and the results of the monitoring of emissions, that the emissions of NO_x can under no circumstances be higher than the prescribed emission limit value.

2.6. The competent authority may decide to require one measurement every 2 years for heavy metals and one measurement per year for dioxins and furans in

B 300

the following cases:

(a) the emissions resulting from co-incineration or incineration of waste are under all circumstances below 50% of the emission limit values;

(b) the waste to be co-incinerated or incinerated consists only of certain sorted combustible fractions of non-hazardous waste not suitable for recycling and presenting certain characteristics, and which is further specified on the basis of the assessment referred to in point (c);

(c) the operator can prove on the basis of information on the quality of the waste concerned and the monitoring of the emissions that the emissions are under all circumstances significantly below the emission limit values for heavy metals and dioxins and furans.

2.7. The results of the measurements shall be standardised using the standard oxygen concentrations mentioned in Schedule 2 or calculated according to Schedule 3 and by applying the formula given in Schedule 6.

When waste is incinerated or co-incinerated in an oxygen-enriched atmosphere, the results of the measurements can be standardised at an oxygen content laid down by the competent authority reflecting the special circumstances of the individual case.

When the emissions of polluting substances are reduced by waste gas treatment in a waste incineration plant or waste co-incineration plant treating hazardous waste, the standardisation with respect to the oxygen contents provided for in the first subparagraph shall be done only if the oxygen content measured over the same period as for the polluting substance concerned exceeds the relevant standard oxygen content.

3. Measurements relating to water polluting substances

3.1. The following measurements shall be carried out at the point of waste water discharge:

(a) continuous measurements of pH, temperature and flow;

(b) spot sample daily measurements of total suspended solids or measurements of a flow proportional representative sample over a period of 24 hours;

(c) at least monthly measurements of a flow proportional representative sample of the discharge over a period of 24 hours of Hg, Cd, Tl, As, Pb, Cr, Cu, Ni and Zn;

(d) at least every 6 months measurements of dioxins and furans; however, one measurement at least every 3 months shall be carried out for

the first 12 months of operation.

3.2. Where the waste water from the cleaning of waste gases is treated on site collectively with other on-site sources of waste water, the operator shall take the measurements:

- (a) on the waste water stream from the waste gas cleaning processes prior to its input into the collective waste water treatment plant;
- (b) on the other waste water stream or streams prior to its or their input into the collective waste water treatment plant;
- (c) at the point of final waste water discharge, after the treatment, from the waste incineration plant or waste co-incineration plant.

SCHEDULE 6

FORMULA TO CALCULATE THE EMISSION CONCENTRATION AT THE STANDARD PERCENTAGE OXYGEN CONCENTRATION

$$E_S = \frac{21 - O_S}{21 - O_M} \times E_M$$

E_S = calculated emission concentration at the standard percentage oxygen concentration

E_M = measured emission concentration

O_S = standard oxygen concentration

O_M = measured oxygen concentration

SCHEDULE 7

ASSESSMENT OF COMPLIANCE WITH EMISSION LIMIT VALUES

1. Air emission limit values

1.1. The emission limit values for air shall be regarded as being complied with if:

- (a) none of the daily average values exceeds any of the emission limit values set out in point 1.1 of Schedule 2 or in Schedule 3 or calculated

B 302

in accordance with Schedule 3;

(b) either none of the half-hourly average values exceeds any of the emission limit values set out in column A of the table under point 1.2 of Schedule 2 or, where relevant, 97% of the half-hourly average values over the year do not exceed any of the emission limit values set out in column B of the table under point 1.2 of Schedule 2;

(c) none of the average values over the sampling period set out for heavy metals and dioxins and furans exceeds the emission limit values set out in points 1.3 and 1.4 of Schedule 2 or in Schedule 3 or calculated in accordance with Schedule 3;

(d) for carbon monoxide (CO):

(i) in case of waste incineration plants:

- at least 97% of the daily average values over the year do not exceed the emission limit value set out in point 1.5(a) of Schedule 2; and,

- at least 95% of all 10-minute average values taken in any 24-hour period or all of the half-hourly average values taken in the same period do not exceed the emission limit values set out in points 1.5(b) and (c) of Schedule 2; in case of waste incineration plants in which the gas resulting from the incineration process is raised to a temperature of at least 1 100°C for at least two seconds, the competent authority may apply an evaluation period of 7 days for the 10-minute average values;

(ii) in case of waste co-incineration plants: the provisions of Schedule 3 are met.

1.2. The half-hourly average values and the 10-minute averages shall be determined within the effective operating time (excluding the start-up and shut-down periods if no waste is being incinerated) from the measured values after having subtracted the value of the confidence interval specified in point 1.3 of Schedule 5. The daily average values shall be determined from those validated average values.

To obtain a valid daily average value no more than five half-hourly average values in any day shall be discarded due to malfunction or maintenance of the continuous measurement system. No more than ten daily average values per year shall be discarded due to malfunction or maintenance of the continuous measurement system.

1.3. The average values over the sampling period and the average values in

the case of periodical measurements of HF, HCl and SO₂ shall be determined in accordance with the requirements of regulation 6(1)(e), regulation 9(3) and point 1 of Schedule 5.

2. Water emission limit values

The emission limit values for water shall be regarded as being complied with if:

(a) for total suspended solids 95% and 100% of the measured values do not exceed the respective emission limit values as set out in Schedule 4;

(b) for heavy metals (Hg, Cd, Tl, As, Pb, Cr, Cu, Ni and Zn) no more than one measurement per year exceeds the emission limit values set out in Part 5; or, if the competent authority provides for more than 20 samples per year, no more than 5% of these samples exceed the emission limit values set out in Schedule 4;

(c) for dioxins and furans, the measurement results do not exceed the emission limit value set out in Schedule 4.

