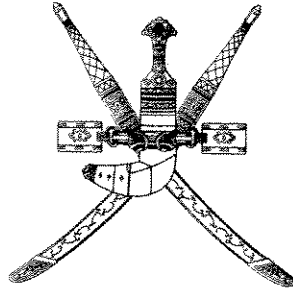


**UNOFFICIAL  
TRANSLATION**



**SULTANATE OF OMAN**

**MINISTRY OF REGIONAL MUNICIPALITIES,  
ENVIRONMENT AND WATER RESOURCES**

**MINISTERIAL DECISION  
No. (118/2004)**

**ISSUING REGULATIONS FOR AIR POLLUTION CONTROL  
FROM STATIONARY SOURCES**



P.O. BOX 323 MUSCAT, P.C. 113  
TEL.: 24692550

**Ministerial Decision**  
**No. (118/2004)**  
**Issuing Regulations for Air Pollution Control from**  
**Stationary Sources**

Based on the Law for Conservation of the Environment and Prevention of Pollution issued by Royal Decree No.(114/2001), and the Regulations for Air Pollution Control from Stationary Sources issued by Ministerial Decision No.(5/86), and according to the requirements of public interest.

**IT IS DECIDED**

- Article (1):** The provisions of the attached Regulations for Air Pollution Control from Stationary Sources shall be effective.
- Article (2):** All laws or regulations that violate or contradict with the provisions of the attached regulations including the Regulations for Air Pollution Control from stationary Sources issued by Ministerial Decision No.(5/86) shall be cancelled.
- Article (3):** This decision shall be published in the Official Gazette and shall be effective from the date of its publication.

**Abdullah bin Salim bin Amer Al Rawas**  
**Minister of Regional Municipalities,**  
**Environment & Water Resources**

**Issued on: 20 Jumada Al Thani 1425 H**  
**Corresponding to : 7 August, 2004.**

## Regulations for Air Pollution Control from Stationary Sources

**Article (1):** In implementation of the provisions of this Regulations, the following words and expressions shall have the meaning set against each of them unless otherwise stated:

- The Directorate** : The Directorate General of Environmental Affairs.
- The Concerned Department** : Environmental Inspection and Control Department.
- Air Pollution** : The presence of any substance or toxic gases or substances in the air in quantities, characteristics or duration causing any change in the physical, chemical or biological constituents, which would bring harm to human, animal or vegetation life or building and adversely affect life or property.
- Practicable Means** : The provision of the best methods and proper equipment to prevent the escape of noxious substances which may harm the human health and environment.
- Chimney** : Well designed structures and openings of any kind from or through which smoke, grit, dust or gases may be emitted out to atmosphere for proper dispersion.
- Controlled Outlet** : An opening other than a chimney, through which smoke, grit, dust or gases may be emitted to air after having undergone treatment to meet the standard of emission.
- Smoke** : Includes soot, ash, dust, grit and gaseous emissions.
- Dark Smoke** : Smoke which would be as darker as or darker than shade 1 (one) on the Ringelmann Chart, or which has opacity greater than or equal to 20%.
- Dust** : Solid matters with an equivalent diameter less than 76 micrometers.

**Fugitive Emissions** : Solid matters and gases escaping into the air other than from a chimney or other controlled outlet.

**Furnace** : Any plant in which materials are burnt or heated and give rise to the emission of noxious or offensive substances.

**Grit** : Solid matters with a diameter of 76 micrometers or more.

**Establishment** : Any industrial or trade establishment uses a technology / process equipment used for or connected with any industrial or trade purposes.

**Owner** : Any natural or judicial person owning an area of work or being responsible for its operation or administration.

**Permit to Operate** : An approval issued by the concerned department including permission to operate combustion sources after ensuring their environmental safety.

**Article (2):** The owner shall use the practicable means as per the basis specified by the Ministry to prevent the emission of noxious or offensive substances from the site, either directly or indirectly and to render harmless or inoffensive such substances and if they are necessarily to be discharged, the mentioned means shall be used.

**Article (3):** The owner should comply with the standards prescribed in the Appendix, shall monitor from time to time the grit, dust and gases emitting from any source within the establishment, make necessary modifications to the chimney or any other outlet and submit the monitoring results to the Ministry and it has the right to request to improve the monitoring method and the equipment used in such monitoring.

**Article (4):** If there is a harm to public health or nuisance or emission of noxious odours arising from any work area, the owner shall take the necessary actions to eliminate the harmful effects within the given period.

**Article (5):** Dark smoke shall not be emitted from a chimney of any building or from any other site and open burning of any organic or agricultural waste is prohibited.

The Ministry may exempt the emission of dark smoke caused by the burning according to the reasons presented by the owner and accepted by the Ministry provided that a permitted period shall be specified with technical specifications and conditions.

**Article (6):** The owner shall submit an application to obtain an environmental permit and shall not commission or operate the plant unless the height of the chimney serving the plant has been approved by the Ministry that it is sufficient enough to prevent the smoke, grit, dust and toxic gases from becoming prejudicial to health or nuisance.

The minimum stack heights from ground level shall be as follows:

Power Plants :

Natural Gas fired	26m
Diesel fired	35m

Boiler Plants:

Natural Gas	15m
Diesel fired	20m

Kilns:

Kiln for Cement Works	40m
Kiln for Ceramic Works	20m

Smelter Furnaces:

For ferrous and non-ferrous metals	45m
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Incinerators:

Clinical, Municipal and Industrial waste	15-20m
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In other cases, the chimney height shall be calculated as “2.5 multiplied by the height of the highest building (in meters) in the concerned establishment complex”.

- Article (7):** The permit to operate shall be issued for a period of three years against payment of an amount of R.O.(25) for each permit or renewal provided that it should be renewed for the same period or other similar periods within one month from its expiry date.  
In the event of permit renewal delay a fine of R.O.(5) shall be imposed for each month or part of it to a maximum of R.O.(100).
- Article (8):** The concerned environment inspectors may enter and inspect any work area to which the provisions of this Regulations apply to inspect any process causing the emission of any noxious or offensive substances, ensure the efficiency of the equipments / methods for controlling such emissions and ascertain of the quantities and types of emitted substances whether they require to be treated prior to release or make the necessary measurements.
- Article (9):** The owners or their agents to which these Regulations apply shall provide access and assistance to the concerned environmental inspectors to perform their duties for inspection and monitoring, and shall on written demand furnish a plan, to be kept secret concerning the industrial process of the establishment.
- Article (10):** The owners of the establishment shall inform the concerned Directorate of the Ministry of any change in the ownership of the establishment or industrial or production processes.
- Article (11):** Without prejudice to any severe penalty stipulated by the Law for Conservation of the Environment and Prevention of Pollution or any other law, any offender to the provisions of these Regulations shall be subject to a fine not exceeding R.O.(3000).  
The Ministry may close down the establishment if there is prejudice harm to the public health or environmental damage.

## Appendix Standards of Emissions

The standards shown below are numerical standards for emissions to air, which can be measured by instruments. There are many fugitive emissions, which are to be estimated by using mass balance equations. In the case of fugitive dust emissions the requirement is that there shall be substantially free from visible emission of dust to the satisfaction of the authorized inspector.

### **1-General:**

Grit and dust: 0.050 g/m<sup>3</sup>

Dark smoke products of combustion shall not emit smoke as dark as or darker than shade one on the Rigelmann scale (20% opacity).

### **2-Aggregates Works:**

Particulates 0.050 g/m<sup>3</sup>

### **3-Asbestos Works:**

Chrysotile and Amosite emissions to air shall not exceed 0.5 fibres/ml when measurements are taken in 10-minutes periods.

Total particulates 0.050 g/m<sup>3</sup>

### **4-Asphalt Works:**

Bitumen fume 0.030 g/m<sup>3</sup>

Total particulates 0.050 g/m<sup>3</sup>

### **5-Cement Works:**

Dust particulates 0.100 g/m<sup>3</sup>

Sulphur dioxide 0.035 g/m<sup>3</sup>

### **6-Ceramic Works:**

Dust particulates 0.050 g/m<sup>3</sup>

Hydrogen fluoride 0.005 g/m<sup>3</sup>

Hydrogen chloride 0.050 g/m<sup>3</sup>

### **7-Copper Works:**

Total particulates	0.200 g/m <sup>3</sup>
Copper compounds, as copper	0.100 g/m <sup>3</sup>
Zinc compounds, as zinc	0.100 g/m <sup>3</sup>
Cadmium compounds, as cadmium	0.005 g/m <sup>3</sup>
The mass rate of emission from the site shall not exceed calculated as cadmium	1.0 kg/h
Sulphur dioxide, calculated as sulphur trioxide	0.050 g/m <sup>3</sup>

### **8-Lead Works:**

Lead or its compounds, as lead	0.030 g/m <sup>3</sup>
The mass rate of emission of lead from the site shall not exceed calculated, lead	3.0 kg/h
Total particulates	0.050 g/m <sup>3</sup>

### **9-Incineration Works:**

Hydrogen chloride	0.050 g/m <sup>3</sup>
Hydrogen fluoride	0.010 g/m <sup>3</sup>
Oxides of nitrogen, calculated as nitrogen dioxide	0.200 g/m <sup>3</sup>
Phosphorus compounds, calculated as phosphorus pentoxide	0.050 g/m <sup>3</sup>
Hydrogen sulphide	5 p.p.m.v
Dioxins (as furans)	0.5 ng/m <sup>3</sup>
Total particulates	0.050 g/m <sup>3</sup>

### **10-Lime Works:**

Particulates from kiln emissions	0.100 g/m <sup>3</sup>
Particulates from lime slaking	0.100 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Particulates from ancillary processes	0.050 g/m <sup>3</sup>



### **11-Petroleum Works:**

Particulates from catalytic crackers	0.100 g/m <sup>3</sup>
Sulphur recovery unit, minimum Volatile organic compounds with the use of fume recovery unit	99.9% efficiency
Hydrogen sulphide	0.035 g/m <sup>3</sup> 5 p.p.m.v

### **12-Flaring in Oil Fields and Refinery:**

Carbon monoxide	0.050 g/m <sup>3</sup>
Sulphur dioxide	0.035 g/m <sup>3</sup>
Nitrogen dioxide	0.150 g/m <sup>3</sup>
Carbon dioxide	5 g/m <sup>3</sup>
Unburnt Hydrocarbons	0.010 g/m <sup>3</sup>
Particulates	0.100 g/m <sup>3</sup>

### **13-Power Plants:**

#### **a) Natural Gas Fired:**

Nitrogen dioxide	0.150 g/m <sup>3</sup>
Particulates	0.050 g/m <sup>3</sup>
Unburnt Hydrocarbons	0.010 g/m <sup>3</sup>
Carbon dioxide	5 g/m <sup>3</sup>

#### **b) Diesel oil Fired (less than 0.5% sulphur):**

Sulphur dioxide	0.035 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Nitrogen dioxide	0.150 g/m <sup>3</sup>
Particulates	0.100 g/m <sup>3</sup>
Unburnt Hydrocarbons	0.010 g/m <sup>3</sup>

### **14-Urea / Ammonia Plants:**

Ammonia	0.020 g/m <sup>3</sup>
Urea particulates	0.050 g/m <sup>3</sup>
Nitrogen dioxide	0.150 g/m <sup>3</sup>
Carbon dioxide	5 g/m <sup>3</sup>
Unburnt Hydrocarbons	0.010 g/m <sup>3</sup>

### **15-Pharmaceuticals (Antibiotics Products):**

Particulates (PM10)	0.030 g/m <sup>3</sup>
Volatile Organic compounds	0.035 g/m <sup>3</sup>
Ammonia	0.020 g/m <sup>3</sup>
Carbon disulphide (CS <sub>2</sub> )	0.0015 g/m <sup>3</sup>

### **16-Aluminium Works (Smelter):**

Hydrogen fluoride (total gas emissions from roof)	0.005 g/m <sup>3</sup>
Emissions resulting from each ton:	
Electrolysis cell	1.0 kg/ton of Aluminium
Anode	0.05 kg/ton of Aluminium
Particulates	0.150 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Sulphur dioxide	0.035 g/m <sup>3</sup>

### **17-Di-isocyanates:**

Volatile Di-isocyanates	0.1 p.p.m.v
Particulates Di-isocyanates	1.0 mg/m <sup>3</sup>

### **18-Combustion Sources:**

(Industrial boilers, furnaces, industrial ovens):

#### **a) Diesel oil fired:**

Carbon monoxide	0.050 g/m <sup>3</sup>
Sulphur dioxide	0.035 g/m <sup>3</sup>
Nitrogen dioxide	0.150 g/m <sup>3</sup>
Particulates	0.1 g/m <sup>3</sup>
Unburnt Hydrocarbon	0.010 g/m <sup>3</sup>

#### **b) Natural Gas fired:**

Nitrogen dioxide	0.150 g/m <sup>3</sup>
Particulates	0.050 g/m <sup>3</sup>
Unburnt Hydrocarbons	0.010 g/m <sup>3</sup>
Carbon dioxide	5 g/m <sup>3</sup>

### **19-Desalination Plants:**

Chlorine (as fugitive emissions)	0.005 g/m <sup>3</sup>
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## **20-Petrochemical Works:**

Hydrocarbons	0.010 g/m <sup>3</sup>
Nitrogen oxides	0.150 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Total particulates	0.100 g/m <sup>3</sup>
Sulphur dioxide	0.035 g/m <sup>3</sup>

## **21-Iron and Steel Works:**

### **a) Electric Furnaces:**

Total particulates	0.1 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Fluorine	0.003 g/m <sup>3</sup>

### **b) Diesel or Gas fired Furnaces:**

Total particulates	0.1 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Fluorine	0.003 g/m <sup>3</sup>
Sulphur dioxide	0.035 g/m <sup>3</sup>
Nitrogen oxides	0.150 g/m <sup>3</sup>
Hydrocarbons	0.010 g/m <sup>3</sup>

## **22-Glass Production:**

Tetra silicon fluoride	0.010 g/m <sup>3</sup>
Total particulates	0.1 g/m <sup>3</sup>
Carbon monoxide	0.050 g/m <sup>3</sup>
Nitrogen oxides	0.150 g/m <sup>3</sup>
Sulphur dioxide	0.035 g/m <sup>3</sup>