**2005 No 495**

New South Wales

# Protection of the Environment Operations (Clean Air) Amendment (Industrial and Commercial Activities and Plant) Regulation 2005

under the

Protection of the Environment Operations Act 1997

Her Excellency the Governor, with the advice of the Executive Council, has made the following Regulation under the *Protection of the Environment Operations Act 1997*.

BOB DEBUS, M.P.,
Minister for the Environment

## Explanatory note

The object of this Regulation is to repeal the *Clean Air (Plant and Equipment) Regulation 1997* and to transfer its provisions, with modifications, to the *Protection of the Environment Operations (Clean Air) Regulation 2002*. The modifications involve the classification (by age) of different activities and plant (both for premises accommodating licensed activities and plant and premises accommodating activities and plant not requiring a licence) and the establishment of emission standards whose level of stringency vary as between the various classes of activities and plant.

This Regulation is made under the *Protection of the Environment Operations Act 1997*, including sections 128 (1), 286 (1) and 323 and Schedule 2 (the general regulation-making power).

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# Protection of the Environment Operations (Clean Air) Amendment (Industrial and Commercial Activities and Plant) Regulation 2005

under the

Protection of the Environment Operations Act 1997

### 1 Name of Regulation

This Regulation is the *Protection of the Environment Operations (Clean Air) Amendment (Industrial and Commercial Activities and Plant) Regulation 2005*.

### 2 Commencement

This Regulation commences on 1 September 2005.

### 3 Amendment of Protection of the Environment Operations (Clean Air) Regulation 2002

The *Protection of the Environment Operations (Clean Air) Regulation 2002* is amended as set out in Schedule 1.

### 4 Repeal of Clean Air (Plant and Equipment) Regulation 1997

The *Clean Air (Plant and Equipment) Regulation 1997* is repealed.

# Schedule 1 Amendments

(Clause 3)

**[1] Clause 3 Definitions and notes**

Insert in alphabetical order in clause 3 (1):

***Approved Methods (Modelling and Assessment) Publication*** means the document entitled *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* prepared by the EPA and published in the Gazette, as in force from time to time.

***Approved Methods (Sampling and Analysis) Publication*** means the document entitled *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* prepared by the EPA and published in the Gazette, as in force from time to time.

***CEM***, together with a number, means a monitoring method of that number prescribed by the Approved Methods (Sampling and Analysis) Publication.

***Central Coast Metropolitan Area*** means the local government areas of Gosford and Wyong.

***Greater Metropolitan Area*** means:

(a) the Central Coast Metropolitan Area, and

(b) the Newcastle Metropolitan Area, and

(c) the Sydney Metropolitan Area, and

(d) the Wollongong Metropolitan Area, and

(e) the local government areas of Blue Mountains, Cessnock, Kiama, Lithgow, Maitland, Mid-Western Regional, Muswellbrook, Port Stephens, Shoalhaven, Singleton, Wingecarribee and Wollondilly.

***monitoring method*** means a continuous emissions monitoring method prescribed by the Approved Methods (Sampling and Analysis) Publication.

***Newcastle Metropolitan Area*** means the local government areas of Lake Macquarie and Newcastle.

***Sydney Metropolitan Area*** means the local government areas of Ashfield, Auburn, Bankstown, Baulkham Hills, Blacktown, Botany Bay, Burwood, Camden, Campbelltown, Canada Bay, Canterbury, Fairfield, Hawkesbury, Holroyd, Hornsby, Hunter's Hill, Hurstville, Kogarah, Ku-ring-gai, Lane Cove, Leichhardt, Liverpool, Manly, Marrickville, Mosman, North Sydney, Parramatta, Penrith, Pittwater, Randwick, Rockdale, Ryde,

Strathfield, Sutherland, Sydney, Warringah, Waverley, Willoughby and Woollahra.

***test method*** means a test method prescribed by the Approved Methods (Sampling and Analysis) Publication.

***TM***, together with a number, means a test method of that number prescribed by the Approved Methods (Sampling and Analysis) Publication.

***Wollongong Metropolitan Area*** means the local government areas of Shellharbour and Wollongong.

**[2] Clause 7 Definitions**

Omit the definitions of ***Approved Methods Publication*** and ***Test Method***.

**[3] Parts 4–7**

Omit Part 4. Insert instead:

# Part 4 Emission of air impurities from activities and plant

## Division 1 Preliminary

### 20 Definitions

(1) In this Part, and in Schedules 2–7

***approved circumstances*** are defined in clause 30 (in relation to scheduled premises) and clause 35 (in relation to non-scheduled premises).

***development application*** has the same meaning as it has in the *Environmental Planning and Assessment Act 1979*.

***development consent*** has the same meaning as it has in the *Environmental Planning and Assessment Act 1979*.

***dioxin*** means any of the following:

(a) 2,3,7,8 tetrachlorodibenzodioxin (TCDD),

(b) 1,2,3,7,8 pentachlorodibenzodioxin (PeCDD),

(c) 1,2,3,4,7,8 hexachlorodibenzodioxin (HxCDD),

(d) 1,2,3,6,7,8 hexachlorodibenzodioxin (HxCDD),

(e) 1,2,3,7,8,9 hexachlorodibenzodioxin (HxCDD),

(f) 1,2,3,4,6,7,8 heptachlorodibenzodioxin (HpCDD),

(g) octachlorodibenzodioxin (OCDD),

***emission unit*** means an item of plant that forms part of, or is attached to, some larger plant, being an item of plant that emits, treats or processes air impurities or controls the discharge of air impurities into the atmosphere.

***furan*** means any of the following:

(a) 2,3,7,8 tetrachlorodibenzofuran (TCDF),

(b) 2,3,4,7,8 pentachlorodibenzofuran (PeCDF),

(c) 1,2,3,7,8 pentachlorodibenzofuran (PeCDF),

(d) 1,2,3,4,7,8 hexachlorodibenzofuran (HxCDF),

(e) 1,2,3,6,7,8 hexachlorodibenzofuran (HxCDF),

(f) 1,2,3,7,8,9 hexachlorodibenzofuran (HxCDF),

(g) 2,3,4,6,7,8 hexachlorodibenzofuran (HxCDF),

(h) 1,2,3,4,6,7,8 heptachlorodibenzofuran (HpCDF),

(i) 1,2,3,4,7,8,9 heptachlorodibenzofuran (HpCDF),

(j) octachlorodibenzofuran (OCDF).

***Group***, in relation to any activity or plant, means the Group to which the activity or plant belongs pursuant to its classification:

(a) in relation to any activity or plant carried out or operated on scheduled premises, under Division 2, or

(b) in relation to any activity or plant carried out or operated on non-scheduled premises, under Division 3.

***non-scheduled premises*** means premises (other than scheduled premises) at which an activity is carried on or plant is operated.

***non-standard fuel*** means any fuel other than a standard fuel.

***principal toxic air pollutant*** means any one or more of the following elements, compounds or classes of compounds:

(a) acrolein,

(b) acrylonitrile,

(c) alpha chlorinated toluenes and benzoyl chloride,

(d) arsenic and arsenic compounds,

(e) benzene,

(f) beryllium and beryllium compounds,

(g) 1,3–butadiene,

(h) cadmium and cadmium compounds,

(i) chromium VI compounds,

(j) 1,2–dichloroethane (ethylene dichloride),

(k) dioxins or furans,

(l) epichlorohydrin,

(m) ethylene oxide,

(n) formaldehyde,

(o) hydrogen cyanide,

(p) MDI (diphenylmethane diisocyanate),

(q) nickel and nickel compounds,

(r) PAH, as benzo[a]pyrene equivalent,

(s) pentachlorophenol,

(t) phosgene,

(u) propylene oxide,

(v) TDI (toluene–2,4–diisocyanate and toluene–2, 6–diisocyanate),

(w) trichloroethylene,

(x) vinyl chloride.

***scheduled premises*** means premises at which a scheduled activity is carried on.

***standard fuel*** means any unused and uncontaminated solid, liquid or gaseous fuel that is:

(a) a coal or coal-derived fuel (other than any tar or tar residues), or

(b) a liquid or gaseous petroleum-derived fuel, or

(c) a wood or wood-derived fuel, or

(d) bagasse.

***Type 1 substance*** means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements.

***Type 2 substance*** means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements.

***volatile organic compound (VOC)*** means any chemical compound that:

(a) is based on carbon chains or rings, and

(b) contains hydrogen, and

(c) has a vapour pressure greater than 2mm of mercury (0.27 kPa) at 25°C and 101.3 kPa,

and includes any such compound containing oxygen, nitrogen or other elements, but does not include methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides and carbonate salts.

(2) For the purposes of this Part, plant is in ***normal operation*** if it is operating at a constant rate, whether or not it is operating at full capacity.

(3) Subject to clause 22 (4), any activity or plant that belongs to both Group 6 and another group is taken to belong to Group 6.

## Division 2 Standards of concentration for scheduled premises

### 21 General grouping of activities and plant

(1) Subject to this Division, an activity carried out, or plant operated, on scheduled premises:

(a) belongs to ***Group 1*** if:

(i) it commenced to be carried on, or to operate, before 1 January 1972, or

(ii) it commenced to be carried on, or to operate, on or after 1 January 1972 as a result of a pollution control approval granted under the *Pollution Control Act 1970* pursuant to an application made before 1 January 1972, or

(b) belongs to ***Group 2*** if it commenced to be carried on, or to operate, on or after 1 January 1972 as a result of a pollution control approval granted under the *Pollution Control Act 1970* pursuant to an application made on or after 1 January 1972 and before 1 July 1979, or

(c) belongs to ***Group 3*** if it commenced to be carried on, or to operate, on or after 1 July 1979 as a result of a pollution control approval granted under the *Pollution Control Act 1970* pursuant to an application made on or after 1 July 1979 and before 1 July 1986, or

(d) belongs to ***Group 4*** if it commenced to be carried on, or to operate, on or after 1 July 1986 as a result of a pollution control approval granted under the *Pollution Control Act 1970* pursuant to an application made on or after 1 July 1986 and before 1 August 1997, or

(e) belongs to ***Group 5*** if it commenced to be carried on, or to operate, on or after 1 August 1997 as a result of:

(i) a pollution control approval granted under the *Pollution Control Act 1970* pursuant to an application made on or after 1 August 1997 and before 1 July 1999, or

(ii) an environment protection licence granted under the *Protection of the Environment Operations Act 1997* pursuant to an application made on or after 1 July 1999 and before 1 September 2005, or

(f) belongs to ***Group 6*** if it commenced to be carried on, or to operate, on or after 1 September 2005, as a result of an environment protection licence granted under the *Protection of the Environment Operations Act 1997* pursuant to an application made on or after 1 September 2005.

(2) Any activity or plant that would, but for this subclause, belong to Group 6 is taken to belong to Group 5 if it is the subject of a development consent in respect of which the EPA had given general terms of approval (within the meaning of section 93 of the *Environmental Planning and Assessment Act 1979*) before 1 September 2005.

**22 Effect on grouping of alteration or replacement of emission units**

(1) If:

(a) an emission unit in Group 1, 2, 3, 4 or 5 is altered as a result of:

(i) the modification of development consent under section 96 (2) of the *Environmental Planning and Assessment Act 1979* pursuant to an application made on or after 1 September 2005, or

(ii) the variation of the licence for the plant, and

(b) the effect of the alteration is that there is an increase in the emission of air impurities, or a change in the nature of the air impurities emitted or the intensity with which air impurities are emitted, from the plant of which the emission unit forms part, or to which it is attached,

the altered emission unit is taken to belong to Group 6.

(2) If, in relation to plant operated in the Greater Metropolitan Area, an emission unit in Group 1, 2, 3, 4 or 5 is replaced, the replacement emission unit is taken to belong to Group 6.

(3) An emission unit is not taken to belong to Group 6 by virtue of subclause (1) or (2) if the conditions of the licence for the activity or plant of which it forms part, or to which it is attached, state that it is taken to belong to Group 1, 2, 3, 4 or 5.

(4) Plant that belongs to Group 1, 2, 3, 4 or 5 remains in that Group despite any alteration or replacement, as referred to in subclause (1) or (2), of an emission unit that forms part of, or is attached to, that plant.

**23 Phasing out of Group 1**

(1) On and from 1 January 2008, any activity or plant that, immediately prior to that date, belonged to Group 1 is taken to belong to Group 2.

(2) An activity or plant is not taken to belong to Group 2 by virtue of subclause (1) if the conditions of the licence for the activity or plant state that it is taken to belong to Group 1.

(3) An application for the variation of the conditions of a licence for the purpose of including a statement referred to in subclause (2) must be made:

(a) in the case of an application for the first such variation, on or before 1 January 2007, and

(b) in the case of an application for any subsequent variation, no later than 12 months before the date on which the current variation expires pursuant to subclause (4).

(4) A variation of the conditions of a licence under this clause expires at the end of 5 years after the date on which notice of the variation is given to the holder of the licence under section 58 of the Act.

**24 Phasing out of Group 2**

(1) On and from 1 January 2012, any activity or plant that, immediately prior to that date, belonged to Group 2 (including any activity or plant previously in Group 1) is taken to belong to Group 5.

(2) An activity or plant is not taken to belong to Group 5 by virtue of subclause (1) if the conditions of the licence for the activity or plant state that it is taken to belong to Group 1 or 2.

(3) An application for the variation of the conditions of a licence for the purpose of including a statement referred to in subclause (2) must be made:

(a) in the case of an application for the first such variation, on or before 1 January 2011, and

(b) in the case of an application for any subsequent variation, no later than 12 months before the date on which the current variation expires pursuant to subclause (4).

(4) A variation of the conditions of a licence under this clause expires at the end of 5 years after the date on which notice of the variation is given to the holder of the licence under section 58 of the Act.

**25 Alternative standards of concentration imposed by licence conditions**

An application for the variation of the conditions of a licence for any activity, plant or emission unit for the purpose of including a statement referred to in clause 22 (3), 23 (2) or 24 (2) is to be accompanied by a report containing each of the following:

(a) particulars of the concentration or rates at which air impurities are emitted as a result of the carrying out of the activity or operation of the plant, based on sampling, analysis and monitoring carried out in accordance with the Approved Methods (Sampling and Analysis) Publication,

(b) the results of an air pollutant impact assessment, conducted in accordance with the Approved Methods (Modelling and Assessment) Publication, in relation to:

(i) the activity, plant or emission unit concerned, and

(ii) any other activity carried on, or plant or emission unit operated, at the scheduled premises concerned,

(c) details of any pollution reduction programs that have been established in relation to the activity, plant or emission unit,

(d) details of any control equipment that has been installed in relation to the activity, plant or emission unit,

(e) such other information as may be relevant to demonstrate the acceptability of impacts associated with the alternative standards arising from the proposed variation of conditions.

**26 Determination of application for variation of licence**

(1) In determining an application to vary the conditions of a licence for any activity or plant for the purposes of clause 22, 23 or 24, the EPA must consider the impact on local and regional air quality and amenity of a decision to grant the application, having regard to:

(a) any pollution reduction programs that have been established, or that the holder of the licence has agreed to establish, in relation to the activity or plant, and

(b) any control equipment that has been installed, or that the holder of the licence has agreed to install, in relation to the activity or plant, and

(c) any load reduction agreement that has been entered into between the EPA and the applicant under Division 5 of Part 2.1 of the *Protection of the Environment Operations (General) Regulation 1998*, and

(d) the principles of ecologically sustainable development set out in section 6 (2) of the *Protection of the Environment Administration Act 1991*,

(e) such other matters as are relevant.

(2) A statement referred to in clause 22 (3), 23 (2) or 24 (2) that is included in the conditions of the licence for any activity, plant or emission unit pursuant to an application made in accordance with clause 25 may not state that the activity or plant belongs to a Group with a lower number than that of the Group to which the activity or plant previously belonged.

(3) Nothing in this clause prevents the EPA, when granting an application to vary the conditions of a licence under this clause, from including other conditions in the licence, including conditions imposing more stringent standards of concentration than those applicable to the Group to which the activity or plant will belong as a consequence of the variation.

**Note.** Refusal of an application to vary the conditions of a licence may be appealed under section 287 of the Act. In this regard, an application is taken to have been refused if it is not granted within 60 days after it is duly made.

### 27 Prescribed standards of concentration for air impurities

(1) For the purposes of section 128 (1) of the Act, the prescribed standards of concentration for emissions of air impurities are:

(a) in relation to any plant referred to in Schedule 2, the standards of concentration specified in that Schedule in relation to that plant, and

(b) in relation to any activity or plant specified in Schedule 3 in respect of a particular purpose, the standards of concentration specified in Schedule 3 in relation to that activity or plant and that purpose, and

(c) in relation to any activity or plant specified in Schedule 4 (other than those covered by Schedule 2 or 3), the standards of concentration specified in Schedule 4 in relation to that activity or plant.

(2) For the purposes of this clause, a requirement in Schedule 2, 3 or 4 that a standard of concentration for volatile organic compounds or carbon monoxide be met is satisfied if either of those standards is met.

**28 Procedures for determining whether prescribed standards of concentration have been exceeded**

(1) For the purpose of determining whether or not a standard of concentration prescribed by Schedule 2, 3 or 4 for an air impurity has been exceeded, the following procedures are to be applied:

(a) a sampling or monitoring position is to be selected in accordance with:

(i) TM-1, if the concentration is to be determined in accordance with the relevant test method, or

(ii) CEM-1 (if measuring opacity) or CEM-2 (in any other case), if the concentration is to be determined in accordance with the relevant monitoring method,

(b) the concentration of the air impurity is to be determined in accordance with the relevant test method, or relevant monitoring method, for the air impurity, using the relevant averaging period,

(c) the concentration determined under paragraph (b) (otherwise than for smoke) is to be expressed by reference to the relevant reference conditions for the standard of concentration after determining the following:

(i) the moisture content of the sample, determined in accordance with TM-22,

(ii) the temperature and pressure at the sampling position, determined in accordance with TM-2,

(iii) if a relevant reference condition is a specified percentage of carbon dioxide—the concentration of carbon dioxide emitted, determined in accordance with TM-24 or CEM-3,

(iv) if a relevant reference condition is a specified percentage of oxygen—the concentration of oxygen emitted, determined in accordance with TM-25 or CEM-3,

(d) the concentration determined under paragraph (b) for smoke (if determined as opacity) is to be expressed by reference to the relevant reference conditions for the standard of concentration.

(2) For the purposes of this clause:

(a) a reference to the ***relevant test method*** or ***relevant monitoring method***, in relation to an air impurity, is a reference to the test method or monitoring method specified in Part 1 of Schedule 5 in relation to that air impurity, and

(b) a reference to the ***relevant averaging period***, in relation to an air impurity, is a reference to:

(i) the averaging period specified in Part 2 of Schedule 5 in relation to that air impurity, or

(ii) such other averaging period as may be specified in the conditions of the relevant licence, and

(c) a reference to the ***relevant reference conditions***, in relation to any air impurity emitted from an activity or plant, is a reference to:

(i) the reference conditions specified in Part 3 of Schedule 5 in relation to that air impurity and that activity or plant, or

(ii) such other reference conditions as may be specified in the conditions of the relevant licence.

**29 Test methods and toxic equivalence factors for dioxins and furans**

(1) For the purpose of determining whether or not a standard of concentration prescribed by Schedule 2, 3 or 4 for dioxins or furans has been exceeded, the following procedures are to be applied in addition to the procedures set out in clause 28:

(a) the unweighted concentration of each dioxin or furan is to be determined in accordance with TM-18, using the measuring period specified in that test method,

(b) the unweighted concentration of each dioxin or furan so determined is to be multiplied by the toxic equivalence factor set out in the Table to this clause in respect of that dioxin or furan.

(2) For the purposes of clause 27, the concentration of dioxins and furans is taken to be the sum of the amounts calculated under subclause (1) (b).

**Table**

| Substance | Toxic Equivalence Factor |
|---|---|
| **Dioxins** | |
| 2,3,7,8 tetrachlorodibenzodioxin (TCDD) | 1.0 |
| 1,2,3,7,8 pentachlorodibenzodioxin (PeCDD) | 1.0 |
| 1,2,3,4,7,8 hexachlorodibenzodioxin (HxCDD) | 0.1 |
| 1,2,3,6,7,8 hexachlorodibenzodioxin (HxCDD) | 0.1 |
| 1,2,3,7,8,9 hexachlorodibenzodioxin (HxCDD) | 0.1 |
| 1,2,3,4,6,7,8 heptachlorodibenzodioxin (HpCDD) | 0.01 |
| octachlorodibenzodioxin (OCDD) | 0.0001 |
| **Furans** | |
| 2,3,7,8 tetrachlorodibenzofuran (TCDF) | 0.1 |
| 1,2,3,7,8 pentachlorodibenzofuran (PeCDF) | 0.05 |
| 2,3,4,7,8 pentachlorodibenzofuran (PeCDF) | 0.5 |
| 1,2,3,4,7,8 hexachlorodibenzofuran (HxCDF) | 0.1 |
| 1,2,3,6,7,8 hexachlorodibenzofuran (HxCDF) | 0.1 |
| 1,2,3,7,8,9 hexachlorodibenzofuran (HxCDF) | 0.1 |
| 2,3,4,6,7,8 hexachlorodibenzofuran (HxCDF) | 0.1 |
| 1,2,3,4,6,7,8 heptachlorodibenzofuran (HpCDF) | 0.01 |
| 1,2,3,4,7,8,9 heptachlorodibenzofuran (HpCDF) | 0.01 |
| octachlorodibenzofuran (OCDF) | 0.0001 |

### 30 Meaning of "approved circumstances" in relation to smoke emissions

(1) For the purposes of Schedules 2, 3 and 4 (otherwise than in relation to ceramic works referred to in Schedule 3), the ***approved circumstances***, in relation to the emission of smoke from any activity or plant in Group 1, are:

(a) that the smoke is emitted:

(i) for a period of no more than 20 minutes per 24 hours, after lighting a boiler or incinerator from cold, being the period during which the boiler or incinerator is brought up to normal operation, or

(ii) in the case of a boiler burning up to 1 tonne of fuel per hour (unless subparagraph (i) applies)—for a period of no more than 10 minutes per 8 hours, or

(iii) in the case of a boiler burning more than 1 tonne but less than 5 tonnes of fuel per hour (unless subparagraph (i) applies)—for a period of no more than 20 minutes per 8 hours, and

(b) that all practicable means are employed to prevent or minimise the emission of smoke during that period.

(2) For the purposes of Schedule 3 (in relation to ceramic works referred to in that Schedule), the ***approved circumstances***, in relation to the emission of smoke from any activity or plant in Group 1, are:

(a) that the smoke is emitted for a period of no more than 10 minutes per hour, and

(b) that all practicable means are employed to prevent or minimise the emission of smoke during that period.

(3) For the purposes of Schedules 2, 3 and 4, the ***approved circumstances***, in relation to the emission of smoke from any activity or plant in Group 2, 3, 4, 5 or 6, are:

(a) that smoke is emitted, as a result of blowing soot from a boiler, for a period of no more than 10 minutes per 8 hours, and

(b) that all practicable means are employed to prevent or minimise the emission of smoke during that period.

**31 EPA may approve alternative restrictions on hydrogen sulfide emissions**

(1) The EPA may grant an approval to an occupier of scheduled premises for an alternative standard of concentration for hydrogen sulfide emissions.

(2) If an occupier has been granted such an approval, and the occupier complies with the alternative standard of concentration and any other conditions specified in the approval, the occupier is exempt from the operation of section 128 of the Act, in so far as that section relates to the emission of hydrogen sulfide.

(3) Before granting an approval under this clause the EPA:

(a) must take into consideration the impact of the approval on local and regional air quality and amenity, and

(b) must be satisfied that it is not practicable for the occupier to comply with the standards prescribed by clause 27 by implementing operational changes to plant or practices, and

(c) must be satisfied that the alternative standard of concentration for hydrogen sulfide emissions has been calculated in accordance with the Approved Methods (Modelling and Assessment) Publication.

(4) The EPA is to grant an approval under this clause by means of a written notice given to the occupier.

(5) An approval under this clause:

(a) is subject to any conditions that may be specified in the approval (including the method of measuring the concentration of hydrogen sulfide emissions), and

(b) may be amended or revoked by the EPA by means of a written notice given to the occupier.

## Division 3 Standards of concentration for non-scheduled premises

### 32 Grouping of activities and plant

(1) Subject to subclause (2), an activity carried out, or plant operated, on non-scheduled premises:

(a) belongs to ***Group A*** if:

(i) it commenced to be carried on, or to operate, before 1 August 1997, or

(ii) it commenced to be carried on, or to operate, on or after 1 August 1997 as a result of development consent granted pursuant to a development application made before 1 August 1997, or

(b) belongs to ***Group B*** if it commenced to be carried on, or to operate, on or after 1 August 1997 as a result of development consent granted pursuant to a development application made on or after 1 August 1997 and before 1 September 2005, or

(c) belongs to ***Group C*** if it commenced to be carried on, or to operate, on or after 1 September 2005 as a result of development consent granted pursuant to a development application made on or after 1 September 2005.

(2) If, in relation to plant operated in the Greater Metropolitan Area, an emission unit in Group A or B is replaced, the replacement emission unit is taken to belong to Group C.

**33 Prescribed standards of concentration for air impurities**

For the purposes of section 128 (1) of the Act, the prescribed standards of concentration for the emission of air impurities in relation to any activity carried on, or plant operated, at non-scheduled premises are as set out in Schedule 6.

**34 Procedures for determining whether prescribed standards of concentration have been exceeded**

(1) For the purpose of determining whether or not a standard of concentration prescribed by Schedule 6 for an air impurity has been exceeded, the following procedures are to be applied:

(a) a sampling or monitoring position is to be selected in accordance with:

(i) TM-1, if the concentration is to be determined in accordance with the relevant test method, or

(ii) CEM-1 (if measuring opacity) or CEM-2 (in any other case), if the concentration is to be determined in accordance with the relevant monitoring method,

(b) the concentration of the air impurity is to be determined in accordance with the relevant test method, or relevant monitoring method, for the air impurity, using the relevant averaging period,

(c) the concentration determined under paragraph (b) (otherwise than for smoke) is to be expressed by reference to the relevant reference conditions for the standard of concentration after determining the following:

(i) the moisture content of the sample, determined in accordance with TM-22,

(ii) the temperature and pressure at the sampling position, determined in accordance with TM-2,

(iii) if a relevant reference condition is a specified percentage of carbon dioxide—the concentration of carbon dioxide emitted, determined in accordance with TM-24 or CEM-3,

(iv) if a relevant reference condition is a specified percentage of oxygen—the concentration of oxygen emitted, determined in accordance with TM-25 or CEM-3,

(d) the concentration determined under paragraph (b) for smoke (if determined as opacity) is to be expressed by reference to the relevant reference conditions for the standard of concentration.

(2) For the purposes of this clause:

(a) a reference to the ***relevant test method*** or ***relevant monitoring method***, in relation to an air impurity, is a reference to the test method or monitoring method specified in Part 1 of Schedule 7 in relation to that air impurity, and

(b) a reference to the ***relevant averaging period***, in relation to an air impurity, is a reference to the averaging period specified in Part 2 of Schedule 7 in relation to that air impurity, and

(c) a reference to the ***relevant reference conditions***, in relation to any air impurity emitted from an activity or plant, is a reference to the reference conditions specified in Part 3 of Schedule 7 in relation to that air impurity and that activity or plant.

**35 Meaning of "approved circumstances" in relation to smoke emissions**

(1) For the purposes of Schedule 6, the ***approved circumstances*** for marine vessels are:

(a) that the smoke is emitted from a marine vessel:

(i) for the period the vessel is approaching, leaving or manoeuvring at a berth, or

(ii) for a period of no more than 30 minutes per 24 hours, after lighting a boiler, being the period during which the boiler is brought up to normal operation, and

(b) that all practicable means are employed to prevent or minimise the emission of smoke during that period.

(2) For the purposes of Schedule 6, the ***approved circumstances*** for premises other than marine vessels are:

(a) that the smoke is emitted from the premises:

(i) for a period of no more than 20 minutes per 24 hours, after lighting a boiler or incinerator from cold, being the period during which the boiler or incinerator is brought up to normal operation, or

(ii) for a period of no more than 10 minutes per 8 hours, as a result of blowing soot from a boiler, and

(b) that all practicable means are employed to prevent or minimise the emission of smoke during that period.

## Division 4 Additional provisions for Group 6 afterburners, flares and vapour recovery units etc

### 36 Application of Division

This Division applies only in respect of afterburners and other thermal treatment plant, flares and vapour recovery units and other non-thermal treatment plant that are in Group 6 (***Group 6 treatment plant***).

### 37 Offence

An occupier of premises on which any Group 6 treatment plant is operated must ensure that the requirements of this Division relating to the operation of any such plant are complied with.

Maximum penalty: 400 penalty units (in the case of a corporation) or 200 penalty units (in the case of an individual).

### 38 Residence time

(1) An afterburner, other than one that employs a catalytic control system, must be operated in such a way that the time between an air impurity entering and exiting the afterburner is:

(a) more than 2 seconds if the air impurity originates from material containing any principal toxic air pollutant, or

(b) more than 0.3 seconds in any other case.

(2) An enclosed ground-level flare for the treatment of landfill gas must be operated in such a way that the time between landfill gas entering and exiting the flare is more than 0.6 seconds.

(3) For the purposes of this clause, the time elapsing between an air impurity (including landfill gas) entering and exiting an afterburner or flare is to be calculated:

(a) using the volumetric flow rate for the air impurity, as determined in accordance with TM-2 or CEM-6, and

(b) using a 1 hour rolling averaging period.

**39 Combustion temperature**

(1) An afterburner, other than one that employs a catalytic control system, must be operated in such a way that the temperature for the combustion of an air impurity by the afterburner is:

(a) more than 980°C if the air impurity originates from material containing any principal toxic air pollutant, or

(b) more than 760°C, in any other case.

(2) An enclosed ground-level flare for the treatment of landfill gas must be operated in such a way that the temperature for the combustion of landfill gas by the flare is more than 760°C.

(3) A reference in this clause to the temperature for the combustion of an air impurity (including landfill gas) is a reference to that temperature as determined in accordance with TM-2, using a 1 hour rolling averaging period.

**40 Destruction efficiency**

(1) Group 6 treatment plant (other than flares) must be operated in such a way that the destruction efficiency of the plant, in relation to an air impurity entering the plant, is:

(a) if the air impurity originates from material containing any principal toxic air pollutant—more than 99.9999%, or

(b) in any other case—more than 99.99%.

(2) An enclosed ground-level flare for the treatment of landfill gas must be operated in such a way that the destruction efficiency of the flare, in relation to landfill gas entering the flare, is more than 98%.

(3) A reference in this clause to the destruction efficiency of Group 6 treatment plant in relation to an air impurity (including landfill gas) is a reference to the destruction efficiency of the plant, in relation to the air impurity, calculated by using the following equation:

$$DE = [1 - (MW_{out} / MW_{in})] \times 100$$

where:

***DE*** is the destruction efficiency, expressed as a percentage.

$MW_{out}$ is the mass emission rate of the air impurity in exhaust emissions prior to its release to the atmosphere using a 1 hour rolling averaging period.

$MW_{in}$ is the mass feed rate of the air impurity in a waste feedstream using a 1 hour rolling averaging period.

### 41 Flares

A flare operated for the treatment of air impurities must be operated in such a way that a flame is present at all times while air impurities are required to be treated.

## Division 5 Miscellaneous

### 42 Emission points (cf Clean Air (Plant and Equipment) Regulation 1997, cl 4)

(1) For the purposes of section 128 (1) of the Act, the point at which the standard of concentration, or rate of emission, of air impurities resulting from the carrying on of any activity, or the operation of any plant, on any premises is not to be exceeded is a point between:

(a) the point of origin of the air impurities, that is:

(i) the point where the air impurities originate, or

(ii) if the air impurities subsequently pass through any control equipment—the point where the air impurities emerge from that equipment, and

(b) the point of release of the air impurities, that is:

(i) the point where the air impurities pass into the atmosphere, or

(ii) if air, gas or vapour is added to the air impurities before that point after passing through any control equipment, the point immediately before the point where the air, gas or vapour is added.

(2) In any case where there is more than one point of release applying in relation to any activity or plant, a reference in subclause (1) to the point of release is a reference to all of the points of release applying in relation to the activity or plant.

### 43 Combination of air impurities from 2 or more sources

(1) This clause applies to an air impurity that is combined with any air impurity of the same kind, or with any other air, gas or vapour, from any other source on scheduled premises before being emitted.

(2) For the purposes of section 128 (1) of the Act, the prescribed standard of concentration for the emission of an air impurity to which this clause applies is to be determined in accordance with TM-38.

(3) Nothing in this clause authorises the emission of an air impurity in excess of the standard of concentration prescribed for the emission of the air impurity by Divisions 2 and 3.

(4) A reference in this clause to a source is a reference to an activity or item of plant.

**44 Prescribed standards of concentration not to affect other controls**

For the avoidance of doubt, this Part does not authorise the occupier of premises to carry on an activity, or operate any plant, in or on the premises in such a manner as to cause or permit the emission of air impurities in excess of those allowed by any other controls that apply in respect of the activity or plant (such as a licence or a development consent granted under the *Environmental Planning and Assessment 1979*).

**45 Exemptions from prescribed standards of concentration**

The standards of concentration prescribed by this Part do not apply to or in relation to any plant during the following periods:

(a) a ***start-up*** period—that is, while the plant is being brought up to normal operation following a period of inactivity,

(b) a ***shutdown*** period—that is, while the plant is being taken out of service from normal operation to inactivity.

**Note.** While the standards prescribed by this Part do not apply, the occupier of the premises concerned will be subject to the requirements of section 128 (2) of the Act in relation to the prevention and minimisation of air pollution.

**46 Exemption from prescribed standards of concentration for the emission of smoke**

(1) The EPA may, by written notice given to a public authority, exempt the public authority from the operation of section 128 of the Act and Divisions 2 and 3, in so far as those provisions relate to the emission of smoke.

(2) The EPA may only grant such an exemption in relation to smoke emitted in the course of the following activities:

(a) research to improve safety in relation to the flammability of materials and smoke reduction (including the development of testing procedures),

(b) training of fire-fighters and the rating of the effectiveness of fire extinguishers and fire suppression systems,

(c) testing undertaken to certify that manufactured or imported products comply with Australian Standards or International Standards and meet any legislative requirements placed on them.

(3) Before granting an exemption under this clause, the EPA:

(a) must take into consideration the impact of the exemption on local and regional air quality and amenity, and

(b) must be satisfied that it is not practicable for the public authority to comply with the provisions referred to in subclause (1), in relation to the emission of smoke, by implementing operational changes to plant or practices.

(4) An exemption under this clause:

(a) is subject to any conditions that may be specified in the written notice by which it is granted, and

(b) may be amended or revoked by means of a further written notice given to the public authority, and

(c) unless sooner revoked by the EPA, remains in force:

(i) for a period of 12 months from the date it is granted, or

(ii) for any other period specified in the written notice by which it is granted.

(5) In this clause:

***Australian Standard*** means a standard published by Standards Australia.

***International Standard*** means a standard published by the International Organization for Standardization.

# Part 5 Control of volatile organic liquids

### 47 Definitions

In this Part:

***delivery tank*** means a tank mounted on a tank vehicle (not being the fuel tank of the vehicle).

***large loading plant*** means industrial plant that is used for loading volatile organic liquid, at a rate of more than 30 megalitres per year, into the delivery tanks of large tank vehicles.

***large storage tank*** means a storage tank having a capacity of 150 kilolitres or more.

***large tank vehicle*** means a tank vehicle having one or more delivery tanks with a total capacity of more than 12 kilolitres.

***small storage tank*** means a storage tank having a capacity of 8 kilolitres or more but less than 150 kilolitres.

***storage tank*** means a tank that is installed on any premises (other than a vessel).

***tank*** means a container, or an isolated section of a container, that is used or designed to be used for the storage of volatile organic liquid, but does not include anything that is designed to hold volatile organic liquid under pressure and to prevent the emission of any volatile organic liquid or volatile organic liquid vapour.

***tank vehicle*** means a vehicle used or designed to be used for the transport of volatile organic liquid from one tank to another, whether or not the vehicle is moveable under its own power, but does not include a railway vehicle.

***volatile organic liquid*** means any organic compound that exists as a liquid at actual conditions of use or storage, unless it has a true vapour pressure of less than or equal to 25.8mm Hg (0.5 psia).

**48 Equipment and plant to be fitted with prescribed control equipment**

(1) Unless exempted from the provisions of this clause by clause 49 or by the EPA under section 284 of the Act, the occupier of any premises must not use or operate, or cause or allow to be used or operated, any fuel burning equipment or industrial plant in or on those premises unless that equipment or plant is fitted with the control equipment prescribed by this Part.

(2) The occupier of any premises in or on which is installed any fuel burning equipment or industrial plant fitted with control equipment prescribed by this Part must, if specifications for the maintenance or operation of that fuel burning equipment, industrial plant or control equipment are prescribed by this Part, ensure that those specifications are complied with.

(3) An occupier who contravenes this clause is guilty of an offence.

Maximum penalty: 400 penalty units (in the case of a corporation) or 200 penalty units (in the case of an individual).

**49 Exemptions from requirement for prescribed control equipment**

(1) The occupier of any premises is exempt from the operation of clause 48 in relation to any industrial plant if:

(a) the plant is fitted with control equipment that is approved by the EPA by notice in writing to the occupier, and

(b) the plant and control equipment are maintained and operated in such manner as the EPA specifies in that notice of approval.

(2) The occupier of any premises is exempt from the operation of clause 48 in relation to small storage tanks if:

(a) the EPA is satisfied that the volume of volatile organic liquid loaded into the storage tanks on those premises per year does not usually exceed 600 kilolitres, and

(b) the EPA grants an exemption from the operation of that clause by notice in writing to the occupier, and

(c) the occupier complies with such conditions as the EPA specifies in the exemption.

(3) The EPA may vary or revoke an approval or exemption under this clause at any time by notice in writing served on the holder of the approval or exemption.

**50 Prescribed control equipment for large storage tanks**

(1) This clause applies to any large storage tank situated anywhere within the Sydney, Newcastle or Wollongong Metropolitan Area.

(2) For the purposes of clause 48, the following control equipment is the prescribed control equipment to be fitted to any large storage tank:

(a) a drainage system comprising a small sump or tundish fitted under each water draw-off valve and connected to a totally enclosed drain,

(b) if the volatile organic liquid stored in the tank has a vapour pressure of or below 75 kilopascals:

(i) a floating metal roof that, under normal operating conditions, floats on the surface of the liquid, or

(ii) a floating cover constructed of material impervious to vapour that, under normal operating conditions, floats on the surface of the liquid inside a fixed roof, or

(iii) a vapour disposal or recovery system of the kind referred to in subclause (6),

(c) if the volatile organic liquid stored in the tank has a vapour pressure above 75 kilopascals, a vapour disposal or recovery system of the kind referred to in subclause (6).

(3) Subclause (2) (a) does not apply in the case of tanks used for the storage of volatile organic liquid (other than crude petroleum) received by tank-to-tank transfer from other storage tanks.

(4) A floating roof or cover referred to in subclause (2) (b) must be constructed so as to prevent the escape of vapour through the roof or cover and so that:

(a) vapour beneath the floating roof or cover is contained by skirt plates situated near the edges of the roof or cover and surrounding any openings in the roof or cover or by similar means, and

(b) the roof or cover is equipped with one or more closure seals to close the spaces between the roof or cover and the tank walls and between any openings in the roof or cover and any equipment passing through those openings, and

(c) seals on floating roofs are shielded from the weather, and

(d) weather-shields are moveable to permit proper inspection of seals.

(5) For the purposes of clause 48 (2), the level of volatile organic liquid in a large storage tank that is fitted with a floating roof or cover referred to in subclause (2) (b) must be maintained, during normal operating conditions, at a depth sufficient to prevent the supports of the floating roof or cover from resting on the floor of the tank.

(6) A vapour disposal or recovery system referred to in subclause (2) (b) or (c) must be constructed so that the vapour emitted from the tank:

(a) is incinerated, so that the total concentration of unburnt vapour emitted to the atmosphere does not exceed 1.5 grams per cubic metre of the gases resulting from the incineration process, or

(b) is recovered, so that the total concentration of unrecovered vapour emitted to the atmosphere during any period of 4 hours does not exceed 110 milligrams per litre of volatile organic liquid passing into the tank during that period.

(7) The total concentration of unburnt vapour referred to in subclause (6) (a) is to be determined as set out in TM-19, the total concentration of unrecovered vapour referred to in subclause (6) (b) is to be determined as set out in TM-20 and the calculation of the vapour pressure of volatile organic liquid stored in tanks is to be carried out in accordance with TM-21.

(8) Subclauses (6) and (7) do not apply to large storage tanks on scheduled premises, within the meaning of Part 4, that belong to Group 6, within the meaning of that Part.

**51 Prescribed control equipment for large loading plant**

(1) This clause applies to any large loading plant situated anywhere within the Sydney Metropolitan Area.

(2) For the purposes of clause 48, the following control equipment is the prescribed control equipment to be fitted to large loading plant:

(a) a vapour collection system by which all vapour displaced from tanks during loading operations is collected and conveyed to a vapour recovery or disposal system through vapour lines having an internal diameter of not less than 65 per cent of the largest fill-line used for connection to the delivery tank,

(b) an interlock system that prevents the loading of a delivery tank unless the vapour collection system is first connected to that tank,

(c) fittings on all liquid and vapour lines that make vapour-tight connections with the respective mating fittings on the delivery tank and that close automatically when disconnected,

(d) a vapour recovery or disposal system of the kind referred to in subclause (4).

(3) The interlock system referred to in subclause (2) (b) is taken not to be prescribed for the purposes of clause 48 if it forms part of industrial plant used only for loading delivery tanks that are themselves fitted with such an interlock system.

(4) A vapour recovery or disposal system referred to in subclause (2) (d) must be constructed so that the vapour resulting from loading operations:

(a) is incinerated, so that the total concentration of unburnt vapour emitted to the atmosphere does not exceed 1.5 grams per cubic metre of the gases resulting from the incineration process, or

(b) is recovered, so that the total concentration of unrecovered vapour emitted to the atmosphere during any period of 4 hours does not exceed 110 milligrams per litre of volatile organic liquid passing out of the plant during that period.

(5) The total concentration of unburnt vapour referred to in subclause (4) (a) is to be determined as set out in TM-19 and the total concentration of unrecovered vapour referred to in subclause (4) (b) is to be determined as set out in TM-20.

(6) Subclauses (4) and (5) do not apply to large storage tanks on scheduled premises, within the meaning of Part 4, that belong to Group 6, within the meaning of that Part.

**52 Prescribed control equipment for small storage tanks**

(1) This clause applies to any small storage tank situated anywhere within the Sydney Metropolitan Area other than the local government area of Hawkesbury.

(2) For the purposes of clause 48, the following control equipment is the prescribed control equipment to be fitted to a small storage tank:

(a) a vapour transfer system by which all vapour displaced by the transfer of volatile organic liquid into the storage tank is returned to the delivery tank being unloaded by means of a vapour return line,

(b) a coupling on the vapour return line that makes a vapour-tight connection with the vapour return hose on the delivery tank and that closes automatically when disconnected,

(c) in the case of a tank that is filled by the operation of gravity, an overfill protection system designed to stop the flow of volatile organic liquid into the storage tank before there is insufficient space in that tank to receive the contents of the tank vehicle's transfer hose,

(d) a coupling on the storage tank's fill-pipe that makes a liquid-tight connection with the delivery tank's liquid transfer hose,

(e) in the case of a storage tank located above the ground, pressure vacuum valves on all atmospheric vents.

(3) The vapour transfer system referred to in subclause (2) (a) may be used to serve more than one storage tank on the same premises.

(4) A vapour return line referred to in subclause (2) (a) must be of vapour-tight construction and must have an internal diameter:

(a) in the case of such part of the vapour return line as is upstream of the first fitting or change in direction from the tank:

(i) not less than 50 per cent of the internal diameter of the fill-pipe, or

(ii) in the case of a tank installed before 1 May 1982 and in which the vapour return line is taken from the atmospheric vent, as large as practicable having regard to the internal diameter of the existing vent connection, and

(b) in the case of such part of the vapour return line as is downstream of the first fitting or change in direction from the tank, not less than 65 per cent of the internal diameter of the fill-pipe.

(5) The pressure vacuum valves referred to in subclause (2) (e):

(a) except as provided in paragraph (b), must be set to be closed when the pressure in the tank is between 15 kilopascals above, and 0.5 kilopascals below, ambient pressure, or

(b) in the case of tanks installed before 1 May 1982, may be set to be closed when the pressure in the tank is between the design operating maximum pressure and the design operating maximum vacuum.

(6) For the purposes of clause 48 (2), a hatch, manhole or other cover on or associated with a storage tank fitted with the prescribed control equipment referred to in subclause (2) must not be opened if, in so doing, vapour would be likely to be emitted to the atmosphere, except:

(a) in an emergency, or

(b) for the purpose of tank gauging or sampling through a dip hatch (when no liquid transfer hoses are connected to the tank or when any connected hoses are closed), or

(c) for the purpose of reasonable maintenance.

**53 Prescribed control equipment for large tank vehicles**

(1) This clause applies to:

(a) the loading of a large tank vehicle from large loading plant, and

(b) the unloading of a large tank vehicle into a small storage tank,

where the loading or unloading takes place anywhere within the Sydney Metropolitan Area.

(2) The owner of a tank vehicle must not use the tank vehicle, or allow the tank vehicle to be used, to load or unload volatile organic liquid unless the tank vehicle is fitted with the following control equipment and the equipment is maintained in an efficient condition:

(a) a vapour handling system for the transfer between delivery tanks of vapour displaced during loading or unloading operations,

(b) an overfill protection device, located in the delivery tank, that is designed to stop the flow of volatile organic liquid into the tank as near as practicable to the level of minimum ullage,

(c) couplings on liquid transfer pipes and hoses on the tank vehicle that make a liquid-tight connection with the respective mating fittings and that, in the case of liquid transfer pipes, close automatically when disconnected,

(d) hatch covers on any openings that are required to be vapour-tight when closed,

(e) pressure vacuum valves on all atmospheric vents (except emergency vents) that are set to be closed when the pressure in the tank is between 15 kilopascals above, and 3 kilopascals below, ambient pressure, being valves that may be fitted with a vent by-pass or pilot-bleed system if the maximum area for free venting is limited to 15 square millimetres.

Maximum penalty: 200 penalty units (in the case of a corporation) or 40 penalty units (in the case of an individual).

(3) The vapour handling system referred to in subclause (2) (a) must comply with the following requirements:

(a) the delivery tank must be fitted with a vapour transfer valve connecting the tank, through a manifold if desired, to a vapour line coupling or permanently connected vapour hose,

(b) the vapour transfer valve:

(i) must be interlocked with the delivery valve, so as to be open whenever volatile organic liquid is being transferred to or from the tank, and

(ii) if the vapour return hose is not permanently connected to the delivery tank, must be interlocked with the vapour line coupling on the delivery tank, so as to be closed unless the vapour return hose is attached to that coupling,

(c) unless the delivery tank is fitted with a permanently connected vapour hose, the tank vehicle must carry a vapour return hose of vapour-tight construction, fitted to connect:

(i) at one end, to the vapour line coupling on the vehicle, and

(ii) at the other end, to a vapour return coupling at the liquid loading or unloading plant,

(d) the vapour line (including any vapour hose carried by the vehicle) must have an internal diameter of not less than 65 per cent of the internal diameter of the largest liquid transfer hose carried by the vehicle,

(e) couplings on vapour transfer hoses on the tank vehicle must make vapour-tight connections with the respective fittings on the vehicle.

(4) A person is exempt from the operation of this clause if:

(a) the vehicle is fitted with control equipment that is approved by the EPA by notice in writing to the owner of the vehicle, and

(b) the vehicle and control equipment are maintained and operated in such manner as the EPA specifies in that notice of approval.

(5) The EPA may vary or revoke an approval or exemption under this clause at any time by notice in writing served on the holder of the approval or exemption.

**54 Loading and unloading large tank vehicles**

(1) This clause applies to:

(a) the loading of a large tank vehicle from large loading plant, and

(b) the unloading of a large tank vehicle into a small storage tank,

where the loading or unloading takes place anywhere within the Sydney Metropolitan Area.

(2) While a tank vehicle is being loaded with volatile organic liquid from large loading plant, the person in charge of the vehicle must ensure that the delivery tank mounted on the vehicle is properly connected to the vapour collection system of that plant.

Maximum penalty: 200 penalty units (in the case of a corporation) or 40 penalty units (in the case of an individual).

(3) While a tank vehicle is being used to load volatile organic liquid into a small storage tank, the person in charge of the vehicle must ensure that:

(a) before any such loading takes place, the vapour return hose is connected to the appropriate vapour line coupling on the tank vehicle (except in the case of a permanently connected hose) and to the appropriate vapour return coupling on or associated with the storage tank, and

(b) the vapour return hose is not disconnected while volatile organic liquid is being loaded into the storage tank, and

(c) the connection or disconnection of any hose is done in such a manner as to avoid or minimise spillage, and

(d) the liquid transfer hose is not disconnected from the storage tank until the hose is empty of liquid.

Maximum penalty: 200 penalty units (in the case of a corporation) or 40 penalty units (in the case of an individual).

(4) The person in charge of a tank vehicle must not, without reasonable excuse, leave open a hatch, manhole or other cover on any delivery tank mounted on the vehicle if to do so would be likely to result in vapour being emitted to the atmosphere.

Maximum penalty: 200 penalty units (in the case of a corporation) or 40 penalty units (in the case of an individual).

# Part 6 Limits on sulfur content of liquid fuel

### 55 Limits on sulfur content of liquid fuel

(1) A person must not, anywhere in the Sydney, Wollongong, Newcastle or Central Coast Metropolitan Area, operate any fuel burning equipment with liquid fuel having a sulfur content of more than 0.5 per cent by weight, as measured in accordance with TM-6.

Maximum penalty: 200 penalty units (in the case of a corporation) or 40 penalty units in the case of an individual.

(2) A person must not, anywhere outside the Sydney, Wollongong, Newcastle or Central Coast Metropolitan Area, operate any fuel burning equipment with liquid fuel having a sulfur content of more than 2.5 per cent by weight, as measured in accordance with TM-6.

Maximum penalty: 200 penalty units (in the case of a corporation) or 40 penalty units (in the case of an individual).

(3) This clause does not prevent a person from operating fuel burning equipment with liquid fuel having a sulfur content in excess of a limit imposed by subclause (1) or (2) in the following circumstances:

(a) circumstances in which the emissions of sulfur compounds to the atmosphere arising from the operation of the equipment are restricted (by means of control equipment or otherwise) in such a manner that they are no greater than they would be if the equipment were operated (in the absence of any such restriction) with fuel having a sulfur content within the relevant limit,

(b) circumstances in which the liquid fuel is used for the lighting-up or flame-stabilising of fuel burning equipment designed primarily to burn solid fuel and the sulfur content of the liquid fuel is no more than 2.5 per cent by weight,

(c) circumstances in respect of which the person operating the fuel burning equipment holds a written exemption issued by the EPA, being circumstances that, in the opinion of the EPA, are special circumstances in respect of the fuel burning equipment or the premises in which the fuel burning equipment is installed,

(d) circumstances in which:

(i) the emissions of sulfur compounds to the atmosphere arising from the operation of the fuel burning equipment are restricted (by means of control equipment or otherwise) in accordance with the requirements of a licence, and

(ii) the fuel has a sulfur content within the limits imposed by that licence.

(4) It is a defence to a prosecution for an offence arising under this clause if the defendant establishes that:

(a) the fuel burning equipment was being operated with liquid fuel supplied under an order placed by the defendant for liquid fuel conforming to the relevant requirements of this clause, and

(b) the defendant had reasonable grounds to believe, and did in fact believe, that the sulfur content of the liquid fuel conformed to those requirements.

## Part 7 Miscellaneous

### 56 Savings relating to domestic solid fuel heaters

Any act, matter or thing that, immediately before the repeal of the *Clean Air (Domestic Solid Fuel Heaters) Regulation 1997*, had effect under that Regulation continues to have effect under this Regulation.

### 57 Savings relating to motor vehicles and motor vehicle fuels

(1) Any act, matter or thing that, immediately before the repeal of the *Clean Air (Motor Vehicles and Motor Vehicle Fuels) Regulation 1997*, had effect under that Regulation continues to have effect under this Regulation.

(2) Without limiting the generality of subclause (1), any exemption or certificate issued under a provision of the *Clean Air (Motor Vehicles and Motor Vehicle Fuels) Regulation 1997* and in force immediately before the repeal of that Regulation is taken to have been issued under the corresponding provision of this Regulation and is subject to the same terms and conditions on which it was issued.

**[4] Schedules 2–7**

Omit Schedule 2. Insert instead:

## Schedule 2 Standards of concentration for scheduled premises: afterburners, flares and vapour recovery units

(Clause 27)

| **Afterburners and other thermal treatment plant (excluding flares)** | | | |
|---|---|---|---|
| **Air impurity** | **Plant** | **Standard of concentration** | |
| Solid particles (Total) | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any afterburner or other thermal treatment plant | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 20 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| | Any afterburner or other thermal treatment plant treating air impurities that originate from material not containing any principal toxic air pollutant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Hydrogen chloride (HCl) | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2, 3 or 4 | 400 $mg/m^3$ |
| | | Group 5 or 6 | 100 $mg/m^3$ |

| **Afterburners and other thermal treatment plant (excluding flares)** | | | |
|---|---|---|---|
| **Air impurity** | **Plant** | **Standard of concentration** | |
| Type 1 substances (in aggregate) | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Smoke | Any afterburner or other thermal treatment plant treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6 | Ringelmann 1 or 20% opacity |

| **Flares** | | | |
|---|---|---|---|
| **Air impurity** | **Plant** | **Standard of concentration** | |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any enclosed ground-level flare treating landfill gas | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs |

| **Flares** | | | |
|---|---|---|---|
| **Air impurity** | **Plant** | **Standard of concentration** | |
| Smoke | Any flare | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4 or 5 | Ringelmann 1 or 20% opacity |
| | | Group 6 | No visible emission other than for a total period of no more than 5 minutes in any 2 hours. |

| **Vapour recovery units and other non-thermal treatment plant** | | | |
|---|---|---|---|
| **Air impurity** | **Plant** | **Standard of concentration** | |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any vapour recovery unit treating air impurities that originate from material containing any principal toxic air pollutant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 20 $mg/m^3$ VOCs |
| | Any vapour recovery unit treating air impurities that originate from material not containing any principal toxic air pollutant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs |

# Schedule 3 Standards of concentration for scheduled premises: activities and plant used for specific purposes

(Clause 27)

| **Agricultural fertiliser or ammonium nitrate production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Sulfur dioxide ($SO_2$) | Acid production | Group 1 | 5,600 $mg/m^3$ |
| | | Group 2, 3, 4 or 5 | 2,800 $mg/m^3$ |
| | | Group 6 | 1,000 $mg/m^3$ |
| Sulfuric acid mist ($H_2SO_4$) or sulfur trioxide ($SO_3$) or both, as $SO_3$ equivalent | Acid production | Group 1 | 200 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 100 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Acid production | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| Smoke | Acid production | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Aluminium: primary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (total) | Any activity or plant (except as listed below) | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Pre-baked anode production | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 300 $mg/m^3$ |
| Fluorine ($F_2$) and any compound containing fluorine, as total fluoride (HF) equivalent | Production of aluminium from alumina | Group 1 | 40 $mg/m^3$ |
| | | Group 2 | 20 $mg/m^3$ |
| | | Group 3 or 4 | 1.0 kg/t Al |
| | | Group 5 | 0.8 kg/t Al |
| | | Group 6 | 0.6 kg/t Al |
| Dioxins or furans | Pre-baked anode production | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Pre-baked anode production | Group 1 | — |
| | | Groups 2, 3 and 4 | — |
| | | Group 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |

| **Aluminium: primary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Smoke | Pre-baked anode production | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Aluminium: secondary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (total) | Any activity or plant, including any smelting, refining or holding furnace (except as listed below) | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any activity or plant, including any smelting, refining or holding furnace | Group 1 | 2,500 $mg/m^3$ |
| | | Group 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 300 $mg/m^3$ |
| Fluorine ($F_2$) or any compound containing fluorine, as total fluoride (HF) equivalent | Any smelting or refining furnace | Group 1 | 100 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 50 $mg/m^3$ |

| Aluminium: secondary production | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Type 1 substances (in aggregate) | Any smelting or refining furnace | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any smelting or refining furnace | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any smelting or refining furnace | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any smelting or refining furnace | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any smelting or refining furnace | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Smoke | Any activity or plant | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Cement or lime production or cement or lime handling** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any kiln | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Groups 2, 3, and 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any kiln other than a lime kiln | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 500 $mg/m^3$ |
| | Any lime kiln | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 400 $mg/m^3$ |
| Fluorine ($F_2$), or any compound containing fluorine, as total fluoride (HF) equivalent | Any kiln fired on a liquid or solid standard fuel or a non-standard fuel | Group 1 | 100 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 50 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any kiln fired on a non-standard fuel | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any kiln fired on a non-standard fuel | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |

| Cement or lime production or cement or lime handling | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Cadmium (Cd) or mercury (Hg) individually | Any kiln fired on a non-standard fuel | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any kiln fired on a non-standard fuel that contains precursors of dioxin or furan formation | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any kiln fired on a non-standard fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Smoke | Any kiln | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Ceramic works** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any kiln or dryer | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any kiln or dryer | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 500 $mg/m^3$ |
| Fluorine ($F_2$), or any compound containing fluorine, as total fluoride (HF) equivalent | Any kiln or dryer | Group 1 | 100 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 50 $mg/m^3$ |
| Hydrogen chloride (HCl) | Any activity, other than the manufacture of glazed terracotta roofing tiles | Group 1, 2, 3 or 4 | 400 $mg/m^3$ |
| | | Group 5 or 6 | 100 $mg/m^3$ |
| | Manufacture of glazed terracotta roofing tiles | Group 1, 2, 3 or 4 | — |
| | | Group 5 or 6 | 100 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any kiln or dryer fired on a non-standard fuel | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any kiln or dryer fired on a non-standard fuel | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |

| Ceramic works | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Cadmium (Cd) or mercury (Hg) individually | Any kiln or dryer fired on a non-standard fuel | Group 1, 2 or 3 | — |
| | | Group 4 | 3 mg/$m^3$ |
| | | Group 5 | 1 mg/$m^3$ |
| | | Group 6 | 0.2 mg/$m^3$ |
| Dioxins or furans | Any kiln or dryer fired on a non-standard fuel that contains precursors of dioxin or furan formation | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 ng/$m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any kiln or dryer fired on a non-standard fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 mg/$m^3$ VOCs or 125 mg/$m^3$ CO |
| Smoke | Any kiln (other than those used for firing dark red or dark brown face bricks formed by dry press brick machines)<br>Any dryer | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |
| | Any kiln used for firing dark red or dark brown face bricks formed by dry press brick machines | Group 1 | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Electricity generation** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any activity or plant using a liquid or solid standard fuel or a non-standard fuel | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any boiler operating on a fuel other than gas, including a boiler used in connection with an electricity generator that forms part of an electricity generating system with a capacity of 30 MW or more | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 800 $mg/m^3$ |
| | | Group 6 | 500 $mg/m^3$ |
| | Any turbine operating on gas, being a turbine used in connection with an electricity generating system with a capacity of 30 MW or more | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 or 6 | 70 $mg/m^3$ |
| | Any turbine operating on a fuel other than gas, being a turbine used in connection with an electricity generating system with a capacity of 30 MW or more | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 150 $mg/m^3$ |
| | | Group 6 | 90 $mg/m^3$ |
| Fluorine ($F_2$) and any compound containing fluorine, as total fluoride (HF) equivalent | Any activity or plant using a liquid or solid standard fuel or a non-standard fuel | Group 1 | 100 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 50 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any activity or plant using a non-standard fuel | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |

| **Electricity generation** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Type 1 substances and Type 2 substances (in aggregate) | Any activity or plant using a non-standard fuel | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any activity or plant using a non-standard fuel | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any activity or plant using a non-standard fuel that contains precursors of dioxin or furan formation | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any activity or plant using a non-standard fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Smoke | Any activity or plant using a liquid or solid standard fuel or a non-standard fuel | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Glass production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any melting furnace | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any melting furnace except manufacture of glass using sodium nitrate ($NaNO_3$) | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 700 $mg/m^3$ |
| | Any melting furnace for manufacture of glass using sodium nitrate ($NaNO_3$). | Group 1, 2, 3, 4 or 5 | 4,000 $mg/m^3$ |
| | | Group 6 | 1,500 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any melting furnace | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any melting furnace | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any melting furnace | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |

| Glass production | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Smoke | Any melting furnace | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| Iron and steel: primary production | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any fuel burning equipment<br>Any sinter plant<br>Any kiln<br>Any power-generating plant<br>Any furnace | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any fuel burning equipment<br>Any sinter plant<br>Any kiln<br>Any power-generating plant<br>Any furnace | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 500 $mg/m^3$ |

| **Iron and steel: primary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Hydrogen sulfide ($H_2S$) (see also clause 31) | Any fuel burning equipment<br>Any sinter plant<br>Any kiln<br>Any power-generating plant<br>Any furnace<br>Any reduction control system not followed by combustion | Group 1, 2, 3, 4, 5 or 6 | 5 $mg/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any activity or plant using a non-standard fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Type 1 substances (in aggregate) | Any activity or plant | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any activity or plant | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any activity or plant | Group 1 | — |
| | | Groups 2, 3 and 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any sinter plant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |

| Iron and steel: primary production | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Smoke | Any fuel burning equipment<br>Any sinter plant<br>Any kiln<br>Any power-generating plant<br>Any furnace | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| Iron and steel: secondary production | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any fuel burning equipment | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity<br>Any electric arc furnace | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any activity or plant except any electric arc furnace | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any steelmaking furnace | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 2 substances (in aggregate) | Any steelmaking furnace | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |

| **Iron and steel: secondary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Cadmium (Cd) or mercury (Hg) individually | Any steelmaking furnace | Group 1 | — |
| | | Group 2, 3 or 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any steelmaking furnace | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any steelmaking furnace | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Smoke | Any steelmaking furnace | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Non-ferrous metals (excluding aluminium): primary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any sinter plant<br>Any smelting or refining process<br>Any alloying or casting process<br>Any fuel burning equipment | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any smelting or refining process<br>Any alloying or casting process<br>Any sinter plant<br>Any fuel burning equipment | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any activity or plant using a non-standard fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Type 1 substances (in aggregate) | Any smelting or refining process<br>Any alloying or casting process<br>Any sinter plant | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any smelting or refining process<br>Any alloying or casting process<br>Any sinter plant | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |

| **Non-ferrous metals (excluding aluminium): primary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Cadmium (Cd) or mercury (Hg) individually | Any smelting or refining process<br>Any alloying or casting process<br>Any sinter plant | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any sinter plant | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Smoke | Any sinter plant<br>Any smelting or refining process<br>Any alloying or casting process<br>Any fuel burning equipment | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Non-ferrous metals (excluding aluminium): secondary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any activity or plant (except as listed below) | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |

| **Non-ferrous metals (excluding aluminium): secondary production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any activity or plant | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 300 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any smelting or refining process | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any smelting or refining process | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any smelting or refining process | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any smelting or refining process | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any smelting or refining process | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| Smoke | Any activity or plant | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Paper, paper pulp or pulp products industries** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any boiler used in connection with power generation<br>Any kraft recovery boiler<br>Any lime kiln | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any boiler used in connection with power generation<br>Any kraft recovery boiler | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 300 $mg/m^3$ |
| | Any lime kiln | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 400 $mg/m^3$ |
| Hydrogen sulfide ($H_2S$) (see also clause 31) | Any kraft recovery boiler<br>Any lime kiln<br>Any digester system, if not followed by combustion<br>Any brown stock washer system, if not followed by combustion<br>Any condensate stripper, if not followed by combustion | Group 1, 2, 3, 4, 5 or 6 | 5 $mg/m^3$ |
| Total reduced sulfides (TRS), as $H_2S$ equivalent | Any kraft recovery boiler<br>Any lime kiln<br>Any digester system, if not followed by combustion<br>Any brown stock washer system, if not followed by combustion<br>Any condensate stripper, if not followed by combustion | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 4 $mg/m^3$ |

| Paper, paper pulp or pulp products industries | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Type 1 substances (in aggregate) | Any boiler used in connection with power generation using a non-standard fuel<br>Any lime kiln using a non-standard fuel | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any boiler used in connection with power generation using a non-standard fuel<br>Any lime kiln using a non-standard fuel | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |
| Cadmium (Cd) or mercury (Hg) individually | Any boiler used in connection with power generation using a non-standard fuel<br>Any lime kiln using a non-standard fuel | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any kraft recovery boiler<br>Any boiler used in connection with power generation using a non-standard fuel that contains precursors of dioxin or furan formation<br>Any lime kiln using a non-standard fuel that contains precursors of dioxin or furan formation | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any boiler used in connection with power generation using a non-standard fuel<br>Any lime kiln using a non-standard fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs and 125 $mg/m^3$ CO |
| Methanol | Any kraft recovery boiler | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.012 kg/t of black liquor solids fired |

| **Paper, paper pulp or pulp products industries** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Smoke | Any lime kiln<br>Any kraft recovery boiler<br>Any boiler used in connection with power generation | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Petrochemical production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (total) | Any activity or plant (except as listed below) | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any fuel burning equipment | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| Hydrogen sulfide ($H_2S$) (see also clause 31) | Any reduction control system not followed by combustion<br>Any sulfur recovery plant | Group 1, 2, 3, 4, 5 or 6 | 5 $mg/m^3$ |

| **Petrochemical production** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any thermal oxidation process<br>Any catalytic oxidation process<br>Any vapour incineration | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| | Any vapour recovery unit<br>Any distillation process | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ |
| Smoke | Any activity or plant using a liquid or solid standard fuel or a non-standard fuel | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

| **Petroleum refining** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (total) | Any fuel burning equipment<br>Any fluidised bed catalytic cracking unit regenerator | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | Any fuel burning equipment<br>Any fluidised bed catalytic cracking unit regenerator | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| Hydrogen sulfide ($H_2S$) (see also clause 31) | Any reduction control system not followed by combustion<br>Any sulfur recovery plant | Group 1, 2, 3, 4, 5 or 6 | 5 $mg/m^3$ |

| **Petroleum refining** | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Volatile organic compounds (VOCs), as n-propane equivalent | Any thermal oxidation process<br>Any catalytic oxidation process<br>Any vapour incineration | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| | Any vapour recovery unit<br>Any distillation process | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs |
| Smoke | Any fuel burning equipment using a liquid or solid standard fuel or a non-standard fuel<br>Fluidised bed catalytic cracking unit regenerator<br>Any boiler used in connection with power generation | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |

# Schedule 4 Standards of concentration for scheduled premises: general activities and plant

(Clause 27)

| General standards of concentration | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Solid particles (Total) | Any activity or plant (except as listed below) | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any plant used for heating metals | Group 1 | 250 $mg/m^3$ |
| | | Group 2, 3 or 4 | 200 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 50 $mg/m^3$ |
| | Any crushing, grinding, separating or materials handling activity | Group 1 | 400 $mg/m^3$ |
| | | Group 2, 3 or 4 | 250 $mg/m^3$ |
| | | Group 5 | 100 $mg/m^3$ |
| | | Group 6 | 20 $mg/m^3$ |

| General standards of concentration | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Nitrogen dioxide ($NO_2$) or Nitric oxide (NO) or both, as $NO_2$ equivalent | Any activity or plant (except boilers, gas turbines and stationary reciprocating internal combustion engines listed below) | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 2,000 $mg/m^3$ |
| | | Group 6 | 350 $mg/m^3$ |
| | Any boiler operating on gas | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 or 6 | 350 $mg/m^3$ |
| | Any boiler operating on a fuel other than gas, including a boiler used in connection with an electricity generator that forms part of an electricity generating system with a capacity of less than 30 MW | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 or 6 | 500 $mg/m^3$ |
| | Any turbine operating on gas, being a turbine used in connection with an electricity generating system with a capacity of less than 10 MW | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 90 $mg/m^3$ |
| | | Group 6 | 70 $mg/m^3$ |
| | Any turbine operating on gas, being a turbine used in connection with an electricity generating system with a capacity of 10 MW or greater but less than 30 MW | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 or 6 | 70 $mg/m^3$ |
| | Any turbine operating on a fuel other than gas, being a turbine used in connection with an electricity generating system with a capacity of less than 10 MW | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 or 6 | 90 $mg/m^3$ |
| | Any turbine operating on a fuel other than gas, being a turbine used in connection with an electricity generating system with a capacity of 10 MW or greater but less than 30 MW | Group 1, 2, 3 or 4 | 2,500 $mg/m^3$ |
| | | Group 5 | 150 $mg/m^3$ |
| | | Group 6 | 90 $mg/m^3$ |
| | Stationary reciprocating internal combustion engines | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 450 $mg/m^3$ |

| General standards of concentration | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Sulfur dioxide ($SO_2$) | Sulfuric acid manufacture using elemental sulfur | Group 1 | 5,600 $mg/m^3$ |
| | | Group 2, 3, 4 or 5 | 2,800 $mg/m^3$ |
| | | Group 6 | 1,000 $mg/m^3$ |
| | Sulfuric acid manufacture using other than elemental sulfur | Group 1, 2, 3, 4 or 5 | 7,200 $mg/m^3$ |
| | | Group 6 | 1,000 $mg/m^3$ |
| Sulfuric acid mist ($H_2SO_4$) or sulfur trioxide ($SO_3$) or both, as $SO_3$ equivalent | Any activity or plant | Group 1 | 200 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 100 $mg/m^3$ |
| Hydrogen sulfide ($H_2S$) (see also clause 31) | Any activity or plant | Group 1, 2, 3, 4, 5 or 6 | 5 $mg/m^3$ |
| Fluorine ($F_2$) and any compound containing fluorine, as total fluoride (HF) equivalent | Any activity or plant, other than the manufacture of aluminium from alumina | Group 1 | 100 $mg/m^3$ |
| | | Group 2, 3, 4, 5 or 6 | 50 $mg/m^3$ |
| Chlorine ($Cl_2$) | Any activity or plant | Group 1, 2, 3, 4, 5 or 6 | 200 $mg/m^3$ |
| Hydrogen chloride (HCl) | Any activity, other than the manufacture of glazed terracotta roofing tiles | Group 1, 2, 3 or 4 | 400 $mg/m^3$ |
| | | Group 5 or 6 | 100 $mg/m^3$ |
| | Manufacture of glazed terracotta roofing tiles | Group 1, 2, 3 or 4 | — |
| | | Group 5 or 6 | 100 $mg/m^3$ |
| Type 1 substances (in aggregate) | Any activity or plant | Group 1, 2 or 3 | 20 $mg/m^3$ |
| | | Group 4 | 10 $mg/m^3$ |
| | | Group 5 or 6 | — |
| Type 1 substances and Type 2 substances (in aggregate) | Any activity or plant | Group 1, 2, 3 or 4 | — |
| | | Group 5 | 5 $mg/m^3$ |
| | | Group 6 | 1 $mg/m^3$ |

| General standards of concentration | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Cadmium (Cd) or mercury (Hg) individually | Any activity or plant | Group 1, 2 or 3 | — |
| | | Group 4 | 3 $mg/m^3$ |
| | | Group 5 | 1 $mg/m^3$ |
| | | Group 6 | 0.2 $mg/m^3$ |
| Dioxins or furans | Any activity or plant using a non-standard fuel that contains precursors of dioxin or furan formation | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 0.1 ng/m |
| | Incinerator that processes waste | Group 1, 2, 3 or 4 | — |
| | | Group 5 or 6 | 0.1 $ng/m^3$ |
| Volatile organic compounds (VOCs), as n-propane | Any activity or plant involving combustion (except as listed below) | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| | Any stationary reciprocating internal combustion engine using a gaseous fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 40 $mg/m^3$ VOCs or 125 $mg/m^3$ CO |
| | Any stationary reciprocating internal combustion engine using a liquid fuel | Group 1, 2, 3, 4 or 5 | — |
| | | Group 6 | 1140 $mg/m^3$ VOCs or 5880 $mg/m^3$ CO |

| General standards of concentration | | | |
|---|---|---|---|
| **Air impurity** | **Activity or plant** | **Standard of concentration** | |
| Smoke | Any activity or plant in connection with which solid fuel is burnt | Group 1, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 1, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group 2, 3, 4, 5 or 6, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group 2, 3, 4, 5 or 6, in other circumstances | Ringelmann 1 or 20% opacity |
| | An activity or plant in connection with which liquid or gaseous fuel is burnt | Group 1, 2, 3, 4, 5 or 6 | Ringelmann 1 or 20% opacity |

# Schedule 5 Test methods, averaging periods and reference conditions for scheduled premises

(Clause 28)

## Part 1 Test methods

| Test methods and monitoring methods | | |
|---|---|---|
| **Air impurity** | **Test method** | **Monitoring method** |
| Solid particles (Total) | TM-15 | Not applicable |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent | TM-11 | CEM-2 |
| Sulfur dioxide ($SO_2$) | TM-4 | CEM-2 |
| Hydrogen sulfide ($H_2S$) | TM-5 | CEM-7 |
| Total reduced sulfides (TRS) | TM-33 | CEM-5 |
| Sulfuric acid mist ($H_2SO_4$) or sulfur trioxide ($SO_3$) or both, as $SO_3$ equivalent | TM-3 | Not applicable |
| Chlorine ($Cl_2$) | TM-7 | Not applicable |
| Hydrogen chloride (HCl) | TM-8 | Not applicable |

| **Test methods and monitoring methods** | | |
|---|---|---|
| **Air impurity** | **Test method** | **Monitoring method** |
| Fluorine ($F_2$) or any compound containing fluorine, as total fluoride (HF) equivalent, except where emitted by a primary aluminium smelter while manufacturing aluminium from alumina | TM-9 | Not applicable |
| Hydrogen fluoride (HF) emitted by a primary aluminium smelter while manufacturing aluminium from alumina | TM-10 | Not applicable |
| Type 1 substances and Type 2 substances | TM-12, TM-13 and TM-14 | Not applicable |
| Cadmium (Cd) or mercury | TM-12, TM-13 and TM-14 | Not applicable |
| Dioxins or furans | TM-18 | Not applicable |
| Carbon monoxide (CO) | TM-32 | CEM-4 |
| Volatile organic compounds, as n-propane equivalent | TM-34 | CEM-8, CEM-9, CEM-10 |
| Methanol | TM-35 | CEM-8, CEM-9, CEM-10 |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | Not applicable | CEM-1 |
| Smoke (if determining whether a specified Ringelmann standard has been exceeded) | TM-16 | Not applicable |
| Smoke (if determining whether standard for emission of smoke from flares has been exceeded) | TM-37 | Not applicable |

## Part 2 Averaging periods

| Averaging periods | |
|---|---|
| **Air impurity** | **Averaging period** |
| Sulfuric acid mist ($H_2SO_4$) or sulfur trioxide ($SO_3$) or both, as $SO_3$ equivalent<br>Fluorine ($F_2$), or any compound containing fluorine, as total fluoride (HF) equivalent (except where emitted by a primary aluminium smelter while manufacturing aluminium from alumina)<br>Hydrogen Chloride (HCl)<br>Cadmium (Cd)<br>Dioxins or furans<br>Mercury (Hg)<br>Type 1 or Type 2 substances<br>Solid particles (total) | 1 hour, or the minimum sampling period specified in the relevant test method referred to in Part 1, whichever is the greater |
| Nitrogen dioxide ($NO_2$) or nitric oxide (NO) or both, as $NO_2$ equivalent<br>Sulfur dioxide ($SO_2$)<br>Hydrogen sulfide ($H_2S$)<br>Total reduced sulfides (TRS)<br>Chlorine ($Cl_2$) | 1 hour block |
| Volatile organic compounds (VOCs), as n-propane equivalent<br>Carbon monoxide (CO) | 1 hour rolling |
| Hydrogen fluoride (HF) emitted by a primary aluminium smelter while manufacturing aluminium from alumina<br>Methanol | 24 hours |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | 6 minutes rolling |

## Part 3 Reference conditions

| Reference conditions relating to Group 1, 2, 3 or 4 | | |
|---|---|---|
| **Air impurity** | **Activity or plant** | **Reference conditions** |
| All air impurities (except as listed below) | Any activity or plant | Dry, 273 K, 101.3 kPa |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | Any activity or plant | Gas stream temperature above dew point. Path length corrected to stack exit diameter as per CEM-1 |
| Solid particles (total) | Boilers or incinerators | Dry, 273 K, 101.3 kPa, 12% $CO_2$ |

| Reference conditions relating to Group 5 or 6 | | |
|---|---|---|
| **Air impurity** | **Activity or plant** | **Reference conditions** |
| All air impurities (except as listed below) | Any activity or plant (except as listed below) | Dry, 273 K, 101.3 kPa |
| | Any fuel burning equipment using solid fuel | Dry, 273 K, 101.3 kPa, 7% $O_2$ |
| | Any fuel burning equipment using gas or liquid fuel | Dry, 273 K, 101.3 kPa, 3% $O_2$ |
| | Gas turbines | Dry, 273 K, 101.3 kPa, 15% $O_2$ |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | Any activity or plant | Gas stream temperature above dew point. Path length corrected to stack exit diameter as per CEM-1 |
| Dioxins or furans | Incinerators that process waste | Dry, 273 K, 101.3kPa, 11% $O_2$ |

# Schedule 6 Standards of concentration for non-scheduled premises

(Clause 33)

| Air impurity | Activity or plant | Group | Concentration |
|---|---|---|---|
| Solid particles | Any activity or plant (except as listed below) | Group A | 400 $mg/m^3$ |
| | | Group B | 250 $mg/m^3$ |
| | | Group C | 100 $mg/m^3$ |
| | Any activity or plant in which, or in connection with which, solid fuel is burnt | Group A | Ringelmann 2 or 40% opacity |
| | | Group B | Ringelmann 1 or 20% opacity |
| | | Group C | Ringelmann 1 or 20% opacity |
| | Any activity or plant in which, or in connection with which, liquid or gaseous fuel is burnt | Group A | Ringelmann 1 or 20% opacity |
| | | Group B | Ringelmann 1 or 20% opacity |
| | | Group C | Ringelmann 1 or 20% opacity |
| Smoke | Any activity or plant in connection with which solid fuel is burnt | Group A, in relation to marine vessels or premises, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group A, in relation to marine vessels or premises, in other circumstances | Ringelmann 2 or 40% opacity |
| | | Group B or C, in relation to marine vessels or premises, in approved circumstances | Ringelmann 3 or 60% opacity, or |
| | | Group B or C, in relation to marine vessels or premises, in other circumstances | Ringelmann 1 or 20% opacity |
| | Any activity or plant in connection with which liquid or gaseous fuel is burnt | Group A, B or C in relation to marine vessels or premises, in approved circumstances | Ringelmann 3 or 60% opacity |
| | | Group A, B or C, in relation to marine vessels or premises, in other circumstances | Ringelmann 1 or 20% opacity |

# Schedule 7 Test methods, averaging periods and reference conditions for non-scheduled premises

(Clause 34)

## Part 1 Test methods

| Test methods and monitoring methods | | |
|---|---|---|
| **Air impurity** | **Test method** | **Monitoring method** |
| Solid particles (Total) | TM-15 | Not applicable |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | Not applicable | CEM-1 |
| Smoke (if determining whether a specified Ringelmann standard has been exceeded) | TM-16 | Not applicable |

## Part 2 Averaging periods

| Averaging periods | |
|---|---|
| **Air impurity** | **Averaging period** |
| Solid particles (total) | 1 hour, or the minimum sampling period specified in the relevant test method referred to in Part 1, whichever is the greater |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | 6 minutes rolling |

## Part 3 Reference conditions

| Reference conditions relating to Group A | | |
|---|---|---|
| **Air impurity** | **Activity or plant** | **Reference conditions** |
| Solid particles (total) | Any activity or plant (except as listed below) | Dry, 273 K, 101.3 kPa |
| | Boilers or incinerators | Dry, 273 K, 101.3 kPa, 12% $CO_2$ |

| Reference conditions relating to Group A | | |
|---|---|---|
| **Air impurity** | **Activity or plant** | **Reference conditions** |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | Any activity or plant | Gas stream temperature above dew point. Path length corrected to stack exit diameter as per CEM-1 |

| Reference conditions relating to Group B or C | | |
|---|---|---|
| **Air impurity** | **Activity or plant** | **Reference conditions** |
| Solid particles (total) | Any activity or plant (except as listed below) | Dry, 273 K, 101.3 kPa |
| | Fuel burning equipment using solid fuel | Dry, 273 K, 101.3 kPa, 7% $CO_2$ |
| | Fuel burning equipment using liquid or gaseous fuel | Dry, 273 K, 101.3 kPa, 3% $CO_2$ |
| Smoke (if determining whether a specified standard of concentration of opacity has been exceeded) | Any activity or plant | Gas stream temperature above dew point. Path length corrected to stack exit diameter as per CEM-1 |