

STATUTORY INSTRUMENTS

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AIR QUALITY STANDARDS REGULATIONS 2002

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The Minister for the Environment and Local Government in exercise of the powers conferred on him by sections 10, 20, 21, 46, 47, 49, 50 and 52 of the Air Pollution Act 1987 (No. 6 of 1987) and by sections 6, 53, 54 and 56 of the Environmental Protection Agency Act 1992 (No. 7 of 1992) and for the purpose of giving effect to Council Directives 96/62/EC on ambient air quality assessment and management ⁽¹⁾, 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air ⁽²⁾, and 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air ⁽³⁾ hereby makes the following Regulations: -

³ O.J. No. L 313/12 of 13 December 2000

² O.J. No. L 163/41 of 29 June 1999

¹ O.J. No. L 296/55 of 21 November 1996

Citation

1 These Regulations may be cited as the Air Quality Standards Regulations 2002.

Entry into Force

2 These Regulations shall come into operation on 17 June 2002.

Definitions

3 (1) In these Regulations: -

"the Agency" means the Environmental Protection Agency established under section 19 of the Environmental Protection Agency Act 1992 (No. 7 of 1992);

"air quality standard" means a concentration in ambient air of a pollutant, in the quantity specified in a Schedule to these Regulations, which is not to be exceeded for the period and under the conditions specified in the Schedule in relation to that pollutant;

"the Commission" means the Commission of the European Communities;

"the Framework Directive" means Council Directive 96/62/EC on ambient air quality assessment and management;

"indicative action levels" means the limit values, increased by any relevant margin of tolerance, for the pollutants coming within the scope of these Regulations;

"the Minister" means the Minister for the Environment and Local Government;

"the 1987 Act" means the Air Pollution Act 1987 (No. 6 of 1987);

"the 1999 Directive" means Council Directive 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air;

"the 1999 Regulations" means the Environment Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (S.I. No. 33 of 1999);

"the 2000 Directive" means Council Directive 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air.

(2) In these Regulations: -

(a) any reference to an article or sub-article which is not otherwise identified is a reference to an article or sub-article of these Regulations;

(b) a reference to a schedule which is not otherwise identified is a reference to a schedule of these Regulations; and

(c) a letter, word, phrase or symbol which has been assigned a meaning by the Framework Directive, the 1999 Directive or the 2000 Directive has that meaning except where otherwise indicated.

Scope

4 (1) These Regulations: -

(a) establish limit values and, as appropriate, alert thresholds for concentrations of certain pollutants in ambient air intended to avoid, prevent or reduce harmful effects on human health and the environment as a whole;

(b) provide for the assessment of concentrations of certain pollutants in ambient air on the basis of methods and criteria common to the Member States of the European Communities;

(c) provide for the obtaining of adequate information on concentrations of certain pollutants in ambient air and ensure that it is made available to the public, *inter alia* by means of alert thresholds; and

(d) provide for the maintenance of ambient air quality where it is good and the improvement of ambient air quality in other cases with respect to certain pollutants.

(2) The pollutants for the purposes of these Regulations are benzene, carbon monoxide, lead, nitrogen dioxide and oxides of nitrogen, particulate matter and sulphur dioxide.

Air Quality Standards

Sulphur Dioxide

5 (1) Hourly and daily concentrations of sulphur dioxide in ambient air for the protection of human health shall be assessed in relation to the indicative action levels specified in Schedule 1, and for daily concentrations, in relation to the upper and lower assessment thresholds specified in that Schedule.

(2) From 1 January 2005 the air quality standards for sulphur dioxide in ambient air for the protection of human health shall be those specified in Schedule 1.

(3) The air quality standard for sulphur dioxide in ambient air for the protection of ecosystems shall be that specified in Schedule 1 and concentrations of such sulphur dioxide shall be assessed in relation to the upper and lower assessment thresholds for the winter limit values specified in that Schedule.

(4) The alert threshold for concentrations of sulphur dioxide in ambient air shall be that specified in Schedule 1.

Nitrogen Dioxide and Oxides of Nitrogen

6 (1) Hourly and annual concentrations of nitrogen dioxide in ambient air for the protection of human health shall be assessed in relation to the indicative action levels specified in Schedule 2 and in relation to the upper and lower assessment thresholds specified in that Schedule.

(2) From 1 January 2010 the air quality standards for nitrogen dioxide in ambient air for the protection of human health shall be those specified in Schedule 2.

(3) The air quality standard for oxides of nitrogen in ambient air for the protection of vegetation shall be that specified in Schedule 2 and concentrations of such oxides of nitrogen shall be assessed in relation to the upper and lower assessment thresholds specified in that Schedule.

(4) The alert threshold for concentrations of nitrogen dioxide in ambient air shall be that specified in Schedule 2.

Particulate Matter (PM₁₀)

7 (1) The daily and annual concentrations of PM₁₀ in ambient air for the protection of human health shall be assessed in relation to the indicative action levels specified in Schedule 3:-

- (a) until the 31 December 2004, for Stage 1 air quality standards; and
- (b) from 1 January 2005, for Stage 2 air quality standards.

(2) The daily and annual concentrations of PM₁₀ in ambient air for the protection of human health shall also be assessed in relation to the upper and lower assessment thresholds specified in Schedule 3.

(3) From 1 January 2005 the air quality standards for PM₁₀ in ambient air for the protection of human health shall be those specified at Stage 1 in Schedule 3.

(4) From 1 January 2010 the air quality standards for PM₁₀ in ambient air for the protection of human health shall be those specified at Stage 2 in Schedule 3.

Lead

8 (1) The concentrations of lead in ambient air for the protection of human health shall be assessed in relation to the indicative action levels specified in Schedule 4 and in relation to the upper and lower assessment thresholds specified in that Schedule.

(2) From 1 January 2005 the air quality standard for lead in ambient air for the protection of human health shall be that specified in Schedule 4.

Benzene

9 (1) The concentrations of benzene in ambient air for the protection of human health shall be assessed in relation to the indicative action levels specified in Schedule 5 and in relation to the upper and lower assessment thresholds specified in that Schedule.

(2) From 1 January 2010 the air quality standard for benzene in ambient air for the protection of human health shall be that specified in Schedule 5.

Carbon Monoxide

10 (1) The maximum daily 8-hour mean concentrations of carbon monoxide in ambient air for the protection of human health shall be assessed in relation to the indicative action levels specified in Schedule 6 and in relation to the upper and lower assessment thresholds specified in that Schedule.

(2) From 1 January 2005 the air quality standard for carbon monoxide in ambient air for the protection of human health shall be that specified in Schedule 6.

Reference Methods

11 (1) The reference methods for the analysis of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, for the sampling and analysis of lead, benzene and carbon monoxide, and for the sampling and measurement of PM₁₀ shall be those specified in Schedule 7.

(2) The Agency may prescribe alternative reference methods for the sampling, analysis and measurement of pollutants within the scope of these Regulations which it can demonstrate give results equivalent to the reference methods or, in the case of PM₁₀, display a consistent relationship with the reference method.

(3) The Agency may prescribe a reference method or methods for the sampling and measurement of PM_{2.5}, which shall have regard to any guidelines, produced by the Commission, for an appropriate provisional reference method.

Air Quality Measurement

12 (1) The Agency shall measure, or cause to be measured, levels of pollutants in ambient air in:-

(a) agglomerations;
(b) zones where levels of pollutants exceed the relevant limit value; and
(c) zones in which levels of pollutants are between the relevant limit value and the lower assessment threshold.

(2) The Agency shall determine the location of sampling points for the measurement of pollutants in ambient air in accordance with the criteria specified in Schedule 8.

(3) Where pollutants have to be measured: -

(a) the measurements shall be taken at fixed sites either continuously or by random sampling;
(b) the number of measurements shall be sufficiently large to enable the levels observed to be determined;
(c) the minimum number of sampling points for fixed measurement of concentrations of each pollutant shall comply with the requirements of Schedule 9; and
(d) sampling points shall be installed in each zone or agglomeration specified in Schedule 10 within which measurement is required if fixed measurement is the sole source of data on concentrations within it.

(4) The Agency may supplement information from fixed measurement stations by information from other sources, including but not limited to mobile monitoring units, emission inventories, indicative measurement methods and air quality modelling, and where such supplementary information is available for zones and agglomerations, the number of fixed measuring stations and the spatial resolution of other techniques shall be sufficient for the concentrations of air pollutants to be established in accordance with the macroscale siting requirements specified in Schedule 8 and the requirements of Schedule 11.

(5) For zones and agglomerations below the lower assessment threshold and within which measurement is not required, modelling or objective-estimation techniques may be used by the Agency.

(6) Where a local authority is monitoring, or proposes to monitor, any pollutant within the scope of these Regulations, it shall consult with the Agency as regards the arrangements to satisfy the monitoring requirements under these Regulations.

(7) The Agency shall record, or cause to be recorded, where practicable and until 31 December 2003 at least, concentrations of sulphur dioxide averaged over ten minutes from certain measuring stations selected by the Agency as representative of air quality in inhabited areas close to sources of sulphur dioxide and at which hourly concentrations of sulphur dioxide in ambient air are measured.

(8) The Agency shall measure, or cause to be measured, ambient concentrations of PM_{2.5} at such measuring stations as it considers necessary to be representative of concentrations of PM_{2.5} in the State and, where possible, such measuring stations shall be co-located with sampling points for PM₁₀.

Air Quality Assessment

13 (1) The Agency shall from time to time, and at least every 5 years, assess ambient air quality in the State by reference to the concentrations of the pollutants within the scope of these Regulations.

(2) The Agency shall review the classification for each pollutant of each zone in Schedule 10 from time to time and at least every 5 years, or earlier in the event of significant changes in activities relevant to ambient concentrations of each pollutant, by reference to the upper and lower assessment thresholds.

(3) In carrying out this review:-

(a) direct measurement of levels of pollutants may be supplemented by modelling techniques to provide an adequate level of information on ambient air quality;

(b) a combination of measurements of levels of pollutants and modelling techniques may be used to assess ambient air quality where the levels over a representative period are between the relevant limit value and lower assessment threshold; and

(c) where the levels of pollutants are below the lower assessment threshold, modelling or objective assessment techniques may be used solely to assess ambient air quality, except in agglomerations in the case of sulphur dioxide and nitrogen dioxide.

(4) In the determination of exceedances of the upper and lower assessment thresholds:-

(a) where sufficient data are available, exceedances shall be determined on the basis of concentrations during the previous five years, and an assessment threshold will be deemed to have been exceeded if it has been exceeded during at least three separate years out of those previous five years; or

(b) where fewer than five years' data are available, measurement campaigns of short duration during the period of the year and at locations likely to be typical of the highest pollution levels may be combined with results obtained from emission inventories and modelling.

(5) In the light of the review, the Agency shall draw up a list of zones and agglomerations in which the levels of one or more pollutants are:-

- (a) higher than the indicative action level;
- (b) between the limit value and the indicative action level; and
- (c) below the limit values.

(6) The Agency shall forward to the Minister and the Commission annually, and no later than nine months after the end of each year, the list of zones and agglomerations referred to in the preceding sub-article.

(7) The Agency shall make public and shall provide, to the bodies prescribed in Schedule 14, and to any environmental organisation, consumer organisation, organisation representing the interests of sensitive populations considered relevant by the Agency or which so requests, the results of any preliminary or other air quality assessments undertaken by the Agency in connection with these Regulations.

Public Information and Action when Alert Thresholds Exceeded

14 (1) The Agency shall routinely make available clear, comprehensible and accessible up-to-date information on ambient concentrations of all pollutants within the scope of these Regulations.

(2) The information shall be updated and made available:-

(a) for sulphur dioxide, nitrogen dioxide and oxides of nitrogen and particulate matter, on at least a daily basis, and in the case of hourly values for sulphur dioxide and nitrogen dioxide, wherever practicable on an hourly basis;

(b) for carbon monoxide, as a maximum running average over eight hours at least on a daily basis, and where practicable on an hourly basis;

(c) for lead, on a three monthly basis; and

(d) for benzene, as an average value over the preceding 12 months, on at least a three-monthly basis.

(3) The information shall indicate at least:-

(a) any exceedance of the concentrations in the limit values and alert thresholds, if relevant, over the appropriate averaging period specified in Schedules 1, 2, 3, 4, 5 and 6;

(b) a short assessment in relation to the limit values and alert thresholds;

(c) appropriate information regarding effects on health; and

(d) forecasting of ambient air quality where practicable.

(4) The Agency shall establish the means to ensure that the information provided for in the foregoing sub-articles of this article is made available to the public as well as to the bodies prescribed in Schedule 14, and to any environmental organisation, consumer organisation, organisation representing the interests of sensitive populations considered relevant by the Agency or which so requests, by the appropriate use of advisory notices to the broadcast media and the press, Agency publications, an internet website, teletext, and where so requested by any relevant body or organisation, by e-mail.

(5) Where an alert threshold for sulphur dioxide or nitrogen dioxide specified in Schedules 1 or 2, as appropriate, is exceeded the Agency shall as a minimum:-

(a) make available, by means of radio, television, teletext, the press and the internet as appropriate, and by e-mail to any relevant body or organisation for the purposes of the preceding sub-article of this article which so requests, clear, comprehensible and accessible up-to-date information including at least:-

(i) the date, hour and place of the occurrence and the reasons for the occurrence, where known;

(ii) any forecasts of changes in concentrations (including improvement, stabilisation or deterioration), together with the reasons for those changes, the geographical area concerned, and the duration of the occurrence;

(iii) the type of population potentially sensitive to the occurrence; and

(iv) the precautions to be taken by the sensitive population concerned;

and

(b) forward to the Commission on a provisional basis information concerning the levels of pollutants recorded and the duration of the episode, or episodes, of pollution no later than 3 months following their occurrence.

Measures Where Standards Are, or Are Likely to be, Exceeded

Short Term Air Pollution Action Plan

15 (1) The Agency shall identify and notify to the relevant local authority or authorities those areas, consisting of zones and agglomerations in whole or in part, where the Agency considers measures are likely to be necessary in the short term where is a risk of the limit value or values for any pollutant, or an alert threshold where specified, being exceeded.

(2) When notified by the Agency in pursuance of the preceding sub-article, or where a local authority or local authorities consider such measures are likely to be necessary, the local authority, or local authorities as appropriate, shall prepare an air pollution action plan indicating the measures to be taken in the short term to reduce the risk of the relevant indicative action level or alert threshold being exceeded and to limit the duration of such occurrence, and providing, as appropriate, for measures including but not limited to, suspension of activities, including motor vehicle traffic, which contribute or may contribute to the limit value or values being exceeded.

Air Quality Management Plans

16 (1) The Agency shall, within 9 months after the end of a year in which the indicative level for any pollutant coming within the scope of these Regulations has been exceeded:-

(a) identify and notify to the relevant local authority or authorities those areas, consisting of zones and agglomerations in whole or in part, where the Agency considers measures are likely to be necessary to ensure compliance with the limit value or values for the relevant pollutant within the time limit specified in the relevant Schedule for that pollutant; and

(b) provide to the local authority or authorities concerned all data relevant to the air quality assessment for the area concerned, including where relevant that specified in Schedule 12.

(2) The local authority or authorities notified in accordance with the preceding sub-article shall prepare a clear, comprehensible and accessible air quality management plan, or review and revise an existing plan, to ensure compliance with the limit value or values within the time limit specified for the relevant pollutant or pollutants.

(3) An air quality management plan shall:-

(a) be prepared and notified to the Agency by the local authority or local authorities as appropriate no later than 15 months after the information specified in sub-article (1) is made available, and the Agency shall forthwith notify the Commission of the plan;

(b) contain as a minimum the information listed in Schedule 13;

(c) take into account an integrated approach to the protection of air, water, and soil;

(d) be integrated, covering all pollutants within the scope of these Regulations, where measures are, or are likely to be, necessary to ensure compliance with limit values in respect of more than one pollutant;

(e) be consistent with the requirements of legislation of the European Communities on the protection of safety and health of workers at work;

(f) have no significant negative effects on the environment in any other Member State of the European Communities; and

(g) aim at reducing concentrations of PM_{2.5} where measures are necessary to ensure compliance with the indicative action level specified in Schedule 3 for PM₁₀.

(4) Before making the air quality management plan, the local authority, or local authorities as appropriate, shall consult with the Agency and any statutory body or agency the discharge of whose functions will or may be affected by the measures proposed in the plan.

(5) The local authority, or local authorities as appropriate, shall implement the air quality management plan insofar as it lies within the functional responsibility of local authorities, and insofar as it lies within the functional responsibility of other statutory bodies or agencies, promote the implementation of the plan.

(6) The local authority, or local authorities as appropriate, shall inform the Agency every 3 years of the progress in implementation of the air quality management plan, and the Agency shall inform the Commission accordingly.

(7) Copies of draft air quality management plans and air quality management plans shall be provided to:-

- (a) the Agency;
- (b) any statutory body or agency, the discharge of whose functions will be or may be affected by the measures proposed; and
- (c) the bodies prescribed in Schedule 14, and to any environmental organisation, consumer organisation, organisation representing the interests of sensitive populations considered relevant by the Agency or which so requests in accordance with the provisions of article 14 (4), within or adjoining the functional area or areas of the local authority or local authorities concerned.

Measures to Maintain Good Air Quality

17 (1) The Agency shall identify the means by which levels of pollutants, in those zones or agglomerations below the limit values specified in Schedules 1, 2, 3, 4, 5 and 6, may best be at least maintained and the means by which the best ambient air quality compatible with sustainable development may be preserved, and shall advise the relevant local authority or local authorities and any statutory agency or body with relevant functional responsibility accordingly.

(2) The Agency and the local authority, or local authorities as appropriate, shall promote the preservation of best ambient air quality compatible with sustainable development.

Additional Reporting

18 (1) The Agency shall notify to the Minister and the Commission:-

- (a) any laboratories approved pursuant to article 4 (3) of the 1999 Regulations;
- (b) the method or methods used to sample and measure PM₁₀ and PM_{2.5};
- (c) within 9 months of the end of each year:-
 - (i) occurrences, if any, of levels of pollutants exceeding the relevant indicative action level;
 - (ii) the dates or periods when such levels were observed, together with the values recorded;
 - (iii) the reasons for such levels;
 - (iv) where the Agency has collected data in accordance with article 12 (7):-
 - (1) the number of ten-minute concentrations of sulphur dioxide which have exceeded 500 µg/m³;
 - (2) the number of days in the calendar year on which the exceedances occurred;

(3) the number of days on which the hourly concentrations of sulphur dioxide simultaneously exceeded $350 \mu\text{g}/\text{m}^3$; and
(4) the maximum ten-minute concentration recorded; and
(v) in relation to measurements of $\text{PM}_{2.5}$ calculated from measurements over any 24 hour period within that year:-
(1) the arithmetic mean, the median and maximum concentrations; and
(2) the 98th percentile calculated in accordance with the procedures specified in Annex I to Council Decision 97/101/EC of 27 January 1997 establishing a reciprocal exchange of information and data from networks and individual stations measuring ambient air pollution within the Member States (⁴).

⁴ O.J. No. L 35 of 5 February 1997

Revocation

19 The Air Pollution Act 1987 (Air Quality Standards) Regulations 1987 (S.I. No. 244 of 1987) are hereby revoked with effect from the 31st day of December 2009.

SCHEDULE 1 SULPHUR DIOXIDE

LIMIT VALUES FOR SULPHUR DIOXIDE

Averaging Period

Limit Value

Margin of Tolerance

Hourly Limit Value for the Protection of human health

1 hour

$350 \mu\text{g}/\text{m}^3$ not to be exceeded more than 24 times a calendar year

$90 \mu\text{g}/\text{m}^3$ from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by $30 \mu\text{g}/\text{m}^3$ to reach $0 \mu\text{g}/\text{m}^3$ by 1 January 2005

Daily Limit Value for the protection of human health

24 hours

125 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 3 times a calendar year

None

Limit value for the protection of ecosystems

Calendar year and winter (1 October to 31 March)

20 $\mu\text{g}/\text{m}^3$

None

**UPPER AND LOWER ASSESSMENT THRESHOLDS FOR
SULPHUR DIOXIDE**

Health Protection

Ecosystem protection

Upper assessment threshold

60% of 24-hour limit value (75 $\mu\text{g}/\text{m}^3$), not to be exceeded more than 3 times in any calendar year

60% of winter limit value (12 $\mu\text{g}/\text{m}^3$)

Lower assessment threshold

40% of 24-hour limit value (50 $\mu\text{g}/\text{m}^3$), not to be exceeded more than 3 times in any calendar year

40% of winter limit value (8 $\mu\text{g}/\text{m}^3$)

ALERT THRESHOLD FOR SULPHUR DIOXIDE

500 $\mu\text{g}/\text{m}^3$ measured over 3 consecutive hours at locations representative of air quality over at least 100 km^2 or an entire zone or agglomeration, whichever is the smaller.

MEASUREMENT

Measurements must be expressed in $\mu\text{g}/\text{m}^3$. The volume must be standardised at a temperature of 293°K and a pressure of 101.3kPa.

SCHEDULE 2 NITROGEN DIOXIDE AND OXIDES OF NITROGEN

LIMIT VALUES FOR NITROGEN DIOXIDE (NO_2) AND OXIDES OF NITROGEN (NO_x)

Averaging Period

Limit Value

Margin of Tolerance

Hourly limit value for the protection of human health

1 hour

200 $\mu\text{g}/\text{m}^3$ NO_2 , not to be exceeded more than 18 times a calendar year

40% from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2010

Annual limit value for the protection of human health

Calendar year

40 $\mu\text{g}/\text{m}^3$ NO_2

40% from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2010

Annual limit value for the protection of vegetation

Calendar year

30 $\mu\text{g}/\text{m}^3$ NO_x

None

UPPER AND LOWER ASSESSMENT THRESHOLDS FOR NITROGEN DIOXIDE AND OXIDES OF NITROGEN

Hourly limit value for the protection of human health (NO_2)

Annual Limit Value for the protection of human health (NO_2)

Annual Limit Value for the protection of vegetation (NO_2)

Upper assessment Threshold

70% of limit value (140 $\mu\text{g}/\text{m}^3$), not to be exceeded more than 18 times in any calendar year

80% of limit value (32 $\mu\text{g}/\text{m}^3$)

80% of limit value (24 $\mu\text{g}/\text{m}^3$)

Lower assessment Threshold

50% of limit value (100 $\mu\text{g}/\text{m}^3$), not to be exceeded more than 18 times in any calendar year

65% of limit value (26 $\mu\text{g}/\text{m}^3$)

65% of limit value (19.5 $\mu\text{g}/\text{m}^3$)

ALERT THRESHOLD FOR NO_2

400 $\mu\text{g}/\text{m}^3$ NO_2 measured over 3 consecutive hours at locations representative of air quality over at least 100 km^2 or an entire zone or agglomeration, whichever is the smaller.

MEASUREMENT

Measurements must be expressed in $\mu\text{g}/\text{m}^3$. The volume must be standardised at a temperature of 293°K and a pressure of 101.3kPa.

SCHEDULE 3 PARTICULATE MATTER

LIMIT VALUES FOR PARTICULATE MATTER (PM₁₀)

STAGE 1 (2005)

Averaging Period

Limit Value

Margin of Tolerance

24 hour limit value for the protection of human health

24 hours

50 $\mu\text{g}/\text{m}^3$ PM₁₀ not to be exceeded more than 35 times a calendar year

30% from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2005

Annual limit value for the protection of human health

Calendar year

40 $\mu\text{g}/\text{m}^3$ PM₁₀

12% from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2005

STAGE 2 (2010)

Averaging Period

Limit Value

Margin of Tolerance

24 hour limit value for the protection of human health

24 hours

50 $\mu\text{g}/\text{m}^3$ PM₁₀ not to be exceeded more than 7 times a calendar year

Not to be exceeded more than 28 times by 1 January 2006, 21 times by 1 January 2007, 14 times by 1 January 2008, 7 times by 1 January 2009 and zero times by 1 January 2010

Annual limit value for the protection of human health

Calendar year

20 $\mu\text{g}/\text{m}^3$ PM₁₀

50% from 1 January 2005, reducing every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2010

UPPER AND LOWER ASSESSMENT THRESHOLDS FOR PARTICULATE MATTER

24-hour average

Annual Average

Upper assessment Threshold

60% of limit value ($30 \mu\text{g}/\text{m}^3$), not to be exceeded more than seven times in any calendar year

70% of limit value ($14 \mu\text{g}/\text{m}^3$)

Lower assessment threshold

40% of limit value ($20 \mu\text{g}/\text{m}^3$), not to be exceeded more than seven times in any calendar year

50% of limit value ($10 \mu\text{g}/\text{m}^3$)

SCHEDULE 4 LEAD

LIMIT VALUE FOR LEAD

Averaging Period

Limit Value

Margin of Tolerance

Annual limit value for the protection of human health

Calendar year

$0.5 \mu\text{g}/\text{m}^3$

60% from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2005

LEAD **UPPER AND LOWER ASSESSMENT THRESHOLDS FOR**

Annual Average

Upper assessment threshold

70% of limit value (0.35 $\mu\text{g}/\text{m}^3$)

Lower assessment threshold

50% of limit value (0.25 $\mu\text{g}/\text{m}^3$)

SCHEDULE 5 BENZENE

LIMIT VALUE FOR BENZENE

Averaging Period

Limit Value

Margin of Tolerance

Limit value for the protection of human health

Calendar year

5 $\mu\text{g}/\text{m}^3$

5 $\mu\text{g}/\text{m}^3$ from the date of entry into force of these Regulations, reducing on 1 January 2006 and every 12 months thereafter by 1 $\mu\text{g}/\text{m}^3$ to reach 0 $\mu\text{g}/\text{m}^3$ by 1 January 2010

**UPPER AND LOWER ASSESSMENT THRESHOLDS FOR
BENZENE**

Annual Average

Upper assessment threshold

70% of limit value (3.5 $\mu\text{g}/\text{m}^3$)

Lower assessment threshold

40% of limit value (2 $\mu\text{g}/\text{m}^3$)

MEASUREMENT

Measurements must be expressed in $\mu\text{g}/\text{m}^3$, standardised at a temperature of 293° K and a pressure of 101.3 kPa.

SCHEDULE 6 CARBON MONOXIDE**LIMIT VALUE FOR CARBON MONOXIDE****Averaging Period****Limit Value****Margin of Tolerance****Limit value for the protection of human health**

Maximum daily 8-hour mean

10 mg/m^3

6 mg/m^3 from the date of entry into force of these Regulations, reducing on 1 January 2003 and every 12 months thereafter by 2 mg/m^3 to reach 0 mg/m^3 by 1 January 2005

**UPPER AND LOWER ASSESSMENT THRESHOLDS FOR
CARBON MONOXIDE****Annual Average**

Upper assessment threshold

70% of limit value (7 mg/m³)

Lower assessment threshold

50% of limit value (5 mg/m³)

MEASUREMENT AND ANALYSIS

The maximum daily 8-hour mean concentration will be selected by examining 8-hour running averages, calculated from hourly data and updated each hour. Each 8-hour average so calculated will be assigned to the day on which it ends i.e. the first calculation period for any one day will be the period from 17.00 on the previous date to 01.00 on that day; the last calculation period for any one day will be the period from 16.00 to 24.00 on that day.

Measurements must be expressed in mg/m³. The volume must be standardised at a temperature of 293° K and a pressure of 101.3 kPa.

SCHEDULE 7 REFERENCE METHODS FOR ASSESSMENT OF CONCENTRATIONS OF POLLUTANTS

The reference methods for assessment of concentrations of pollutants within the scope of these Regulations shall be: -

Reference method for the analysis of sulphur dioxide

ISO/FDIS 10498 (Standard in draft) Ambient air — determination of sulphur dioxide — ultraviolet fluorescence method.

Reference method for the analysis of nitrogen dioxide and oxides of nitrogen

ISO 7996: 1985 Ambient air — determination of the mass concentrations of nitrogen oxides — chemiluminescence method.

Reference method for the sampling of lead

Until 1 January 2005, the reference method for the sampling of lead shall be that described in the Annex to Council Directive 82/884/EEC on a limit value for lead in the air ⁽⁵⁾ and thereafter shall be that for PM₁₀ as laid down in this Schedule.

⁵ O.J. No. 378/15 of 31 December 1982

Reference method for the analysis of lead

ISO 9855: 1993 Ambient air — Determination of the particulate lead content of aerosols collected in filters. Atomic absorption spectroscopy method.

Reference method for the sampling and measurement of PM₁₀

The reference method for the sampling and measurement of PM₁₀ will be that described in EN 12341 'Air Quality — Field Test Procedure to Demonstrate Reference Equivalence of Sampling Methods for the PM₁₀ fraction of particulate matter'. The measurement principle is based on the collection on a filter of the PM₁₀ fraction of ambient particulate matter and the gravimetric mass determination.

In the event that the Agency prescribes an alternative method for the sampling and measurement of PM₁₀, the results achieved by that method shall be corrected by a relevant factor to produce results equivalent to those that would have been achieved by using the reference method.

Reference method for the sampling and analysis of benzene

The reference method for the measurement of benzene will be the pumped sampling method on a sorbent cartridge followed by gas chromatographic determination that is currently being standardised by CEN, and in the absence of a CEN standardised method, any national standard methods based on the same measurement method.

Reference method for the analysis of carbon monoxide

The reference method for the measurement of carbon monoxide will be the non-dispersive infra-red spectrometric (NDIR) method that is currently being standardised by CEN, and in the absence of a CEN standardised method, any national standard methods based on the same measurement method.

SCHEDULE 8 LOCATION OF SAMPLING POINTS FOR THE MEASUREMENT OF POLLUTANTS

The following considerations shall apply to the location of fixed points for the measurement of pollutants within the scope of these Regulations: -.

I Macroscale siting

(a) Sampling points directed at the protection of human health shall be sited to provide data on: -

(i) the areas within zones and agglomerations where the highest concentrations occur to which the population is likely to be directly or indirectly exposed for

a period which is significant in relation to the averaging period of the limit value or values;
and

(ii) levels in other areas within the zones and agglomerations which are representative of the exposure of the general population.

Sampling points should in general be sited to avoid measuring very small micro-environments in their immediate vicinity. As a guideline, a sampling point should be sited to be representative of air quality in a surrounding area of no less than 200 m² at traffic-orientated sites and of several square kilometres at urban-background sites.

Sampling points should also, where possible, be representative of similar locations not in their immediate vicinity.

Account should be taken of the need to locate sampling points on islands, where that is necessary for the protection of human health.

(b) Sampling points directed at the protection of ecosystems and vegetation shall be sited more than 20 km from agglomerations or more than 5 km from other built-up areas, industrial installations or motorways. As a guideline, a sampling point should be sited to be representative of air quality in a surrounding areas of at least 1,000 km². The Agency may provide for a sampling point to be sited at a lesser distance or to be representative of air quality in a less extended area, taking account of geographical conditions.

Account should be taken of the need to assess air quality on islands.

II Microscale siting

The following guidelines shall be met as far as practicable: -

(a) the flow around the inlet sampling probe should be unrestricted without any obstructions affecting the airflow in the vicinity of the sampler (normally some metres away from buildings, balconies, trees, and other obstacles and at least 0.5 m from the nearest building in the case of sampling points representing air quality at the building line);

(b) in general, the inlet sampling point should be between 1.5 m (the breathing zone) and 4 m above the ground. Higher positions (up to 8 m) may be necessary in some circumstances. Higher siting may also be appropriate if the station is representative of a large area;

(c) the inlet probe should not be positioned in the immediate vicinity of sources in order to avoid the direct intake of emissions unmixed with ambient air; and

(d) the sampler's exhaust outlet should be positioned so that recirculation of exhaust air to the sampler inlet is avoided.

Guidelines for the location of traffic-orientated samplers: -

(a) for all pollutants, such sampling points shall be at least 25 m from the edge of major junctions and at least 4 m from the centre of the nearest traffic lane;

(b) for nitrogen dioxide and carbon monoxide, inlets shall be no more than 5 m from the kerbside; and

(c) for particulate matter, lead and benzene, inlets shall be sited so as to be representative of air quality near to the building line.

The following factors may also be taken into account: -

- (a) interfering sources;
- (b) security;
- (c) access;
- (d) availability of electrical power and telephone communications;
- (e) visibility of the site in relation to its surroundings;
- (f) safety of public and operators;
- (g) the desirability of co-locating sampling points for different pollutants; and
- (h) planning requirements.

III Documentation and review of site selection

The site-selection procedures shall be fully documented at the classification stage by such means as compass-point photographs of the surrounding area and a detailed map. Sites shall be reviewed at regular intervals with repeated documentation to ensure that selection criteria remain valid over time.

SCHEDULE 9 CRITERIA FOR DETERMINING MINIMUM NUMBERS OF SAMPLING POINTS FOR EACH POLLUTANT

Diffuse sources

The minimum number of sampling points for fixed measurement of each pollutant within the scope of these Regulations to assess compliance with limit values for protection of human health and alert thresholds in zones and agglomerations, where fixed measurement is the sole source of information, shall be determined in accordance with the following table for diffuse sources: -

Population of agglomeration or zone (thousands)

Numbers if concentrations exceed the upper assessment threshold

Numbers if maximum concentrations are between the upper and lower assessment thresholds

For SO₂ and NO_x, numbers in agglomerations where maximum concentrations are below the lower assessment threshold

0 - 249

1

1

not applicable

250 - 499

2

1

1

500 - 749

2

1

1

750 - 999

3

1

1

1000 - 1499

4

2

1

1500 - 1999

5

2

1

2000 - 2749

6

3

2

2750 - 3749

7

3

2

3750 - 4749

8

4

2

If concentrations exceed the relevant upper assessment threshold: -

(a) for NO₂ and particulate matter, at least one urban background station and one traffic-orientated station shall be included; and

(b) for benzene and carbon monoxide, at least one urban-background station and one traffic-oriented station shall be included, provided this does not increase the number of sampling points specified in the preceding table.

Point Sources

For the assessment of pollution in the vicinity of point sources, the number of sampling points for fixed measurement shall be calculated taking into account emission densities, the likely distribution patterns of ambient air pollution and the potential exposure of the population.

Protection of ecosystems or vegetation

The minimum number of sampling points for fixed measurements to assess compliance with limit values for the protection of ecosystems or vegetation in zones other than agglomerations shall be determined in accordance with the following table:-

Numbers if maximum concentrations exceed the upper assessment threshold

Numbers if maximum concentrations are between the upper and lower assessment thresholds

1 station every 20,000 km²

1 station every 40,000 km²

SCHEDULE 10 LIST OF ZONES AND AGGLOMERATIONS

Zone or Agglomeration A

Dublin Conurbation

The Restricted Area of **Dublin**, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 and 2000 (S.I. Nos. 118 of 1998 and 278 of 2000)

Zone B

Cork Conurbation

The Restricted Area of **Cork**, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 ([S.I. No. 118 of 1998](#))

Zone C

Other Cities and Large Towns

The City Council of **Galway** The Restricted Area of **Limerick**, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 (S.I. No. 118 of 1998)

The Restricted Area of **Waterford**, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 2000 (S.I. No. 278 of 2000)

The Borough Councils of

Clonmel, Kilkenny, Sligo

The Restricted Area of **Drogheda**, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 (S.I. No. 118 of 1998)

The Restricted Area of **Wexford**, as specified in the First Schedule to the Air Pollution Act 1987 (Marketing, Sale and Distribution of Fuels) Regulations 1998 (S.I. No. 118 of 1998)

The Town Councils of

Athlone

Bray

Carlow

Dundalk

Ennis

Naas

Tralee

Zone D

Rural Ireland

Remainder of the State excluding Zones A, B and C.

SCHEDULE 11 DATA QUALITY OBJECTIVES

The following data-quality objectives for the required accuracy of assessment methods, of minimum time coverage and of data capture of measurement shall guide quality-assurance programmes.

For all pollutants within the scope of these Regulations

The accuracy for modelling and objective estimation is defined as the maximum deviation of the measured and calculated concentration levels, over the period considered by the limit value, without taking into account the timing of the events.

The requirements for minimum data capture and time coverage do not include losses of data due to the regular calibration or the normal maintenance of the instrumentation.

For sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead

Sulphur dioxide, nitrogen dioxide and oxides of nitrogen

Particulate matter and lead

Continuous measurement

Accuracy

Minimum data capture

15%

90%

25%

90%

Indicative measurement

Accuracy
Minimum date capture
Minimum time coverage

25%

90%

14% (one measurement a week at random, evenly distributed over the year, or eight weeks evenly distributed over the year)

50%

90%

14% (one measurement a week at random, evenly distributed over the year, or eight weeks evenly distributed over the year)

Modelling

Accuracy:
Hourly averages
Daily averages
Annual averages

50% - 60%

50%

30%

50%

Objective estimation

Accuracy

75%

100%

The accuracy of the measurement is defined as laid down in the 'Guide to the Expression of Uncertainty of Measurements' (ISO 1993) or in ISO 5725-1 'Accuracy (trueness and precision) of measurement methods and results' (1994). The percentages in the preceding table are given for individual measurements averaged, over the period considered, by the limit value, for a 95% confidence interval (bias — two times the standard deviation). The accuracy for continuous measurements should be interpreted as being applicable in the region of the appropriate limit value.

The Agency may apply random measurements instead of continuous measurements for particulate matter and lead if it can demonstrate to the Commission that accuracy within the 95% confidence interval with respect to continuous monitoring is within 10%. Random sampling must be spread evenly over the year.

For benzene and carbon monoxide

Benzene

Carbon monoxide

Fixed Measurement

Uncertainty

Minimum data capture

Minimum time coverage

25%

90%

35% for urban background and traffic sites (distributed over the year to be representative of various conditions for climate and traffic)

90% for industrial sites

15%

90%

Indicative measurements

Uncertainty
Minimum Data Capture
Minimum Time Coverage

30%

90%

14% (one day's measurement a week at random, evenly distributed over the year, or 8 weeks evenly distributed over the year)

25%

90%

14% (one measurement a week at random, evenly distributed over the year of 8 weeks evenly distributed over the year)

Modelling

Uncertainty:

Eight-hour averages
Annual averages

—

50%

50%

—

Objective estimation

Uncertainty

100%

75%

The uncertainty (on a 95% confidence interval) of the assessment methods shall be evaluated in accordance with the principles of the ISO Guide to the Expression of Uncertainty in Measurement (1993) or the methodology of ISO 5725:1994 or equivalent. The percentages for uncertainty in the preceding table are given for individual measurements, averaged over the period considered by the limit value, for a 95% confidence interval. The uncertainty for the fixed measurements should be interpreted as being applicable in the region of the appropriate limit value. Until such time as CEN standards with detailed test protocols are fully adopted, the Agency shall have regard to the guidelines for use developed by CEN and issued by the Commission.

The Agency may apply random measurements instead of continuous measurements for benzene if it can demonstrate to the Commission that the uncertainty, including the uncertainty due to random sampling, meets the quality objective of 25%. Random sampling must be evenly distributed over the year to avoid skewing of results.

SCHEDULE 12 RESULTS OF AIR QUALITY ASSESSMENT

For zones or agglomeration within which sources other than measurements are employed to supplement information from measurement or as the sole means of air quality assessment the following information shall be compiled:

- (a) a description of assessment activities carried out;
- (b) the specific methods used, with references to descriptions of the method;
- (c) the sources of data and information;
- (d) a description of results, including uncertainties and, in particular the extent of any area or, if relevant, the length of road within the zone or agglomeration over which concentrations exceed a limit value or values or, as may be, limit value or values plus applicable margin or margins of tolerance and of any area within which concentrations exceed the upper assessment threshold or the lower assessment threshold; and
- (e) for limit values the objectives of which is the protection of human health, the population potentially exposed to concentration in excess of the limit value.

A map or maps showing concentration distributions within each zone or agglomeration as appropriate shall be compiled where possible.

SCHEDULE 13 INFORMATION TO BE INCLUDED IN AIR QUALITY MANAGEMENT PLANS FOR IMPROVEMENT IN THE AMBIENT AIR QUALITY

The air quality management plan shall include the following information

1. Areas of excess air pollution, including map or maps of the: -
 - (a) region (zone or agglomeration, or part thereof);
 - (b) urban areas affected; and
 - (c) measuring stations (location on map, geographical coordinates).
2. General information, including: -
 - (a) type of zone (city, industrial or rural area);
 - (b) estimate of the polluted area (in km²) and of the population exposed to the pollution;
 - (c) useful climatic data;
 - (d) relevant data on topography; and
 - (e) information on the type of targets requiring protection in the zone sufficient to adequately identify them.
3. Names and addresses of the persons within the local authority or local authorities responsible for the development and implementation of the air quality management plan.

4. Nature and assessment of the air pollution, including: -

- (a) concentrations observed over previous years, including before the implementation of improvement measures;
- (b) concentration measured since the beginning of the implementation of any improvement measures; and
- (c) techniques used for the air quality assessment, including where relevant the information specified in Schedule 12.

5. Origins of air pollution, including: -

- (a) the mapping and listing of the main emission sources responsible for the air pollution;
- (b) total quantity of emissions from the sources, in tonnes per year; and
- (c) information on air pollution imported from outside the zone or agglomeration, or part thereof, the subject of the air quality management plan.

6. Analysis of the causes of the air pollution, including: -

- (a) details of those factors and sources responsible for the excess pollutants, including transport sources and cross-border transport where relevant; and
- (b) details of possible measures for improvement of air quality.

7. Details of policies and measures for improvement in air quality in place prior to 21 November 1996, the date of entry into force of Directive 96/62/EC, including: -

and

- (a) local, regional, national and international policies and measures;
- (b) the observed effects of these policies and measures.

8. Details of those policies and measures adopted with a view to reducing air pollution after 21 November 1996, including: -

- (a) a listing and description of all the policies and measures in the air quality management plan;
- (b) the timetable for implementation of the plan; and
- (c) estimate of the improvement of air quality planned and of the expected time required to attain these objectives.

9. Details of the measures or projects planned or envisaged for the long term.

10. A list of the publications, documents, studies, work and other sources that may be used to supplement the information provided in the air quality management plan.

SCHEDULE 14 PRESCRIBED BODIES

(1) The Minister for Health and Children

- (2) Health Boards
- (3) Eastern Regional Health Authority
- (4) Local Authorities
- (5) An Bord Pleanála
- (6) Office of the Director of Consumer Affairs
- (7) The Asthma Society of Ireland
- (8) Met Éireann
- (9) Teagasc

Given under the Official Seal of the Minister for the Environment and Local Government this 5th day of June 2002



Noel Dempsey

Minister for the Environment and
Local Government

EXPLANATORY NOTE

(This note is not part of the instrument and does not purport to be a legal interpretation)

These Regulations transpose Directive 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air, Directive 2000/69/EC relating to limit values for benzene and carbon monoxide in ambient air, and those parts of Directive 96/62/EC on ambient air quality assessment and management not transposed by the Environment Protection Agency Act 1992 (Ambient Air Quality Assessment and Management) Regulations 1999 (S.I. No. 33 of 1999).

The Regulations specify limit values in ambient air for 6 pollutants (SO₂, NO₂ and NO_x, PM₁₀, lead, benzene and CO) to come into effect from 1 January 2005 for all except NO₂, NO_x, benzene and PM₁₀ (Stage II), for which the effective date is 1 January 2010. Alert thresholds for SO₂ and NO₂ are specified. The Regulations also specify margins of tolerance for exceedance of the new limit values in the period prior to their entry into force, which have relevance to the air quality assessment responsibilities assigned to the Environment Protection Agency in the Regulations. The Regulations provide for advice by the Agency to local authorities about the need for air quality management plans where the limit values, plus margins of tolerance, will be or may be exceeded, and the preparation of such plans by local authorities. Provision is also made for air pollution action plans for short-term risks of exceedances of the limit values and alert thresholds.

The Regulations also provide for public information procedures, including where specified public alert thresholds are exceeded, to deal with incidences where there is a risk to human health from brief exposure of SO₂ and NO₂.