PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002

Rules made under s. 337 of the Public Health Act and section 23 of the Interpretation and General Clauses Act.

PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002

Revoked by LN. 2010/126 as from 15.7.2010

(L.N. 2002/049)

11.7.2002

Amending enactments		Relevant current provisions	Commencement date
LN.	2003/081	rr. 2, 7(6)(d)(e), 7(9), 11, 13 (3A)(3B), Sch. 1(V)(VI), Sch. 2(e)(f), Part II, Sch. 3 Part II, Sch. 4 Part I, Sch. 5 Part I, Sch. 6 Part V and VI.	31.7.2003
	2005/097	rr. 2, 8(3), (4) and (5), 9(10), 13(7) and (8)	23.6.2005

Public Health

PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002

ARRANGMENT OF RULES.

PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002

Title

1. These rules may be cited as the Public Health (Air Quality Limit Values) Rules 2002.

Definitions

2. In these Rules–

"alert threshold" has the meaning given by rule 8(2);

"ambient air" means outdoor air in the troposphere, excluding work places;

"assessment" means any method used to measure, calculate, predict or estimate the level of a relevant pollutant in the ambient air;

"fixed measurements" means measurements taken at fixed sites either continuously or by random sampling, the number of measurements being sufficiently large to enable the levels observed to be determined;

"level" means the concentration of a relevant pollutant in ambient air;

"limit value" has the meaning given in rule 3(1);

"lower assessment threshold" has the meaning given in rule 5(5);

"Minister" means the Minister with responsibility for the environment;

"natural events" means volcanic eruptions, seismic activities, geothermal activities, wild-land fires, high-wind events or the atmospheric resuspension or transport of natural particles from dry regions;

"oxides of nitrogen" means the sum of nitric oxide and nitrogen dioxide added as parts per billion and expressed as nitrogen dioxide in microgrammes per cubic metre;

"$PM_{2.5}$" means particulate matter which passes through a size-selective inlet with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter;

"PM_{10}" means particulate matter which passes through a size-selective inlet with a 50% efficiency cut-off at 10 µm aerodynamic diameter;

"public" means natural or legal persons, including health care bodies and other organizations having an interest in ambient air quality and

representing the interests of sensitive populations, consumers and the environment;

"relevant pollutants" means sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead;

"upper assessment threshold" has the meaning given in rule 5(5);

Duty to ensure that ambient air quality is improved

3.(1) The Minister shall take the measures necessary to ensure that concentrations of relevant pollutants in ambient air, as assessed in accordance with rules 4 to 7, do not exceed the limit values set out in Schedule 1 from the dates specified in that Schedule.

(2) The measures taken shall–

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

(b) not contravene Community legislation on the protection of safety and health of workers at work; and

(c) have no significant negative effects on the environment in the other Member States.

Assessment of ambient air quality

4. The Minister shall ensure that ambient air quality is assessed in relation to each of the relevant pollutants in accordance with rules 5 to 7.

Determination of air quality

5.(1) The Minister shall determine in relation to each of the relevant pollutants whether ambient air quality for that pollutant is required to be assessed by–

(a) measurements;

(b) a combination of measurements and modelling techniques; or

(c) by the sole use of modelling or objective estimation techniques.

(2) Measurements must be used to assess ambient air quality in relation to a relevant pollutant if–

(a) the levels of that pollutant are between the relevant limit values and upper assessment thresholds; or

(b) the levels of that pollutant exceeds the limit values for that pollutant.

(3) A combination of measurements and modelling techniques may be used to assess ambient air quality in relation to a relevant pollutant where the levels of that pollutant over a representative period are below the relevant upper assessment thresholds.

(4) Where the levels of a relevant pollutant over a representative period are below the relevant lower assessment thresholds, the sole use of modelling or objective estimation techniques for assessing levels of that pollutant is permissible unless the pollutant being assessed is sulphur dioxide or nitrogen dioxide.

(5) The upper and lower assessment thresholds for the relevant pollutants shall be determined in accordance with Schedule 2.

(6) Where sub–rule (1)(a) applies, modelling techniques may be used for supplementing the measurements taken in order to provide an adequate level of information on ambient air quality in relation to a relevant pollutant.

(7) Where the relevant pollutant is sulphur dioxide this sub-rule applies if the limit values are exceeded owing to concentrations of sulphur dioxide in ambient air due to natural sources.

(8) Where the relevant pollutant is PM_{10}–

(a) this sub-rule applies if due to natural events concentations of PM_{10} in the ambient air are significantly in excess of normal background levels from natural sources;

(b) this sub-rule applies if due to the resuspension of particulates following the winter sanding of roads concentrations of PM_{10} in the ambient air are significantly in excess of normal background levels from natural sources.

Review of determinations

6.(1) The Minister shall review any determination under rule 5 at least once in every five years in accordance with Part II of Schedule 2.

(2) The Minister shall also review any determination under rule 5 in the event of significant changes in activities affecting ambient concentrations of any of the relevant pollutants.

Method of assessment of ambient air quality

7.(1) The Minister shall ensure that ambient air quality is assessed by following the appropriate method for each relevant pollutant in accordance with its current classification.

(2) Where rule 5(1)(a) or (b) applies in relation to a relevant pollutant–

(a) measurements of that pollutant must be taken at fixed sites either continuously or by random sampling; and

(b) the number of measurements must be sufficiently large to enable the levels of that pollutant to be properly determined.

(3) Schedule 3 shall have effect for the purposes of determining the location of sampling points for the relevant pollutants.

(4) Where rule 5(1)(a) applies in relation to a relevant pollutant, the Minister shall ensure that the minimum number of fixed sampling points determined in accordance with Schedule 4 is used for sampling the concentrations of that pollutant.

(5) Where rule 5(1)(b) applies in relation to a relevant pollutant, the Minister shall ensure that the number of fixed sampling points used for sampling that pollutant, and the spatial resolution of other techniques, shall be sufficient for the concentrations of that pollutant to be established in accordance with Part I of Schedule 3 and Part I of Schedule 5.

(6) Reference methods for–

(a) the analysis of sulphur dioxide, nitrogen dioxide and oxides of nitrogen;

(b) the sampling and analysis of lead;

(c) the sampling and measurement of PM_{10},

(d) the sampling and analysis of benzene; and

(e) the analysis of carbon monoxide,

are set out in Schedule 6 and these methods must be used unless other methods are used which the Minister considers can be demonstrated to give equivalent results.

(7) The Minister shall ensure that–

(a) measuring stations to supply representative data on concentrations of $PM_{2.5}$ are installed and operated using methods for the sampling and measurement of $PM_{2.5}$ that he considers suitable; and

(b) sampling points for $PM_{2.5}$ are, where possible, co-located with sampling points for PM_{10}.

(8) Where rule 5(1)(b) or (c) applies, the Minister shall ensure that the information set out in Part II of Schedule 5 is compiled.

(9) For sulphur dioxide, nitrogen dioxide and oxides of nitrogen measurements of volume must be standardised at a temperature of 293°K and a pressure of 101,3 kPa.

Action plans

8. (1) The Minister shall draw up action plans indicating the measures to be taken in the short term where there is any risk of the limit values for any of the relevant pollutants, or the alert thresholds for sulphur dioxide or nitrogen dioxide, being exceeded, in order to reduce that risk and to limit the duration of such an occurence.

(2) The alert threshold for sulphur dioxide is set out in paragraph 1.2 of Part I of Schedule 1 and the alert threshold for nitrogen dioxide is set out in paragraph 2.2 of Part II of Schedule 1.

(3) The Minister shall, in accordance with subrules (4) and (5), ensure that the public is given early and effective opportunities to participate in the preparation and modification or review of the plans or programmes required to be drawn up under subrule (1)

(4) The Minister shall–

(a) ensure that the public is informed, whether by public notices or other appropriate means such as electronic media, about any proposals for such plans or programmes or for their modification or review;

(b) ensure that relevant information about the proposals referred to in paragraph (a) is made available to the public, including information about the right to participate in decision-making;

(c) ensure that the public is entitled to make comments before decisions on the plans and programmes are made;

(d) in making those decisions, take due account of the results of the public participation; and

(e) having examined the comments made by the public, make reasonable efforts to inform the public about–

(i) the decisions taken and the reasons and considerations on which those decisions are based; and

(ii) the public participation process.

(5) The Minister shall publish any information required to carry out his functions under subrules (3) and (4) in such manner as he considers appropriate for the purpose of bringing it to the attention of the public and shall–

(a) make copies of such information accessible to the public; and

(b) specify the detailed arrangements made to enable participation in the preparation, modification or review of the plans or programmes, including–

(i) the address to which comments may be submitted; and

(ii) the time-frame for any such comments allowing sufficient time for each of the different stages of public participation required by subrules (3) and (4).

Action to be taken where limit values are exceeded

9.(1) This rule applies where the levels of one or more of the relevant pollutants are higher than–

(a) in a case where there is no margin of tolerance shown in Schedule 1 in relation to a limit value, the limit value;

(b) in any other case, the limit value plus the margin of tolerance shown in Schedule 1.

(2) This rule applies where the levels of one or more of the relevant pollutants are between the limit value and the limit value plus any margin of tolerance.

(3) Subject to sub-rules (6), (8) and (9), the Minister shall draw up under sub–rule (1) a plan or programme for attaining the limit values for the pollutants in question within the time limits specified in Schedule 1 and shall ensure that the plan or programme is implemented.

(4) The plan or programme shall at least include the information listed in Schedule 7.

(5) Where the level of more that one pollutant is higher than the limit values, an integrated plan covering all the pollutants in question shall be prepared.

(6) Where rule 5(7) applies, the Minister may provide that plans or programmes shall only be required under this rule where the limit values are exceeded owing to man-made emissions.

(7) Plans or programmes for PM_{10} which are prepared in accordance with this rule shall also have the aim of reducing concentrations of $PM_{2.5}$.

(8) Where rule 5(8)(a) applies, the Minister may provide that plans or programmes shall only be required where the limit values are exceeded owing to causes other than natural events.

(9) Where rule 5(8)(b) applies, the Minister may provide that plans or programmes shall only be required where the limit values are exceeded owing to PM_{10} levels other than those caused by winter road sanding.

(10) Where the Minister is required to draw up a plan or programme under subrule, (3) rule 8(3) to (5) shall apply.

Consultations with other territories of the European Union

10.(1) For the purpose of this rule, a transboundary pollution issue arises when in Gibraltar the level of a relevant pollutant exceeds, or is likely to exceed, the limit value plus the margin of tolerance or, as the case may be, the alert threshold following significant pollution in another territory of the European Union.

(2) The Minister through the Secretary of State shall consult any other Member State directly concerned with a pollution issue with a view to finding a solution to that issue–

(a) when he considers that a transboundary pollution issue has arisen affecting Gibraltar; or

(b) on being notified by any other Member State that the limit value or alert threshold for any relevant pollutant may be exceeded in that Member State as a result of pollution originating in Gibraltar.

Designation of Competent Authority

11. The Minister is designated as the competent authority for the purposes of article 3 (implementation and responsibilities) of Council Directive

96/62/EC of 27 September 1996 on ambient air quality assessment and management.

Cases where the levels are lower than the limit value

12.(1) This rule applies where the levels of the relevant pollutants are below the limit values.

(2) The Minister shall ensure that the levels of the relevant pollutants are maintained below the limit values and shall endeavour to preserve the best ambient air quality compatible with sustainable development.

Public information

13.(1) The Minister shall ensure that up-to-date information on ambient concentrations of each of the relevant pollutants is routinely made available to the public.

(2) Information on ambient concentations of sulphur dioxide, nitrogen dioxide and particulate matter shall be updated –

(a) in the case of hourly values for sulphur dioxide and nitrogen dioxide, where practicable on an hourly basis;

(b) in all other cases, as a minimum on a daily basis.

(3) Information on ambient concentrations of lead shall be updated on a three-monthly basis.

(3A) Information on ambient concentrations of benzene, as an average value over the last 12 months, shall be updated-

(a) where practicable on a monthly basis;

(b) in all other cases, as a minimum on a three-monthly basis.

(3B) Information on ambient concentrations of carbon monoxide as a maximum running average over eight hours, shall be updated–

(a) where practicable on an hourly basis;

(b) in all other cases, as a minimum on a daily basis.

(4) Information made available under sub-rule (1) shall include–

(a) an indication of the extent to which limit values and alert thresholds for relevant pollutants have been exceeded over the averaging periods specified in Schedule 1; and

(b) a short assessment of those exceedances and their effects on health.

(5) When an alert threshold is exceeded, the Minister shall ensure that the necessary steps are taken to inform the public, and the information made available shall as a minimum include the information specified in paragraphs 1.3 of Part I and 2.3 of Part II of Schedule 1.

(6) Information to be made available to the public under this rule shall include action plans, plans and programmes prepared under rules 8 and 9 respectively.

(7) Information made available under this rule shall be clear, comprehensible and accessible.

Revocations of Public Health (Air Quality Standards) Rules 1995 and transitional provisions

14.(1) The Public Health (Air Quality Standards) Rules 1995 (L.N.112 of 1995), are hereby revoked as follows.

(2) Rule 2 (limit values for sulphur dioxide and suspended particulates) and rule 4 (limit value for lead in air) shall be revoked with effect from 1st January 2005.

(3) Rules 3 (measurement of sulphur dioxide and suspended particulates), 5 (measurement of lead in air) and 7 (measurement of nitrogen dioxide in the atmosphere) shall be revoked.

(4) Rule 6 (limit value for nitrogen dioxide in the atmosphere) shall be revoked with effect from 1st January 2010.

(5) From the coming into force of these rules and until 1st January 2005, if the methods prescribed by these rules for the assessment of suspended particulate matter are used for the purpose of demonstrating compliance with Annex IV Directive 80/779/EEC of 15th July 1980 on air quality limit values and guide values for suspended particulates, the data so collected shall be multiplied by a factor of 1.2.

SCHEDULE 1

Regulations 3(1), 8(2),

PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002

9(1) and (3), 13(4) AND (5)

LIMIT VALUES, MARGINS OF TOLERANCE ETC.

PART I

SULPHUR DIOXIDE

1.1 Limit values for sulphur dioxide.

	Averaging period	Limit value	Margin of tolerance	Date by which limit value is to be met
1. Hourly limit value for the protection of human health	1 hour	350 µg/m^3, not to be exceeded more than 24 times a calendar year	120 µg/m^3 on 19th July 2001, reducing on 1st January of each following year by equal annual amounts to reach 0 µg/m^3 by 1st January 2005	1st January 2005
2. Daily limit value for the protection of human health	24 hours	125 µg/m^3, not to be exceeded more than 3 times a calendar year	None	1st January 2005
3. Limit value for the protection of ecosystems	Calendar year and winter (1st October to 31st March)	20 µg/m^3	None	19th July 2001

1.2 Alert threshold for sulphur dioxide

500 µg/m3 measured over three consecutive hours at locations representative of air quality.

1.3 Minimum details to be made available to the public when the alert threshold for sulphur dioxide is exceeded

Details to be made available to the public should include at least:

- the date, hour and place of the occurrence and the reasons for the occurrence, where known;

- any forecasts of:

- changes in concentration (improvement, stabilisation, or deterioration), together with the reasons for those changes,

- the geographical area concerned,

- the duration of the occurrence;

- the type of population potentially sensitive to the occurrence;

- the precautions to be taken by the sensitive population concerned.

PART II

NITROGEN DIOXIDE (NO2) AND OXIDES OF NITROGEN (NOx)

2.1 Limit values for nitrogen dioxide and oxides of nitrogen

	Averaging period	Limit value	Margin of tolerance	Date by which limit value is to be met
1. Hourly limit value for the protection of human health	1 hour	200 µg/m^3, not to be exceeded more than 18 times a calendar year	190 µg/m^3 on 19th July 2001, reducing on 1st January of each following year by equal annual amounts to reach 0 µg/m^3 by 1st January 2010	1st January 2010
2. Annual limit value for the protection of human health	Calendar year	40 µg/m^3, NO_2	18 µg/m^3 on 19th July 2001, reducing on 1st January of each equal amounts to reach 0 µg/m3 by 1st January 2010	1st January 2010
3. Annual limit value for the protection of ecosystems	Calendar year	30 µg/m^3 NOx	None	19th July 2001

2.2 Alert threshold for nitrogen dioxide

400 µg/m^3 measured over three consecutive hours at locations representative of air quality.

2.3 Minimum details to be made available to the public when the alert threshold for nitrogen dioxide is exceeded

Details to be made available to the public should include at least:

- the date, hour and place of the occurrence and the reasons for the occurrence, where known;
- any forecasts of:
- changes in concentration (improvement, stabilisation, or deterioration), together with the reasons for those changes,
- the geographical area concerned,
- the duration of the occurrence;
- the type of population potentially sensitive to the occurrence;
- the precautions to be taken by the sensitive population concerned.

PART III

PARTICULATE MATTER (PM_{10})

	Averaging period	Limit value	Margin of tolerance	Date by which limit value is to be met
1. 24-hour limit value for the protection of human health	24 hours	50 µg/m^3 PM10, not to be exceeded more than 33 times a calendar year	20 µg/m^3 on 19th July 2001, reducing on 1st January of each following year by equal annual amounts to reach 0 µg/m^3 by 1st January 2005	1st January 2005
2. Annual limit value for the protection of human health	Calendar year	40 µg/m^3, PM10	6.4 µg/m^3 on 19th July 2001, reducing on 1st January of each following year by equal amounts to reach 0 µg/m^3 by 1st January 2005	1st January 2005

PART IV

LEAD

	Averaging period	Limit value	Margin of tolerance	Date by which limit value is to be met
Annual limit	Calendar	0.5 µg/m^3	0.4 µg/m^3 on 19th July	1st January

value for the protection of human health	year		2001, reducing on 1st January of each following year by equal annual amounts to reach 0 $\mu g/m^3$ by 1st January 2005	2005

PART V

BENZENE

	Averaging period	**Limit value**	**Margin of tolerance**	**Date by which limit value is to be met**
Limit value for the protection of human health	Calendar year	5$\mu g/m^3$	5$\mu g/m^3$ reducing on 1 January 2006 and every 12 months thereafter by 1 $\mu g/m^3$ to reach 0 $\mu g/m^3$ by 1 January 2010	1 January 2010

PART VI

CARBON MONOXIDE

	Averaging period	**Limit value**	**Margin of Tolerance**	**Date by which limit value is to be met**
Limit value for the protection of human health	Maximum daily 8-hour mean	10mg/m^3	6 mg/m^3 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	1 January 2005

The maximum daily 8-hour mean concentration shall be selected by examining 8-hour running averages, calculated from hourly data and updated each hour. Each 8-hour average so calculated shall be assigned to the day on which it ends, i.e. the first calculation period for any one day shall be the period from 17:00 on the previous day to 01:00 on that day; the last calculation period for any one day shall be the period from 16:00 to 24:00 on that day.

PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002

SCHEDULE 2

rules 5(5) and 6(1)

UPPER AND LOWER ASSESSMENT THRESHOLDS AND EXCEEDANCES

PART I

Upper And Lower Assessment Thresholds

The following upper and lower assessment thresholds will apply:

(a) SULPHUR DIOXIDE

	Health protection	**Ecosystem protection**
Upper assessment threshold	60% of 24-hour limit value (75 µg/m^3), not to be exceeded more than 3 times in any calendar year	60% of winter limit value (12 µg/m^3)
Lower assessment threshold	40% of 24-hour limit value (50 µg/m^3), not to be exceeded more than 3 times in any calendar year	40% of winter limit value (8 µg/m^3

(b) 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 (NOx)
Upper assessment value	70% of limit value (140 µg/m^3), not to be exceeded more than 18 times in any calendar year	80% of limit value (32 µg/m^3)	80% of limit value (24 µg/m^3)
Lower assessment value	50% of limit value (100 µg/m^3), not to be exceeded more than 18 times in any calendar year	65% of limit value (26 µg/m^3)	65% of limit value (19.5 µg/m^3)

(c) PARTICULATE MATTER

	24-hour average	**Annual average**
Upper assessment threshold	60% of limit value (30 µg/m^3), not to be exceeded more than seven times in any calendar year	70% of limit value (14 µg/m^3)
Lower assessment threshold	40% of limit value (20 µg/m^3), not to be exceeded more than seven times in any calendar year	50% of limit value (10 µg/m^3)

(d) LEAD

	Annual average
Upper assessment threshold	70% of limit value (0.35 µg/m^3)
Lower assessment threshold	50% of limit value (0.25 µg/m^3)

(e) BENZENE

	Annual Average
Upper assessment threshold	70% of limit value (3.5 (g/m^3)
Lower assessment threshold	40% of limit value (2 (g/m^3)

(f) CARBON MONOXIDE

	Eight-hour average
Upper assessment threshold	70% of limit value (7mg/m^3)
Lower assessment threshold	50% of limit value (5mg/m^3)

PART II

Determination Of Exceedances Of Upper And Lower Assessment Thresholds

Exceedances of upper and lower assessment thresholds must be determined on the basis of concentrations during the previous five years where sufficient data are available. An assessment threshold will be deemed to have been exceeded if during those five years the total number of exceedances of the numerical concentration of the threshold is more than three times the number of exceedances allowed each year.

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 emisson inventories and modelling to determine exceedances of the upper and lower assessment thresholds.

SCHEDULE 3

rules 7(3) and 7(5)

LOCATION OF SAMPLING POINTS FOR THE MEASUREMENT OF RELEVANT POLLUTANTS IN AMBIENT AIR

The following considerations will apply to fixed measurement.

PART I

Macroscale siting

(a) Protection of human health

Sampling points directed at the protection of human health should be sited:

(i) provide data on the areas 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(s);

(ii) to provide data on levels in other areas 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.

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

(b) Protection of ecosystems and vegetation

Sampling points targeted at the protection of ecosystems or vegetation should be sited at a distance representative of air quality, taking account of geographical conditions.

PART II

Microscale siting

The following guidelines should be met as far as practicable:

- 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 0.5m from the nearest building in the case of sampling points representing air quality at the building line);

- in general, the inlet sampling point should be between 1.5m (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;

- 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;

- the sampler's exhaust outlet should be positioned so that recirculation of exhaust air to the sampler inlet is avoided;

- location of traffic-orientated samplers;

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

for carbon dioxide, inlets should be no more than 5 m from the kerbside,

- for particulate matter and lead, inlets should be sited so as to be representative of air quality near to the building line.

The following factors may also be taken into account:

- interfering sources;

- security;

- access;

- availability of electrical power and telephone communications;

- visibility of the site in relation to its surroundings;

- safety of public and operators;

- the desirability of co-locating sampling points for different pollutants;

- planning requirements.

PART III

Documentation and review of site selection

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

SCHEDULE 4

rule 7(4)

CRITERIA FOR DETERMINING MINIMUM NUMBERS OF SAMPLING POINTS FOR FIXED MEASUREMENT OF CONCENTRATIONS OF RELEVANT POLLUTANTS IN AMBIENT AIR

PART I

Minimum Number Of Sampling Points For Fixed Measurement To Assess Compliance With Limit Values For The Protection Of Human Health And Alert Thresholds Where Fixed Measurement Is The Sole Source Of Information

(a) Diffuse sources

If concentrations exceed the upper assessment threshold	If maximum concentrations are between the upper and lower assessment thresholds	For SO_2 and NO_2 in agglomerations where maximum concentrations are below the lower assessment thresholds
1	1	Not applicable

(b) Point sources

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

PART II

Minimum number of sampling points for fixed measurements to assess compliance with limit values for the protection of ecosystems or vegetation

If maximum concentrations exceed the upper assessment threshold	If maximum concentrations are between the upper and lower assessment thresholds
1 station	1 station

PUBLIC HEALTH (AIR QUALITY LIMIT VALUES) RULES 2002
SCHEDULE 5

rule 7(5) and (8)

DATA-QUALITY OBJECTIVES AND COMPILATION OF RESULTS OF AIR-QUALITY ASSESSMENT

PART I

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 are laid down to guide quality-assurance programmes.

	Sulphur dioxide, nitrogen dioxide and oxides of nitrogen	**Particulate matter and lead**
Continuous measurement		
Accuracy	15%	25%
Minimum data capture	90%	90%
Indicative measurement		
Accuracy	25%	50%
Minimum data capture	90%	90%
Minimum time coverage	14% (One measurement a week at random, evenly distributed over the year, or eight weeks evenly distributed over the year.)	14% (One measurement a week at random, evenly distributed over the year, or eight weeks evenly distributed over the year.)
Modelling		
Accuracy:		
Hourly averages	50%-60%	
Daily averages	50%	
Annual averages	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 ' (ISO 1994). The percentages in the 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 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 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.

The Minister may allow for random measurements to be made instead of continuous measurements for particulate matter and lead by methods for which accuracy within the 95% confidence interval with respect to continuous monitoring has been demonstrated to be within 10%. Random sampling must be spread evenly over the year.

The following data-quality objectives, for allowed uncertainty of assessment methods, and of minimum time coverage and of data capture of measurement are provided to guide quality-assurance programmes.

	Benzene	**Carbon monoxide**
Fixed measurements	25%	15%
Uncertainty	90%	90%
Minimum data capture	35% urban background and traffic sites (distributed over the year to be representative of various conditions for climate and traffic)	
Minimum time coverage	90% industrial sites	
Indicative measurements		
Uncertainty	30%	25%
Minimum data capture	90%	90%
Minimum time coverage	14% (one day's measurement a week at random, evenly distributed over the year, or 8 weeks evenly distributed over the year)	14% (one measurement a week at random, evenly distributed over the year, or 8 weeks evenly distributed over the year)

Modelling		
Uncertainty:		
Eight-hour averages	–	50%
Annual averages	50%	–
Objective estimation Uncertainty	100%	75%

The uncertainty (on a 95% confidence interval) of the assessment methods shall be evaluated in accordance with the 'Guide to the Expression of Uncertainty of Measurements' (ISO 1993) or the methodology of ISO 5725:1994. The percentages for uncertainty in the above 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.

The uncertainty 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 of the normal maintenance of the instrumentation.

The Minister may allow for random measurements to be made instead of continuous measurements for benzene if the uncertainty, including the uncertainty due to random sampling, meets the quality objective of 25%. Random sampling must be spread evenly over the year in order to avoid the skewing of results.

PART II

Results Of Air Quality Assessment

The following information should be compiled for sources other than measurement are employed to supplement information from measurement or as the sole means of air quality assessment:

- a description of assessment activities carried out;

- the specific methods used, with references to descriptions of the method;

- the sources of data and information;

- a description of results, including accuracies and, in particular, the extent of any area or, if relevant, the length of road over which concentrations exceed limit value(s) or, as may be, limit value(s) plus applicable margin(s) of tolerance and of any area within which concentrations exceed the upper assessment threshold or the lower assessment threshold;

- for limit values the object of which is the protection of human health, the population potentially exposed to concentrations in excess of the limit value. Where possible maps shall be compiled showing concentration distributions.

SCHEDULE 6

rule 7(6)

REFERENCE METHODS FOR ASSESSMENT OF CONCENTRATIONS OF RELEVANT POLLUTANTS

PART I

Reference Method For The Analysis Of Sulphur Dioxide

SO/FDIS 10498 (standard in draft) ambient air - determination of sulphur dioxide - ultraviolet fluorescence method

PART II

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.

PART IIIA

Reference Method For The Sampling Of Lead

The reference method for the sampling of lead will be that described in the Annex to Directive 82/884/EEC until such time as the limit value in Schedule 1 to these rules is to be met, when the reference method will be that for PM_{10} specified in Part IV of this Schedule.

PART IIIB

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.

PART IV

Reference Method For The Sampling And Measurement Of PM_{10}

The reference method for the sampling and measurement of PM_{10} will be that described in EN 12341 ' Air Quality - Field Test Procedure to Demonstrate Reference Equivalence of Sampling Methods for the PM_{10} fraction of particulate matter '. The measurement principle is based on the collection on a filter of the PM_{10} fraction of ambient particulate matter and the gravimetric mass determination.

PART V

Reference method for the sampling and analysis of benzene

The reference method for the measurement of benzene will be a pumped sampling method on a sorbent cartridge followed by gas chormatographic determination.

PART VI

Reference method for the analysis of cardon monoxide

The reference method for the measurement of cardon monoxide will be a non-dispersive infra-red spectrometric (NDIR) method.

SCHEDULE 7

rule 9(4)

INFORMATION TO BE INCLUDED IN THE PLAN OR PROGRAMME FOR IMPROVEMENT OF AIR QUALITY

1. Localisation of excess pollution

- region

- city (map)

- measuring station (map, geographical coordinates).

2. General information

- estimate of the polluted area (km2) and of the population exposed to the pollution

- useful climatic data

- relevant data on topography

- sufficient information on the type of targets requiring protection.

3. Responsible authorities

Names and addresses of persons responsible for the development and implementation of improvement plans.

4. Nature and assessment of pollution

- concentrations observed over previous years (before the implementation of the improvement measures)

- concentrations measured since the beginning of the project

- techniques used for the assessment.

5. Origin of pollution

- list of the main emission sources responsible for pollution (map)

- total quantity of emissions from these sources (tonnes/year)

- information on pollution imported from other regions.

6. Analysis of the situation

- details of those factors responsible for the excess (transport, including cross-border transport, formation)

- details of possible measures for improvement of air quality.

7. Details of those measures or projects for improvement which existed prior to 21st November 1996

- local, regional, national, international measures

- observed effects of these measures.

8. Details of those measures or projects adopted with a view to reducing pollution following 21st November 1996

- listing and description of all the measures set out in the project

- timetable for implementation

- 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 being researched for the long term.

10. List of the publications, documents, work etc used to supplement information requested in this Schedule.