
STATUTORY INSTRUMENTS

1997 No. 3043

ENVIRONMENTAL PROTECTION

The Air Quality Regulations 1997

Made - - - - *16th December 1997*

Coming into force - - *23rd December 1997*

The Secretary of State for the Environment, as respects England, the Secretary of State for Wales, as respects Wales, and the Secretary of State for Scotland, as respects Scotland, in exercise of the powers conferred on them by section 87(1) and (2) and 91(1)(1) of the Environment Act 1995(2) (“the 1995 Act”) and of all other powers enabling them in that behalf, having, in accordance with section 87(7) of the 1995 Act, consulted the appropriate New Agency, such bodies or persons appearing to them to be representative of the interests of local government and of industry as they consider appropriate, and such other bodies or persons as they consider appropriate, hereby make the following Regulations, a draft of which has, in accordance with section 87(8) of the 1995 Act, been laid before and approved by each House of Parliament:

Citation and commencement

1. These Regulations may be cited as the Air Quality Regulations 1997 and shall come into force on the day after the seventh day on which they are made.

Interpretation

2.—(1) In these Regulations, “the 1995 Act” means the Environment Act 1995.

(2) The provisions of the Schedule to these Regulations which follow the Table in that Schedule shall have effect for the purpose of the interpretation of that Schedule.

Relevant period

3.—(1) The relevant period for the purposes of section 86(3) of the 1995 Act shall, in relation to the preparation of an action plan to which that section applies, be the period of 9 months beginning with the date on which the district council preparing the action plan first consults the relevant county council in relation to the plan pursuant to paragraph 1(2)(e) of Schedule 11 to the 1995 Act.

(1) See the definition of “prescribed”, “regulations” and “relevant period”.
(2) 1995 c. 25.

(2) The relevant period for the purposes of the other provisions of Part IV of the 1995 Act⁽³⁾ shall be the period beginning with the date on which these Regulations come into force and ending on 31st December 2005.

Air quality objectives

4.—(1) The air quality objective for each substance listed in the first column of the Table in the Schedule to these Regulations shall be to restrict, by no later than the end of the relevant period prescribed by regulation 3(2), the level at which that substance is present in the air to the level set out in the second column of that Table for that substance.

(2) The achievement or likely achievement of an air quality objective prescribed by paragraph (1) shall be determined by reference to the quality of air at locations which are situated outside of buildings or other natural or man-made structures above or below ground and where members of the public are regularly present.

Signed by authority of the Secretary of State for the Environment

Michael Meacher
Minister of State,
Department of the Environment, Transport and
the Regions

16th December 1997.

Signed by authority of the Secretary of State for Wales

Win Griffiths
Parliamentary Under Secretary of State, Welsh
Office

16th December 1997.

Sewel
Parliamentary Under Secretary of State, Scottish
Office

16th December 1997.

(3) See sections 82 to 85 and 86(6) of the 1995 Act.

SCHEDULE

Regulations 2(2) and 4

AIR QUALITY OBJECTIVES

TABLE

Substance	Air Quality Objective levels
Benzene	5 ppb or less, when expressed as a running annual mean
1,3-Butadiene	1 ppb or less, when expressed as a running annual mean
Carbon Monoxide	10 ppm or less, when expressed as a running 8 hour mean
Lead	0.5 micrograms per cubic metre or less, when expressed as an annual mean
Nitrogen Dioxide	150 ppb or less, when expressed as an hourly mean, and 21 ppb or less, when expressed as an annual mean
PM ₁₀	50 micrograms per cubic metre or less, when expressed as the 99th percentile of daily maximum running 24 hour means
Sulphur Dioxide	100 ppb or less, when expressed as the 99.9th percentile of 15 minute means

Interpretation

For the purposes of this Schedule:

1. “ppb” means parts per 1000 million by volume.
2. “ppm” means parts per million by volume.
3. “PM₁₀” means the mass fraction of particles which if inhaled would penetrate beyond the larynx. This mass fraction shall be taken to be the thoracic convention, E_T, as defined in ISO 7708:1995(E) ‘Air Quality—Particle size fraction definitions for health-related sampling’, published by the International Organisation for Standardisation.
- 4.—(1) A running annual mean is a mean which is calculated on an hourly basis, yielding one running annual mean per hour. The running annual mean for a particular substance at a particular location for a particular hour is the mean of the hourly levels for that substance at that location for that hour and the preceding 8759 hours.
 - (2) For the purpose of the calculation of a running annual mean, the hourly level for a particular substance at a particular location is either:
 - (a) the level at which that substance is recorded as being present in the air at that location during the hour on that basis of a continuous sample of air taken during that hour for at least 30 minutes; or
 - (b) the mean of the levels recorded at that location on the basis of 2 or more samples of air taken during the hour for an aggregate period of at least 30 minutes.

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5. A running 8 hour mean is a mean which is calculated on an hourly basis, yielding one running 8 hour mean per hour. The running 8 hour mean for a particular substance at a particular location for a particular hour is the mean of the hourly means for that substance at that location for that hour and the preceding 7 hours.

6.—(1) An annual mean is a mean which is calculated on a yearly basis, yielding one annual mean per calendar year. The annual mean for a particular substance at a particular substance at a particular location for a particular calendar year is:

- (a) in the case of lead, the mean of the daily levels for that year;
- (b) in the case of nitrogen dioxide, the mean of the hourly means for that year.

(2) For the purpose of the calculation of an annual mean, the daily level for a particular substance at a particular location for a particular day is the level at which that substance is recorded as being present in the air at that location during the week in which the day occurs on the basis of a continuous sample of air taken throughout that week (each day in that week therefore being attributed with the same daily level).

(3) For the purpose of paragraph (2) “week” means a complete week beginning on a Monday, except that it also includes any period of less than seven days from the beginning of the calendar year until the first Monday in that year or from the beginning of the last Monday in the calendar year to the end of that year.

7.—(1) A daily maximum running 24 hour mean is a mean which is calculated on a daily basis, yielding one daily maximum running 24 hour mean per day. The daily maximum running 24 hour mean for a particular substance at a particular location for a particular day is the maximum of the 24 running 24 hour means recorded for that substance at that location during that day.

(2) For the purpose of the calculation of a daily maximum running 24 hour mean—

- (a) a running 24 hour mean is a mean which is calculated on an hourly basis, yielding one running 24 hour mean per hour, and the running 24 hour mean for a particular substance at a particular location for a particular hour is the mean of the hourly means for that substance at that location for that hour and the preceding 23 hours;
- (b) “day” means the 24 hour period commencing immediately after midnight, Greenwich mean time.

8.—(1) The nth percentile (that is to say the 99th or the 99.9th percentile) is calculated for a calendar year (yielding one result per calendar year) as follows:

Let:

- (1) N equal the number of measurements for that calendar year;
- (2) k equal—

$$(n \times N) / 100$$

rounded to the nearest whole number (or rounded up to the nearest whole number where the fractional part of the number is 0.5); and

(3) the N measurements be listed in ascending order:

$$X_1; X_2; X_3; \dots \dots X_k; \dots \dots X_{N-1}; X_N$$

Then: the nth percentile for that calendar year is the value of the measurement listed in the kth position; that is X_k .

(2) For the purpose of the calculation of the nth percentile, the measurements for a calendar year are:

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- (a) in the case of the 99th percentile of daily maximum running 24 hour means, the 365 daily maximum running 24 hour means for the calendar year in question (or 366 in the case of a leap year);
- (b) in the case of the 99.9th percentile of 15 minute means, the 35040 15 minute means for the calendar year in question (or 35136 in the case of a leap year).

9. A 15 minute mean is a mean calculated every 15 minutes. The 15 minute mean for a particular substance at a particular location for a particular 15 minutes is the mean of the levels recorded, at a frequency of not less than once every 10 seconds, for that substance at that location during that 15 minutes.

10. An hourly mean is a mean calculated every hour. The hourly mean for a particular substance at a particular location for a particular hour is the mean of the levels recorded, at a frequency of not less than once every 10 seconds, for that substance at that location during that hour.

EXPLANATORY NOTE

(This note is not part of the Regulations)

Part IV of the Environment Act 1995 requires local authorities to review the quality of air within their area. The reviews have to consider the air quality for the time being and the likely future air quality during the “relevant period” (a period to be prescribed by regulations). Such reviews have to be accompanied by an assessment of whether any prescribed air quality standards or objectives are being achieved or are likely to be achieved within the relevant period.

These Regulations prescribe the period beginning with the date on which these Regulations come into force and ending on 31st December 2005 as the relevant period referred to above (regulation 3(2)) and set out the air quality objectives to be achieved by the end of that period (regulation 4 and the Schedule). Copies of ISO 7708: 1995(E) referred to in the definition of “PM₁₀” in the Schedule can be obtained from the British Standards Institution, Customer Services, 389 Chiswick High Road, London W4 4AL. The Regulations do not prescribe any air quality objectives which have to be achieved before the year 2005 or any air quality standards.

Where any of the prescribed objectives are not likely to be achieved within any part of a local authority’s area within the relevant period, the authority concerned will have to designate that part of its area as an air quality management area (section 83(1) of the 1995 Act). An action plan covering the designated area will then have to be prepared setting out how the authority intends to exercise its powers in relation to the designated area so as to achieve the prescribed objectives (section 84(2) of the 1995 Act). The Regulations prescribe the period within which a county council will have to submit proposals to a district council which is preparing an action plan within the county council’s area (regulation 3(1)). This situation will only arise in England.