

**DECREE**

**of the Ministry of the Environment**

of 11 July 2002,

**appointing a list of pollutants, general emission limits, the method used to forward messages and information,  
the method used to establish quantities of pollutants discharged, the darkness of smoke, permissible levels of odour nuisance and intensity, terms and conditions for the authorization of persons, requirements regarding the keeping of operating records on air pollution sources and terms and conditions for the application thereof**

The Ministry of the Environment appoints, pursuant to § 55, paragraph 3 of Act No 86/2002 Sb. on the protection of the air and on an amendment to related legislation (the Air Protection Act), (hereinafter referred to as the 'Act'), for the implementation of § 5, paragraph 12, § 6, paragraph 9, § 9, paragraph 10, § 10, paragraph 2, § 13, paragraph 8, § 15, paragraph 14 and § 17, paragraph 10 of the Act:

**TITLE I**

**GENERAL PROVISIONS**

**§ 1**

**Subject of Regulation**

This Decree appoints

- a) a list of pollutants and their set groups,
- b) a catalogue of stationary sources of air pollution (hereinafter referred to as 'source'),
- c) general emission limits for pollutants and their established groups, for the darkness of smoke and for odorous substances and the permissible level of odour nuisance,
- d) the method used to forward messages and information,
- e) the method used to determine quantities of discharged pollutants, odour intensity and permissible levels of odour nuisance, the darkness of smoke, methods, technical means for the measurement of emissions and requirements regarding time limits and the processing of results,
- f) terms and conditions for the authorization of persons to carry out certain activities connected with air protection,
- g) requirements regarding the keeping of the operating records of very large, large and medium-sized sources,
- h) requirements regarding the reporting of accidents and breakdowns,

- i) requirements regarding the processing of a set of technical and operating parameters and technical and organizational measures to ensure the operation of a stationary source (hereinafter referred to as 'operating rules'),
- j) requirements regarding the keeping of registers in the framework of an air quality information system,
- k) requirements regarding an application for an opinion and permit.

## § 2 Basic Terms

For the purposes of this Decree:

- a) 'emission mass flow rate' shall mean the proportion of mass pollutant diverted from a source to the external atmosphere (hereinafter referred to as 'air') and of the time over which this substance is diverted, expressed in mass units per unit of time; it describes the impact of a source on the quality of the air,
- b) 'mass concentration of a pollutant' shall mean the quantity of a pollutant expressed in mass units as a unit of the volume of waste gas (the proportion of the mass of the pollutant and of the volume of waste gas) under defined conditions, or after conversion to relative conditions,
- c) 'measurement of emissions' shall mean a specification of the mass flow rates and mass concentration of pollutants by means of measurements,
- d) 'calculation of emissions' shall mean a specification of the mass flow rates of emissions via the material balance of the technological process or by means of emission factors,
- e) 'specific production emission' shall mean the ratio of the mass of a pollutant released into the air to the relative quantity established by measurement and calculation at an individual facility or set of facilities at a source; the relative quantity is especially the mass of spent fuel or quantity of heat supplied by fuel, or the mass of input raw material or quantity or mass of production units in an individual measured facility or set of facilities at a source,
- f) 'emission factor' shall mean the mean specific production emission typical for a particular group of sources,
- g) 'continuous measurement of emissions' shall mean the continuous measurement of the mass concentrations of pollutants by means of the resources of an emission measuring system fulfilling the requirements specified in Annex No 6 to this Decree. An emission measuring system is usually composed of a equipment for the collection and treatment of a sample or measuring route, devices for the measurement of monitored constituents, devices for the measurement of status and reference (standard, comparative) quantities, devices for the specification of the flow rate of waste gas, and equipment for the collection, evaluation and sorting of measured values and means for their registration, distribution and storage,
- h) 'device calibration' shall mean a set of activities which, under certain conditions, provide a dependence between values indicated by a measuring device and values of a monitored quantity,

- i) 'metrological connection of measurements' shall mean the classification of a given emission measurement into an uninterrupted sequence for the transfer of the value of the measured quantity beginning with the standard of the highest metrological quality for the given purpose,
- j) 'verification of the emission measuring system' shall mean a comparison of the values recorded in the emission measuring system with values measured by the reference or an equivalent method, by a metrologically connected periodic measurement,
- k) 'periodic measurement of emissions' shall mean the measurement of emissions carried out by means of individual discrete measurements at intervals and in a manner prescribed by this Decree; a periodic measurement is carried out by the manual collection of a sample and subsequent physical, physical and chemical, or chemical analysis, or by direct measurement with devices for continuous measurement,
- l) 'individual measurement' shall mean one measurement of one pollutant in waste gas lasting from approximately one minute to 24 hours, depending on the concentration of the pollutant, the method of determination, and requirements hereof in accordance with the relevant technical standards for the measurement of emissions or conditions specified by air pollution authorities, the process of which is specified in the quality manual of the authorized person according to § 15, paragraph 1, letter a) of the Act,
- m) 'particulate matter' shall mean particles of various sizes, shape, origin, composition and structure which are present in waste gas in a solid state and are borne by this gas at a temperature and pressure in a stack, exit, outlet or during the measurement of emissions,
- n) 'total organic carbon' (TOC) shall mean the total quantity of carbon contained in organic compounds which are present in the vapour and gaseous stage in waste gas, expressed in mass units in a unit of volume under defined conditions, or after conversion to relative conditions,
- o) 'heavy metals' shall mean metals or metalloids which are stable and have a specific mass greater than  $4,500 \text{ kg.m}^3$ , and their compounds,
- p) 'persistent organic pollutants' (POP) shall mean organic compounds which report toxic properties, are persistent, bioaccumulate, form deposits and are transmitted over long distances by air, and which probably have a significant harmful effect on human health or harmful effects on the environment,
- r) 'odour' shall mean human subjective olfactory perception,
- s) 'odour intensity' shall mean information about the level of odour determined by means of measuring and testing methods, in accordance with the requirements hereof, relevant technical standards for the measurement of emissions, or processes of specified air pollution authorities, expressed by odour units, odour number, and the level of odour nuisance to the population,
- t) 'concentration of odour' shall mean a value determining the quantity of odorous units in a volume unit of air,
- u) 'emission limit of odorous substances' (odour number) shall mean the maximum quantity of odour characterized by odour units in  $1 \text{ m}^3$  of clean air which may be emitted by a source into the atmosphere,
- v) 'European odour unit' (OUER) (odour unit) shall mean the quantity of odorous substances which, if dispersed in  $1 \text{ m}^3$  of neutral gas under normal conditions, induces

- in at least 50% of the assessors an olfactory perception corresponding to the European reference odour unit,
- w) 'European reference odour unit' shall mean the physiological reaction of assessors induced by a dose of 123 µg n-butanol dispersed in 1 m<sup>3</sup> of neutral gas (at a molar ratio of 0.040 µmol of n-butanol per 1 mol of neutral gas) under normal conditions,
  - x) 'odour nuisance' shall mean the perception of odour causing a nuisance of more than the permissible level,
  - y) 'odour detection concentration threshold' shall mean the smallest concentration of odorous substances for which half of the examined population can identify an odour,
  - z) 'odour recognition concentration threshold' shall mean a content of odorous substances in the air whereby 50% of cases of exposure to their effects lead to their identification. The odour recognition concentration threshold usually lies 3 OUER.m<sup>-3</sup> higher than the odour detection concentration threshold,
  - aa) 'scent threshold' shall mean the state of dilution of clean air with air polluted with an odour, whereby this blend induces the first sign of olfactory perception,
  - bb) 'permissible level of odour nuisance' (odour nuisance immission limit) shall mean the highest concentration of a blend of odorous substances, where the incidence thereof in the air is not a nuisance to the population,
  - cc) 'premises' shall mean a structurally independent building or operationally independent section (operating unit), where a source or several sources are located which are operated by a single operator,
  - dd) 'facility' shall mean a combustion or production technological facility which may be an independent source of air pollution or may, together with other facilities (a group of boilers or a group of technological sections), form a source of pollution,
  - ee) 'source accident' shall mean a sudden or unexpected situation, whereby emissions of pollutants immediately and significantly rise and the source cannot usually be regulated or stopped by means of ordinary technical processes,
  - ff) 'nominally specified source' shall mean a significant source specified in § 17 or in a special legal regulation,<sup>1)</sup> for which special requirements apply regarding the measurement of emissions,
  - gg) 'fugitive emission' shall mean the introduction of pollutants into the environment, whereby it is not possible, by means of measurements, to determine all the quantities required to calculate the mass flow rate. This term includes, but is not restricted to, emissions of substances released into the atmosphere through windows, doors, air vents and similar outlets, leakages of distribution systems and fixtures and fittings, and any and all emissions occurring during the operation of sources from open space,
  - hh) 'waste gas' shall mean gas containing pollutants which is diverted or which leaks into the external atmosphere from sources of pollution; these are especially waste gases, waste gases and vapours, technological exit gases, and other gaseous substances,
  - ii) 'normal status conditions' shall mean a temperature of 273.15 K (0 C) and pressure of 101.325 kPa.

## **TITLE II**

### **LIST OF POLLUTANTS AND THEIR ESTABLISHED GROUPS,**

## **CATALOGUE OF SOURCES, GENERAL EMISSION LIMITS AND THE PROVISION OF INFORMATION**

(Relating to § 5, paragraph 12 and § 13, paragraph 8 of the Act)

### **§ 3 List of Pollutants**

A list of pollutants and their specified groups (§ 5, paragraph 12 of the Act) is specified in Annex No 1 to this Decree.

### **§ 4 Catalogue of Categories, Groups and Subgroups of Sources**

(1) The content and requirements of the catalogue of categories, groups and subgroups of sources is given in Annex No 3 to this Decree.

(2) The method used to appoint the category of sources not included in paragraph 1 is carried out in accordance with the requirements specified in a special legal regulation.<sup>1)</sup>

### **§ 5 General Emission Limits**

(1) The general emission limits of pollutants and their established groups, the permissible darkness of smoke and emission limits for odorous substances are specified in Annex Nos 1 and 2 to this Decree.

(2) The general emission limits for fugitive emissions of odorous substances when assessing an odour by means of measurements in the odour trace of a source at a maximum distance of the border of the land, on which it is located, are specified in Annex No 2 to this Decree. For the purposes of determining odorous substances, the border of a piece of land is established in accordance with the decision of public administration authorities regarding the location and the permit to build the stationary source, or regarding the approbation thereof.

### **§ 6 Provision and Retrieval of Information**

(1) The operators of sources of air pollution (hereinafter referred to as 'operator') provide information to all the competent air protection authorities within fifteen calendar days, or immediately, if the protection of human health, the environment, or important public interest emphasized by the party requesting the information, including an enquiry by a body of the European Commission according to § 37, paragraph 1 of the Act, depends on the information provided.

(2) A list of holders of a valid certificate under § 15 of the Act is accessible in the Bulletin of the Ministry of the Environment (hereinafter referred to as 'Ministry Bulletin').

(3) The Ministry of the Environment (hereinafter referred to as 'the Ministry') provides information from the register of regulated substances and the persons who handle them (§ 32, paragraph 8 of the Act).

(4) A list of obligatory methods for the processing of dispersion studies according to § 17, paragraph 5 of the Act is appointed by a special legal regulation<sup>2)</sup> together with reference methods for processing dispersion studies; this list is updated to include newly approved methods. An updated list is accessible in the Ministry Bulletin.

(5) If duties to provide new or expanded information stem from special legal regulations or the legal regulations of the European Communities, the Ministry shall agree with the competent air pollution authorities on the method for its retrieval, which shall be announced in the Ministry Bulletin.

(6) A list of technical standards for the measurement of emissions and requirements for emission measuring systems is given in Annex Nos 5 and 6 to this Decree. This list is updated with newly adopted standards. Changes to the list are retrievable in the Ministry Bulletin.

(7) An announcement on the submission of an application for permit according to § 17, paragraph 1, letters b), c) and d) and paragraph 2, letter c) of the Act, in the case of a new waste incineration plant or co-incineration facility or in the case of significant changes thereto, with information on the place where this application, including all specified requirements, can be perused, will be published by the competent air protection authorities in whose district the facilities are located or are to be located on the portal of the public administration and their official notice boards for 30 days. During this period, anyone may submit comments and suggestions regarding the application to the competent body. The competent air protection authority, prior to the issue of permit, shall assess the comments and suggestions. Permits, and any and all subsequent changes or additions thereto, are made accessible in the same manner. An announcement on the submission of an application for the approval of a scheme for the reduction of emissions at a source in accordance with § 54, paragraph 10 of the Act, with information on the place where this application, including all specified requirements, can be perused, shall be published by the competent air protection authorities on whose district the source is located, on the portal of the public administration and on their official notice boards for 30 days. During this period, anyone may submit comments and suggestions regarding the application to the competent body. The competent air protection authority, prior to approval of the scheme, shall assess the comments and suggestions. The approved copies of the scheme are made accessible in the same manner.

(8) The operators of incineration plants and co-incineration facilities with a nominal operating capacity of 2 tonnes of waste per hour or more shall make an annual report available to the public on their operations. The report contains especially information about the types and annual mass flow rates of incinerated waste, about discharged pollutants, about the fulfilment of emission limits, about the quantity and method for the elimination of waste after incineration and about any and all derogations from the approved operating rules.

### TITLE III

#### **METHOD FOR THE DETERMINATION OF EMISSIONS AND TECHNICAL RESOURCES FOR MEASUREMENTS OF EMISSIONS OF POLLUTANTS, MEASUREMENTS OF THE DARKNESS OF SMOKE, OF EMISSIONS OF ODOROUS SUBSTANCES, AND THE METHOD FOR THE SPECIFICATION OF PERMISSIBLE LEVELS OF ODOUR NUISANCE, AND MEASUREMENTS OF EMISSIONS AT NOMINALLY DETERMINED SOURCES**

(With regard to § 9, paragraph 10 of the Act)

#### § 7

(1) Emissions are identified by measurements, or by calculation provided that measurements have been excluded in the cases specified in paragraph 10.

(2) Emissions determined by measurement are demonstrated by operators by periodic measurement or by continuous measurement and by calculations using the results of these measurements.

(3) Emissions determined by calculation are demonstrated by operators in accordance with § 9, paragraph 1 of the Act by means of a balance of the technological process or using emission factors. Emission factors for selected combustion sources and other sources are specified in a special legal regulation<sup>1)</sup> and in Annex No 4 to this Decree.

(4) Measurements are only used to determine the emissions of those pollutants or their specified groups for which specific or general emission limits applied by means of the process under § 9, paragraph 4 of the Act have been set for a given source. This provision does not apply to nominally specified sources according to § 17.

(5) Sampling or measurements are carried out according to § 9, paragraph 2 of the Act on the place prior to the discharge of waste gas into the air or at another location, if the composition of waste gas therein is the same as in the discharge or is precisely defined by the content of a reference component, most frequently oxygen, so that the results of measurements are comparable with the values of emission limits. The sampling of fugitive emissions is carried out in accordance with the requirements of this Decree, relevant technical standards for the measurement of emissions, and conditions specified by air pollution authorities.

(6) The construction of a location for the collection of a sample or the measurement of emissions (measuring location) and its maintenance in an operational condition are the responsibility of the operator [§ 11, paragraph 1, letter j) of the Act] in accordance with the technical standards specified in Annex Nos 5 and 6 to this Decree; the operator shall ensure it from the aspect of work safety in accordance with a special legal regulation.<sup>3)</sup> In accordance with these Annexes, measuring locations are equipped with sampling flanges.

(7) The approval of a measuring location by the Czech Inspection of the Environment (hereinafter referred to as 'Inspection') is part of the conditions of the approbation or other similar decision. A description of the measuring location is given in the operating rules of the source.

(8) The method for the monitoring of a source's operations and for the determination of emissions in case of a breakdown in continuous measurement is stipulated by the operator in the source's operating rules.

(9) Facilities which are operated only for a period not exceeding 700 hours in total in a calendar year and are specified for such use in advance and registered in this respect by the Inspection need not be equipped for continuous measurement, even if they would otherwise be subject to such duties.

(10) The measurement of pollutant emissions may be waived in cases where it is not possible to guarantee with available technical resources that the measurement reflects the actual state of air pollution. This provision does not affect the duty of the operators of sources according to § 9, paragraph 1 of the Act and § 12, paragraph 1, letter f) of the Act. The method applied for measurements shall be discussed by the operator with the competent regional authority.

(11) In the case of combustion sources composed of a larger number of combustion facilities (e.g. boilers) which have significantly different technical parameters (output, fuel, technical design, period of operation in the course of the calendar year, the diversion of combustion products), the operator may discuss, with the Inspection, the specification of the individual measuring plan of the source as given in the source's operating rules.

## § 8

### **Periodic Measurement**

(1) A periodic measurement is carried out in the case of very large, large and medium-sized sources so that the emissions of each individual facility at a source are determined

- a) on the date specified in the permit under § 17, paragraph 1, letter d) of the Act when the facility is put into operation,
- b) after each change of fuel or raw materials above the framework of the approved operating rules,
- c) after each significant and long-lasting intervention into the structure or equipment of facilities at a source which could lead to a change in emissions,

within 3 months of the occurrence of any of the circumstances specified under letters a) to c). The sampling locations or locations for the measurement of emissions are described in the source's operating rules or, if a source has no operating rules, in a decision of the Inspection according to § 7, paragraph 7.

(2) A periodic measurement at locations for the collection of samples or for measurements as specified under paragraph 1 is also carried out



- a) in the case of very large sources twice per calendar year, not earlier than 3 months as of the date of the previous measurement, provided that the operator does not have the duty to measure continuously or provided that this duty is not otherwise established under a special legal regulation<sup>1)</sup> or by Annex No 14 to this Decree,
- b) in the case of large sources once per calendar year, not earlier than 6 months as of the date of the previous measurement, provided that the operator does not have the duty to measure continuously or provided that nothing to the contrary is specified under a special legal regulation<sup>1)</sup>,
- c) in the case of medium-sized sources once every 3 calendar years, not earlier than 18 months as of the date of the previous measurement, in the case of boilers incinerating solid, liquid or gaseous fuel with a heat output equal to or higher than 1 MW and sources, where the compliance with emission limits is achieved by technological control of the production process or by use of facilities to clean waste gas,
- d) in the case of medium-sized sources not falling under letter c), once every 5 calendar years, not earlier than 30 months as of the date of the previous measurement.

(3) The dates, the scope of the measurement, and the authorized person who will carry out the measurement, shall be announced by the operator in writing to the Inspection within 14 days prior to the date the measurement was started. Any changes in the announcement shall be reported by the operator to the Inspection forthwith; in the event of the change of the date of measurement the operator proceeds in agreement with the Inspection.

(4) A periodic measurement is used to determine the emissions of pollutants for which a given process has set emission limits, provided that the operator is not set the duty of measuring continuously for these emissions. The duty of measurement is regulated differently from this provision in the case of nominally identified sources specified under a special legal regulation<sup>1)</sup> and in § 17.

(5) For a periodic measurement of emissions, it is possible to use only those measuring methods which will allow to determine the concentrations of pollutants in an interval of at least 10% to 200% of the emission limit. Technical standards for periodic measurements are contained in Annex No 5 to this Decree.

(6) A periodic measurement is arranged by operators by means of an authorized person.

(7) A periodic measurement at a source can be substituted by continuous measurement, on the basis of an application from the operator. In this case the operator proceeds according to §§ 11 and 12.

## § 9

### **The Execution a Periodic Measurement**

(1) During a periodic measurement by manual methods, the following are carried out:

- a) at least 3 individual measurements at a source with constant operating conditions,
- b) at least 6 individual measurements at a source with variable operating conditions, or

- c) more individual measurements at a source with a periodical, interrupted, batch manner of production, so that the measurement covers the entire period of the cycle or batch.

The period for the collection of partial, successive samples is adapted to the anticipated concentration in accordance with technical processes for the measurement of emissions and requirements of this Decree, technical standards for measurement of emissions specified in Annex No 5 to this Decree, and terms and conditions established in the decisions of air protection authorities.

During a periodic measurement using devices for continuous measurement, the measurement is carried out for the entire period in accordance with paragraphs 2 and 3.

(2) The minimum period for a periodic measurement under § 8, paragraph 1

- a) is 6 hours in the case of very large, large and medium-sized sources at the maximum projected source output, or
- b) in the case of sources with a periodical, interrupted or batch manner of production, is established in such manner that the measurement is carried out for the entire period of the cycle at the maximum projected source output. If a cycle lasts a maximum of 4 hours, the periodic measurement must include at least 3 batches, provided that this is possible during a single day. If a cycle lasts longer than 4 hours, emissions are measured continuously for the entire period of a single production cycle at the nominal output of the source.

If it is not possible to achieve maximum projected output for technical reasons at the source, the measurement is carried out at the maximum achievable output. The increase in the source's output after the date of the measurement is considered as a significant and long-lasting intervention in the construction of the source.

(3) The minimum period of a periodic measurement according to § 8, paragraph 2

- a) is 6 hours in the case of medium-sized sources at the ordinary operating output of the source, which means output with uninterrupted use of the facilities at the source, achieving production which, from the aspect of the economic and business conditions of the operator in the period since the last authorized measurement, is average and ordinary,
- b) is 6 hours in the case of very large and large sources with constant operating conditions at the ordinary operating output of the source,
- c) is 12 hours in the case of very large and large of sources with variable operating conditions at the ordinary operating output of the source, or
- d) at a source with a periodical, interrupted or batch manner of production, is established so that the measurement is carried out for the entire period of the cycle at the ordinary operating output of the source. If the cycle lasts a maximum of 4 hours, the periodic measurement includes at least 3 batches, provided that it is to carry this out during a single day. If a cycle lasts longer than 4 hours, emissions are measured continuously for the entire period of a single production cycle at the ordinary operating output of the source.

(4) In the case of combustion sources with boilers, each with a nominal heat output lower than 5 MW, burning exclusively light heating oil, natural gas or LPG fuel, it is also possible to determine the mass concentration of carbon dioxide and nitrogen oxides potentiometrically by direct measurement with devices with electrochemical sensors.

(5) In the case of a periodic measurement at the sources under paragraph 4, each facility (boiler) of the source is subject to at least

- a) 3 individual measurements, each lasting at least 15 minutes without interruption, with a period of the measured value storage equal to or shorter than 30 seconds in the case of a source with constant operating conditions,
- b) 6 individual measurements, each lasting at least 15 minutes without interruption, with a period of the measured value storage equal to or shorter than 30 seconds in the case of a source with variable operating conditions.

(6) In the case of sources equipped with a fabric filter to reduce air pollution, with an output concentration of particulate matter lower than  $50 \text{ mg.m}^{-3}$  under operating conditions and with an emission limit established exclusively for particulate matter, three individual measurements are carried out for the concentration of particulate matter. The period for the collection of partial, successive samples is adapted to anticipated concentrations, in accordance with the requirements of this Decree, technical standards for the measurement of emissions in accordance with Annex Nos 5 and 6 to this Decree, and terms and conditions established in the decisions of air protection authorities, lasting at least 30 minutes without interruption for each individual partial measurement.

## § 10

### **Evaluating a Periodic Measurement**

(1) The results of a periodic measurement are processed so that they can be compared with emission limits. The ability of a source to comply with the emission limit is demonstrated, if the average of the individual measurements of the concentration of pollutant for the entire measurement, calculated in accordance with paragraphs 3 to 5, is less or equal to the value of the emission limit and at the same time each value of the concentration of a pollutant determined by an individual measurement is less than 120% of the emission limit, unless a special legal regulation<sup>1)</sup> appoints otherwise. The compliance with emission limit value is evaluated likewise, if it is expressed by a measurable quantity other than the concentration of the pollutant.

(2) In the case of a periodic measurement of the concentration of pollutants carried out with devices for continuous measurement, the emission limit is considered to be complied with if the arithmetic average of thirty-minute mean values calculated in accordance with paragraph 5 is less or equal to the value of the emission limit and at the same time each thirty-minute mean value determined concentration of the pollutant is less than 120% of the emission limit, unless a special legal regulation<sup>1)</sup> appoints otherwise.

(3) An evaluation of a periodic measurement contains information about the mass concentration of the pollutant, its mass flow rate and specific production emission and conditions of their validity for the individual measured facility or technological process. If the value of the specific production emission is set at the same time as the emission limit at the source, any transgression proven on the basis of the results of a periodic measurement shall be considered a transgression of the emission limit.

(4) A periodic measurement of the concentration of pollutants by manual methods shall be evaluated as the mean value for the period of the collection of the sample expressed after conversion to specified conditions, and the weighted average of these values for the entire measurement.

(5) A periodic measurement of the concentration of pollutants with devices for continuous measurement shall be evaluated as the mean value for each 30 minutes of measurement expressed after conversion to specified conditions and as the arithmetic average of these values for the entire measurement.

(6) A periodic measurement of the concentration of carbon dioxide or nitrogen oxides carried out by means of devices with electrochemical sensors at a source with boilers, each with a nominal output lower than 5 MW, burning exclusively light heating oil, natural gas or LPG fuel shall be evaluated as the mean value for each 15 minutes of the measurement while the boiler burner is in operation expressed after conversion to specified conditions and as the arithmetic average of these values for the entire measurement.

(7) On the basis of the results of a periodic measurement, the specific production emission of the pollutant, or specified groups of pollutants, is appointed. The sum of the specific production emission and the number of units of the relative quantity achieved in the course of the calendar year is used to calculate the annual mass flow rate (annual emission) of the pollutant.

## § 11

### **Continuous Measurement**

(1) A continuous measurement is carried out in the case of very large and large of sources in those cases where the compliance with the emission limit is achieved by means of the adjustment of a technological control production process or by the use of a equipment for the cleaning of waste gas. The provisions of § 8, paragraph 1 are not hereby affected.

(2) At sources specified in paragraph 1, continuous measurement is used to determine the compliance with the emission limit only in the case of a pollutant which annual mass flow rate, at the maximum projected output of the source and with a mass concentration of the pollutant corresponding to the emission limit, exceeds

- a) 200 t of particulate matter,
- b) 1000 t of sulphur dioxide,
- c) 4 t of chlorine and its gaseous inorganic compounds of chlorine expressed as chlorine,
- d) 10 t of volatile organic compounds expressed as total organic carbon,

- e) 200 t of nitrogen oxide (NO<sub>x</sub>) expressed as nitrogen dioxide (NO<sub>2</sub>),
- f) 1 t of hydrogen sulphide,
- g) 2 t of gaseous inorganic compounds of fluorine expressed as fluorine, or
- h) 50 t of carbon dioxide.

(3) The duty of continuous measurement is regulated differently from the provisions of paragraphs 1 and 2 in the case of nominally determined sources specified in a special legal regulation<sup>1</sup>) and in § 17.

(4) Together with the values of concentrations of pollutants, the value of the volume flow rate of waste gas, pressure and temperature, the concentration of oxygen and other gaseous substances is continuously measured if required for a comparison with the emission limit and for a specification of the emission mass flow rate. At the same time humidity is measured; this may also be determined by resources for periodic measurements.

(5) The data determined by continuous measurement are protected against alteration and are provided in the form specified in § 12.

(6) Analytical methods of continuous measurement and technical requirements regarding emission measuring systems are specified in Annex No 6 to this Decree. Technical requirements in the corresponding scope and relating to the method used must also be fulfilled by devices for the measurement of actual, comparative and relative quantities.

(7) For measurements an emission measuring system is used which is able to set the mass concentration of pollutants at least in an interval between 10% and 250% of the emission limit.

(8) The maintenance of the emission measuring system and the safeguarding of the correctness of the functioning of devices is carried out in accordance with § 11, paragraph 1, letter j) of the Act by means of the process and in the time limits which are set by the manufacturer of the facility. The principles of activities and the time limits are stipulated in the source's operating rules.

(9) Devices used in the scope of the emission measuring system must be regularly calibrated in accordance with the requirements of a special legal regulation.<sup>4</sup>) The correctness of information from continuous measurements is verified by a periodic measurement carried out by an authorized person at least once per year and on each significant intervention in the emission measuring system or in the technological process or on a significant change in processed raw materials or burned fuel, such being within 3 months of the occurrence of any of the specified changes.

## § 12

### **Evaluating a Continuous Measurement**

(1) The following procedure is used during an evaluation of a continuous measurement:

- a) values measured in intervals not shorter than one minute are used to calculate the minute-minute mean value of the concentration of the relevant pollutant under set actual and relative conditions. The arithmetic average of one-minute mean values recorded for a period of at least 20 minutes out of the monitored thirty-minute interval is considered to be the thirty-minute mean value,
- b) the thirty-minute mean value is classified by means of a computer into at least 20 classes, into which an interval from zero to double the emission limit shall be distributed, such being beginning with the first day of the calendar year or the first day of the commencement of the operation. Any transgression of 1.2 times and double the emission limit is recorded in particular,
- c) the average daily mean value of the concentration of the pollutant and is calculated out of the thirty-minute mean values and is compared with the value of the emission limit; any transgression is recorded.

(2) Values measured and calculated under paragraph 1 must be accessible at any time, output from them is processed daily. On the last day of the calendar year the aggregate output for the calendar year is processed, which must be filed in documentary form as output printed product. The daily output is stored on an electronic carrier and must be printed in cases where transgression values are documented in accordance with paragraph 3, letters b) and c).

(3) During the use of the continuous measurement of emissions, the emission limit is considered to be observed if the following conditions are also fulfilled in the course of the calendar year:

- a) the annual average of the daily mean values is lower than the value of the emission limit,
- b) 95% of all thirty-minute mean values are lower than 120% of the value of the emission limit,
- c) all thirty-minute mean values are lower than double the value of the emission limit,
- d) for very large combustion sources with a nominal heat output of 50 MW or higher, none of the monthly mean values shall exceed the emission limit, and for sulphur dioxide and particulate matter 97% and for nitrogen oxides 95% of all forty-eight-hour mean values shall not exceed 110% of the emission limit. The forty-eight-hour mean value shall mean the arithmetic average of two valid consecutive daily mean values. For a calculation of the forty-eight-hour mean value the daily mean values beginning with 1 January and ending 31 December of the calendar year are used; for a calculation of the forty-eight-hour mean value, any of the days in the year may be used only once. Isolated daily averages in the course of the year are not added together for the calculation of the forty-eight-hour mean value.

(4) During an evaluation of the compliance with the emission limit, breakdowns in the continuous measurement are not taken into account if they do not exceed 5% of the total operating period of the source of pollution in a calendar year.

(5) Information determined when the facilities at a source of pollution were being put into operation, during downtime periods, or during the time required for the elimination of breakdown or accidents is not included in the values decisive for an assessment of the

compliance with the emission limit. The duration of the permissible period for these situations must be specified in operating rules.

(6) An evaluation of the continuous measurement for certain sources is carried out differently from the process under paragraphs 1 to 5, if this is expressly specified in a special legal regulation.<sup>1)</sup>

(7) During an evaluation of the continuous measurement of the flow rate (the volume flow rate) of waste gas the following process is used:

- a) the minute-minute mean value of the volume flow rate of waste gas under specified actual and relative conditions is calculated from values measured in intervals not shorter than one minute. The arithmetic average of one-minute mean values recorded for a period of at least 20 minutes out of the monitored thirty-minute interval is considered to be the thirty-minute mean value
- b) the total volume of waste gas under specified actual and relative conditions discharged into the air per day is calculated from the thirty-minute mean values of the volume flow rate of waste gas and the daily period of operation of the source.

(8) The annual emission of a pollutant or set group of pollutants is established on the basis of the results of continuous measurement as the sum of the resultant values under paragraph 1, letter c) and paragraph 7, letter b).

### § 13

#### **Calculation of the Quantity of Discharged Pollutants**

(1) Emissions are established by calculation in the cases specified in § 7, paragraph 10, such being

- a) by the balance of the technological process as the difference between the mass flow rates of a pollutant entering the process and the mass flow rates of a pollutant exiting the process by ways other than emissions into the air and contained in a product with regard to their chemical and physical changes in the process, or
- b) by the use of emission factors as the sum of an emission factor specified for the corresponding group of sources in Annex No 4 to this Decree or in a special legal regulation<sup>1)</sup> and of the number of units of the relevant relative quantity at the source in the required time section. For sources which do not have an emission factor established, it is not possible to use this process.

(2) In the case of sources, to which paragraph 1 does not relate, provided that the Ministry so appoints the quantity of discharged pollutants which is the subject of information retrieval under § 37 of the Act , and therefore it is reported in the aggregate operating records, such being

- a) by the use of emission factors as the product of the emission factor specified for the corresponding group of sources in Annex No 4 to this Decree or in a special legal

regulation<sup>1</sup>) and the number of units of the relevant relative quantity at the source in the required time section. For sources which do not have an emission factor established, it is not possible to use this process,

- b) by the use of the specific production emission specified by the air protection authority for a given source of pollutants.

#### § 14

### **Measurements of the Darkness of Smoke**

The measurement of the darkness of smoke is carried out by the method according to Ringelmann or Bacharach. The process and requirements for measurement in accordance with these methods are stipulated in Annex No 11 to this Decree.

#### § 15

### **Measurement of Emissions of Odorous Substances**

(1) In the case of selected sources specified in Annex No 8 to this Decree or in a special legal regulation,<sup>1</sup>) whereby emission limits for odorous substances are set, the authorized measurement of emissions of odorous substances is carried out within 4 years as of the date of effect hereof. In the case of operations with seasonal or cyclical fluctuations of odour intensity the measurement is carried out in a period when the odour is intensive.

(2) The measurement of emissions of odorous substances is carried out by means of the measurement of odorous units using the olfactometric method, whereby samples of waste gases are collected directly at the stack or exit or outlet of the emission reduction equipment of a source.

(3) The measurement of emissions of odorous substances for the assessment of an odour by means of a measurement in the odour trace of a source at a maximum distance of the border of the piece of land where it is located is carried out by means of a measurement of odorous units via the olfactometric method. The method for the collection of samples is specified in Annex No 7 to this Decree.

(4) If a source fulfils the emission limit but the odour is so unpleasant in its nature that it causes a nuisance to the population and subsequently gives rise to rightful complaints from citizens, the operator fulfils the immission limit for odour nuisance established in paragraph 6. To establish the actual condition the operator cooperates in accordance with the instructions of the air protection authority during the statistical evaluation of levels of odour nuisance.

(5) The olfactometric method for the measurement of odorous units is specified in Annex No 7 to this Decree.

(6) The immission limit for odour nuisance (the permissible level of odour nuisance) is exceeded if the odour is perceived as causing a nuisance to more than 5% of the monitored population living in towns selected by random selection after more than 2% of the monitored period in the case of periodical monitoring and to more than 15% of the monitored population



living in rural areas selected by random selection after more than 10% of a monitored period. The frequency of the determination is evaluated statistically and includes representative dispersion conditions. In the event of a periodic measurement of odour nuisance the concentration of odorous substances must not exceed 3 odour units.

(7) For an assessment of the level of air pollution due to odorous substances in the external air and the level of odour nuisance, the method of a periodic olfactometric measurement, twenty-four-hour short-term monitoring of odour, short-term several-day monitoring of odour, or long-term monitoring of odour (Annex No 7 to this Decree) is applied.

(8) Odour units are determined from the results of a periodic measurement under paragraph 7 and at the same time the source of the odour is identified, unless it has already been identified. A periodic measurement is carried out in the event of the required identification of a source of emissions of odorous substances or as a supplementary measurement for a statistical evaluation of the level of odour nuisance from all sources of odour.

(9) In the case of small sources of air pollution, twenty-four-hour short-term monitoring is carried out for a period of one month.

(10) A short-term or long-term statistical evaluation of the level of odour nuisance in accordance with standards CSN 835030 and CSN 835031 (Annex No 7 to this Decree) is carried out for the purpose of determining the anticipated immission load on the territory by odorous substances in the case of a medium-sized, large or very large source of air pollution emitting odorous substances.

(11) The methods specified in paragraphs 9 and 10 are based on a subjective determination of the level of odour nuisance to the population.

(12) An area in which a statistical evaluation is carried out is appointed so that it includes the source of emissions of odorous substances as its focal point as well as the most distant location away from the source which is recorded in the list of complaints received about a given odour in accordance with a special legal regulation<sup>5)</sup> and which for this purpose is the permanent address of the plaintiff. The area will be bordered with an unbroken curve essentially convex in shape. During the specification of areas, local meteorological conditions will be taken into account.

(13) An area of monitoring under paragraph 12 is appointed by a regional authority with delegated competence, which will carry out an evaluation of the levels of odour nuisance in cases of very large, large or medium-sized sources of air pollution, or by a municipal institution with delegated competence in the case of small sources.

## § 16

### Measurements of Asbestos Emissions

(1) Measurements are used to monitor asbestos fibres of a length greater than 5 micrometers, with a diameter of less than 3 micrometers and with a ratio of fibre length to fibre diameter higher than 3 : 1.

(2) The collection of a sample for determination of the number of asbestos fibres is carried out in a manner identical to the collection of a sample for determination of the particulate matter in accordance with relevant technical standards for measurement of emissions and the conditions specified in a decision from air protection authorities.

(3) The membrane filtering material used for trapping asbestos fibres must have a smooth surface (must not contain fibres), a defined porosity, and must fulfil the terms and conditions for subsequent microscopic analysis.

(4) A specification of asbestos fibres in collected samples is carried out by the method of optical microscopy for a number of fibres greater than  $3 \cdot 10^5 \text{ m}^{-3}$  and by the method of electron microscopy for a number of fibres lower than  $3 \cdot 10^5 \text{ m}^{-3}$  in accordance with technical standards for the measurement of emissions and the conditions specified in a decision from air protection authorities.

## § 17

### Measurement for Nominally Determined Sources

(1) Nominally specified sources are

- a) sources burning fossil fuel in power stations, heat stations, gas works and in industrial boilers with a nominal heat output of more than 50 MW,
- b) facilities for the roasting or sintering (agglomeration) of metal ores (including sulphide) with a capacity of more than 150 t of agglomerate daily for iron ores or concentrate and more than 30 t of agglomerate daily for the roasting of ores of copper, lead or zinc or any processing ores of gold and mercury,
- c) facilities for the production of pig iron or steel (primary or secondary smelting, including electric arc furnaces) including continuous casting with a capacity of more than 2.5 t/hour,
- d) foundries of ferrous metals with a production capacity of more than 20 t/day,
- e) facilities for the production of copper, lead and zinc from ores, concentrates or secondary raw materials by means of metallurgical processes with a capacity of more than 30 t of metal daily for primary facilities and 15 t of metal daily for secondary facilities or for any primary production of mercury,
- f) facilities for smelting (especially refinement, foundry casting) including the production of alloys of copper, lead, aluminium and zinc, including regenerated products, with a smelting capacity of more than 4 t/day for lead or 20 t/day for copper, aluminium and zinc,

- g) facilities for the production of cement clinker in rotary furnaces with a production capacity of more than 500 t/day or in other furnaces with a production capacity of more than 50 t/day.

(2) At these sources, the following are determined by a periodic measurement without consideration for § 9, paragraph 4 of the Act

- a) emissions of heavy metals, such being cadmium and compounds thereof expressed as cadmium (Cd), mercury and compounds thereof expressed as mercury (Hg), lead and compounds thereof expressed as lead (Pb), arsenic and compounds thereof expressed as arsenic (As),
- b) emissions of polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF), such being individual toxic congeners in the scope under Annex No 1 to this Decree. Toxicity is expressed by the equivalent quantity of 2,3,7,8 TCDD (TEQ). The quantity is appointed as the sum of equivalent quantities of the above-mentioned toxic congeners calculated as the sum of the analytically specified concentration of an individual toxic congener and the relevant factor of equivalent toxicity (ITEF) in accordance with Annex No 1 to this Decree,
- c) emissions polychlorinated biphenyls (PCB), such being individual toxic congeners in the scope of Annex No 1 to this Decree. Emissions are expressed as the total mass of specified toxic congeners,
- d) emissions of polycyclical aromatic hydrocarbons (PAH), such being fluoranthene, pyrene, benzo[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3,c,d]pyrene, dibenzo[ah]anthracene, benzo[g,h,i]perylene.

(3) At sources for the production of limestone and cement and for the processing of magnesite continuous or periodic measurement is carried out, without affecting the provisions of paragraph 1, letter g) and paragraph 2, as follows

- a) during the firing of limestone, cement clinker and magnesite, emissions of particulate matter, nitrogen oxides (converted to nitrogen dioxide) and sulphur dioxide are determined by the continuous measurement of each of these substances, provided that the mass flow rate of the emission exceeds 15 kg/h; the functioning of the separators of particulate matter must be continuously monitored,
- b) in the case of shaft furnaces with internal heating, emissions of particulate matter, nitrogen oxides (converted to nitrogen dioxide) and sulphur dioxide are determined by periodic measurement so that the values of mass flow rates of emissions corresponding to the entire charging cycle are acquired,
- c) in the case of grinding facilities and coolers during the production of limestone, cement and the processing of magnesite, the emission of particulate matter is determined by continuous measurement, provided that the mass flow rate of the emission exceeds 15 kg/h. The functioning of separators is, however, continuously monitored and recorded,
- d) on the basis of permission from the Inspection it is possible to refrain from the continuous measurement of the emission of sulphur dioxide in accordance with letter a) provided that the mass concentration of sulphur dioxide determined from the

material balance and verified by a periodic measurement is lower than 50% of the value of the emission limit,

- e) the operator determines the annual emission of carbon dioxide, reported in the aggregate operating records.

(4) The periodic measurement of pollutants under paragraph 2 is carried out during the ordinary operating output of a source when the source is first put into operation and then once every 3 calendar years or after each change of fuel or raw material above the framework of the approved operating rules or after each significant and long-lasting intervention in the structure or equipment of a source, such being within 6 months of the occurrence of one of the above-mentioned circumstances. In terms of the determination of emissions of other pollutants, other provisions of Title III hereof and § 9 of the Act are not hereby affected.

(5) In the case of the production of titanate oxide including related products, in the vicinity of the source a representative uninterrupted verification of immission concentrations of particulate matter and sulphur dioxide, if a sulphate process is applied, or chlorine during the use of a chlorine process, must be carried out. The provisions of a special legal regulation are not hereby affected.<sup>1)</sup>

## § 18

### **Report on Authorized Measurement, Conclusions of Dispersion Studies and Expert Opinions**

(1) The authorized person processes a report on the performance of measurements of emissions, the specification of odorous units, levels of odour nuisance, actual and relative quantities, verification of the correctness of the continuous measurement of pollutants, the measurement of the effectiveness of the combustion process in the case of small incineration sources, and inspection of the state of combustion product routes in accordance with a special legal regulation<sup>1)</sup>. Requirements regarding the content of the report are stipulated in Annex Nos 12 and 15 to this Decree.

(2) The report is drawn up by a person with authorization under § 15 of the Act. A copy of the report is passed on to the operator of the stationary source and to the Inspection, and in the case of a report in accordance with Annex No 15 to this Decree to a municipal institution and to a delegated legal person. The report contains an evaluation of the results of the measurement in accordance with point 6 of Annex No 12 to this Decree. A comparison of the results of the measurement is given in the report as a separate section processed in accordance with the syllabus passed on to authorized persons by the Inspection.

(3) In addition to his first name, surname, address (in the case of a legal person its name, form, registered office), his signature in his own hand (the signature of the responsible representative) and the scope of authorization, the authorized person also adds the date and the reference number of the related issued certificate to processed measuring reports, dispersion studies, opinions or operating documentation.

(4) The conclusions of an expert opinion under § 17, paragraph 5 of the Act must contain, if it recommends the issue of authorization for the relevant application, a clear and duly justified expression of the authorized person that the solution used fulfils the requirements of the Act and that, in the case of the construction of new sources or the modernization or expansion of sources already in operation, the best available equipment or technology under economically and technically acceptable conditions as set forth in § 2, paragraph 1, letter o) of the Act have been selected for its implementation.

(5) The conclusions of the dispersion study under § 17, paragraph 5 of the Act must contain, if it recommends the issue of authorization for the relevant application, a clear and duly justified expression of the authorized person that the solution used contains the solution most expedient from the aspect of air protection and fulfils the requirements under § 6, paragraphs 1 and 7 and § 7, paragraph 9 of the Act, and that there can be no transgression of immission limits as a result of the construction of the source and its putting into operation.

#### **TITLE IV**

### **TERMS AND CONDITIONS FOR THE GRANTING OF AUTHORIZATION TO PERSONS, ELIGIBILITY REQUIREMENTS AND THE AUTHORIZATION CERTIFICATE**

(regarding § 15, paragraph 14 of the Act)

#### **§ 19**

#### **Terms and Conditions for the Granting of Authorization**

(1) The institution which awards authorization certificates is the Ministry, which sets up an authorization commission and, in the framework of this commission, a testing commission for individual types of authorized activities according to § 15, paragraph 1 of the Act.

(2) The Ministry assesses all presented documents relevant according to the type of authorization under § 15, paragraphs 3 to 6 of the Act and the scope of knowledge under paragraph 3. When granting authorization, the following are assessed in particular:

- a) measurement quality assurance system on the basis of a presented document according to § 15, paragraph 3, letter i) of the Act,
- b) the metrological connection of measuring devices according to § 15, paragraph 3, letter i) of the Act on the basis of presented calibration certificates for measuring devices in accordance with a special legal regulation,<sup>4)</sup> a list of reference materials and standards used by the applicant, including their metrological characteristics,
- c) a quality assurance/quality control manual presented in accordance with § 15, paragraph 3, letter h) of the Act including the circumstances specified therein.

During the verification of the circumstances given in the application, where necessary, the documentation of the Inspection is used.

(3) The scope of knowledge (§ 15, paragraphs 7 and 8 of the Act) conditioning the issue of an authorization certificate by the Ministry is demonstrated:

- a) by presenting the document on education in the relevant area and by the evidencing of the relevant length of experience of the applicant or responsible representative of the applicant for authorization; if the applicant or his responsible representative is unable to evidence the necessary length of experience, but meets all other requirements, the authorization commission may make an exception; in this case the authorization certificate will be issued for a period of not longer than one year,
- b) by the production of documents not older than 4 years on the successful completion of an expert course under § 20 intended for persons who will make a direct contribution to the collection of samples and measurement at the source [§ 15, paragraph 3, letter c) of the Act],
- c) by an examination of the applicant or responsible representative of the applicant under paragraph 4.

(4) The knowledge of applicants is tested by an examination in front of the testing commission. The testing commission has an odd number of members, at least five.

(5) The testing commission is composed of a chairperson and other members. The dates of the examination, the scope of knowledge required, and uniform test rules will be announced to applicants in writing.

(6) Each applicant who submits an application for authorization, fulfils the requirements under § 15, paragraphs 3 to 6 of the Act relevant for the type authorization, and has full legal capacity, will be invited to an examination.

(7) Rights and duties of the testing commission, and the method for conducting and evaluating an examination, are regulated by the testing rules issued by the Ministry.

(8) The commission verbally announces the result of the examination to the applicant on the day of the examination.

(9) An authorized person who submits an application for the renewal of the validity of an authorization certificate under § 15, paragraph 10 of the Act, encloses the following with the documents in accordance with the type of authorized activities:

- a) at least five reports on authorized measurements issued by the person in the period since the granting of the current authorization certificate, or
- b) at least four dispersion studies issued by the person in the period since the granting of the current authorization certificate, or
- c) at least four expert opinions issued by the person in the period since the granting of the current authorization certificate.

(10) If an authorized person submits an application in accordance with § 15, paragraph 10 of the Act after the expiry of the validity of the current authorization certificate, this submission

will be accepted as an application for a new authorization. The force of paragraph 9 is not hereby affected.

§ 20  
**Expert Course**

(1) An expert course to ensure the requirements under § 15, paragraph 3, letter c) and paragraph 4 of the Act is considered to be a course recognized by the Ministry. The syllabus, programme and final written tests of an expert course are approved by the Ministry, which appoints criteria to determine successfulness in the final test. Part of the syllabuses and programmes is verification of the knowledge of legal regulations regulating the protection of the environment, with consideration for the subject of authorization. The Ministry oversees the expert level of the course and impartiality during the assessment of the successfulness of course completion.

(2) An expert course ends with a written test. The Ministry determines the criterion to acknowledge the successfulness of a course participant in the test. Certification of successful course completion is issued by the organizer of the expert course.

§ 21  
**Authorization Certificate**

(1) An authorization certificate, or a negative decision in the matter of an application shall be issued to an applicant within 30 days of completion of the examination under § 19, paragraph 4.

(2) An authorization certificate contains

- a) the first name and surname, permanent address, date of birth and birth registration number of a person who has fulfilled the terms and conditions under paragraph 1, in the case of a natural person, or the name, legal form, registered office, registration number and statutory body, and representative for responsible for the performance of authorized activities, who has passed the test under § 19, paragraph 4, in the case of a legal person,
- b) the reference number and date of issue of the certificate,
- c) a statement of certification, in which the name and scope activities the certificate holder is authorized to perform are specified,
- d) the impression of the Ministry's stamp,
- e) the signatures of the Ministry's authorized representative and of the chairperson of the authorization commission.

(3) A list of authorized persons will be made accessible to the public in the Ministry Bulletin.

(4) If, in the case of an authorized person, there is a change in the persons contributing to measurements, this shall be considered to be a change in information in accordance with § 16, paragraph 4 of the Act.

## **TITLE V**

### **OPERATING RECORDS AND THE PROVISION OF INFORMATION, OPERATING RULES, REPORTING ACCIDENTS AND BREAKDOWNS**

(regarding § 13, paragraph 8 of the Act)

#### § 22

#### **Operating Records and Provision of Information**

(1) Operating records are a record of the operation of a source maintained by the source operator. They are also the basic source of information for the processing of the databases of information systems on stationary sources and their emissions, and for evaluations of the effects of sources on the environment. Information about sources and their emissions is provided in accordance with § 13, paragraph 1 of the Act and is kept in a register of emissions and of sources of air pollution.

(2) Operating records are kept separately for each individual very large, large and medium-sized source. Operating records include records about the aggregate monthly and annual evaluation of operating information maintained for each individual facility at a source and operating information about the source. In the case of a medium-sized combustion source which contains exclusively combustion facilities with a nominal heat output of up to 0.2 MW, the above-mentioned records are kept for the source as a unit.

(3) The following are recorded in operating records:

- a) constant information required to identify an operation and source, and variable information about the operation of facilities and technology, about the quality and consumption of fuel, raw materials and waste, including co-incinerated waste, about production, about facilities to restrict emissions, about emissions and the method and results of the determination of their quantity, and about the operation of measuring devices, such being in the scope specified in Annex Nos 5, 6, 7 and 9 to this Decree,
- b) information about breakdowns, the method for the removal thereof; and information about accidents and the method for the liquidation thereof,
- c) information necessary for keeping registers according to § 26 and 27,
- d) information about the requirements for the fulfilment of the emission reduction scheme, compliance with the specified emission ceiling and about fulfilment of the plan for the implementation of principles of best agricultural practice according to § 5, paragraph 8 of the Act.

(4) The aggregate operating records contain an overview of all constant information and average values of all variable information. The aggregate operating records are processed by operators separately for each operation in accordance with a sample provided by the competent air protection authority each year; these records are forwarded to this authority by the date specified for the fulfilment of the notification duty under § 13, paragraphs 4 and 5 of



the Act. Operating records and connected documents are archived by the source operator for a period of 5 years.

(5) In accordance with § 11, paragraph 1, letter f) of the Act, an operator reports information about the commencement and permanent termination of an operation, including changes in the conditions for the operation of sources, such being within 15 days of the occurrence of these circumstances,

- a) to the Inspection (very large, large and medium-sized sources),
- b) to the competent air protection authority on whose territory the source is located (medium-sized sources).

### § 23

#### **Operating Records for Waste Incineration Plants and Facilities for the Co-incineration of Waste**

The operating records under § 11, paragraph 1, letters e) and f) and § 13 of the Act are kept separately by the operator for each waste incineration plant or co-incineration facility. They include records on the aggregate monthly and annual evaluation of operating information maintained for each individual combustion line, the receipt of waste, the pre-processing of waste on the spot, facilities for the cleaning of waste gases and water and information connected the monitored pollution of the air and water, especially emissions and the mass concentration of pollutants. Records of waste occurring during combustion are maintained in accordance with a special legal regulation.<sup>6)</sup>

### § 24

#### **Reporting and Eliminating Accidents and Breakdowns**

(1) Reporting by an operator on an accident immediately after the discovery thereof, within a maximum of 24 hours, for air protection authorities contains

- a) the name of the facility and a specification of the location and time of the incident, and if known the estimated duration of the accident,
- b) the type of pollutant emissions and their probable quantity, and
- c) measures adopted from the aspect of air protection and in accordance with a special legal regulation<sup>7)</sup> (especially information about whether the accident is resolved with the operator's own resources, by contacting a specific part of the integrated emergency rescue system, whether the source was shut down and other information).

(2) Within 14 days of reporting an accident under paragraph 1, operators draw up and submit to the Inspection a report which, in addition to a summary of all available documentation for a specification of the quantity of pollutants leaked into the air, contains

- a) the name of the facility where the accident occurred,
- b) time information about the incident and the duration of the accident,

- c) the type and quantity of pollutant emissions over the period of the accident,
- d) the cause of the accident,
- e) specific measures adopted to prevent the occurrence of other cases of accidents,
- f) time information about the reporting of an accident to the Inspection.

(3) The operator provides, at the request of the Inspection, supplementary information connected with the occurrence, course, liquidation and consequences of an accident.

(4) In the event of a breakdown, the operator proceeds in accordance with a set of technical and organizational measures specified in the operating rules.

(5) In the event of a breakdown under § 11, paragraph 1, letter g) of the Act, the operator of the combustion source proceeds in accordance with the operating rules so that

- a) the operation of the facility is limited or stopped if fault-free operations are not renewed within 24 hours,
- b) during a breakdown in the operation of an emission reduction facility the total duration of the breakdown of this facility in the operation of a source does not exceed a total of 120 hours per calendar year.

(6) In the case of a very large combustion source, where the predominant fuel is natural gas, the operator may specify in the operating rules, for cases of breakdown due to a sudden interruption in the supply of gas, the possibility of making exceptional use of another fuel, but for a maximum period of ten days.

(7) In the event of breakdowns causing a shortage of energy for supply to the population, the process specified in paragraph 5 is replaced by the process specified in the operating rules of the source operator.

## § 25

### **Operating Rules**

(1) The operators of very large and large sources discuss (§ 11, paragraph 2 of the Act) the wording of the operating rules with the Inspection prior to their permanent operation.

(2) The operators of sources submit proposals for changes to the operating rules immediately after changes occur in the operation of a source or other significant circumstances, but no later than 60 days as of the date of their occurrence.

(3) The content of operating rules is specified in Annex No 10 to this Decree.

## **TITLE VI**

### **REGISTERS OF THE AIR QUALITY INFORMATION SYSTEM, THE RECORD-KEEPING OF SOURCES STEMMING FROM THE LAW, REQUIREMENTS OF AN APPLICATION FOR AN OPINION AND AN APPLICATION FOR PERMIT**

(regarding § 13, paragraph 8 and § 17, paragraph 10 of the Act)

§ 26

**Register of Waste Incineration Plants**

(1) The register of incineration plants and facilities approved for the co-incineration of waste is part of the register of air pollution sources. The operators of waste incineration plants and of sources with the co-incineration of waste, in accordance with a special legal regulation<sup>1)</sup>, maintain information necessary for the register of incineration plants in their operating records and provide this information to air protection authorities in the framework of submitting their aggregate operating records or on request at any time.

(2) Information from the register of incineration plants is made accessible to the public.

(3) The Ministry shall make accessible to the public a list of incineration plants and co-incineration facilities from the register of incineration plants.

§ 27

**Register of Sources Using Solvents**

(1) The register of sources using solvents in accordance with a special legal regulation<sup>1)</sup> is part of the register of air pollution sources. The operators of very large, large and medium-sized specified sources [§ 4, paragraph 4, letter b) point 3 of the Act] maintain information necessary for the register of sources using solvents in their operating records and provide this information to air protection authorities in the framework of submitting aggregate operating records or on request at any time.

(2) Information from the register of sources using solvents is made accessible public.

§ 28

**Register of Substances Affecting the Climatic System of the Earth**

The register of substances affecting the climatic system of the Earth is part of the air quality information system and its information is made accessible to the public.

§ 29

**Records of Sources Applying an Emission Reduction Scheme**

Records of sources applying an emission reduction scheme according to § 5, paragraphs 6 and 7 of the Act are kept by the regional authority in accordance with § 48, paragraph 1, letter d) of the Act. Information necessary for the records is processed by operators in accordance with the corresponding sample provided by the regional institution and is forwarded at the same time as the application to apply an emission reduction scheme.

§ 30

**Records of Sources Applying a Best Agricultural Practice Implementation Plan**

The records of sources applying a best agricultural practice implementation plan according to § 5, paragraph 8 of the Act are kept by the regional authority. Information necessary for the records is processed by source operators in accordance with the corresponding specimen provided by the regional institution and is forwarded at the same time as the application to apply the plan for the implementation of the principles of best agricultural practice.

§ 31

**Records of Small Sources**

(1) The records of small sources subject to the duty of measuring the effectiveness of combustion and to inspections of the condition of combustion product routes according to § 12, paragraph 1, letter f) of the Act are provided by the municipal institution. In this respect it uses information from the records of small sources subject to a fee-paying duty under § 19 of the Act or, in the case of a source with a nominal heat output of up to 50 kW inclusive which is operated in the scope of the operator's business activities, information supplied by the operator thereof on the basis of a written invitation or by means of a person authorized to measure these sources.

(2) The records of small sources discharging emissions of volatile organic compounds are kept by a municipal institution on the basis of an announcement under § 12, paragraph 1, letter c) of the Act.

§ 32

**Requirements of an Application for an Opinion under § 17, Paragraph 1  
Letter a) of the Act and of an Application for Permit  
under § 17, paragraphs 1 and 2 of the Act**

(1) An application for permit or an application for an opinion contains the documents prescribed under § 17 of the Act and the documentation, information and description necessary to establish that

- a) a source is designed, equipped and is or will be operated in a manner which fulfils the provisions of the Act and its implementing legal regulations,
- b) the height of the stack and exits in the case of the proposed construction of a source or of changes thereto is established so that the immission limits in the relevant territory are not exceeded. This fact is demonstrated by a dispersion study in accordance with § 6, paragraph 4,
- c) the process of sampling and measuring set for continuous and periodical periodic measurements of emissions of all relevant substances contaminating the air is adequately specified.

A detailed description of certain requirements relating to an application is given in Annex No 13 to this Decree.

(2) An application also contains

- a) the first name and surname (name and legal form) and address (registered office) of the applicant,
- b) information about hitherto decisions of the relevant administrative authorities in accordance with the Act and in accordance with special legal regulations,
- c) project documentation or other documentation which the applicant is obliged to submit to the building department in the proceedings under § 17, paragraph 1 of the Act,
- d) documentation regarding the application for permit under § 17, paragraph 2 of the Act,
- e) a description of the facility, product or material which is the subject of the application, including a specification of the identification number of the operation in the register of emissions and of sources of pollution, if such a number has been assigned.

(3) An application for permit under § 17, paragraph 1, letters b) to d) and paragraph 2, letter c) or f) of the Act in the case of a waste incineration plant or facilities for the co-incineration of waste contains, in addition to the documents under paragraphs 1 and 2, information evidencing that

- a) the waste incineration plant or co-incineration facilities are designed, equipped and will be operated for a specified category of waste in a manner which fulfils the requirements of a special legal regulation<sup>1)</sup> and of this Decree,
- b) the heat arising during the processes of combustion or co-incineration will be exploited as much as possible,
- c) waste from an incineration plant or co-incineration facilities will be minimized as regards quantity and harmfulness, and where suitable it shall be recycled,
- d) a process has been established for the removal of waste which it is not possible to recycle and where it is not possible prevent their occurrence or reduce their quantity in accordance with a special legal regulation,<sup>8)</sup>
- e) the height of a stack and exits is established so that immission limits in the relevant territory are not exceeded. This fact is demonstrated by a dispersion study in accordance with § 17, paragraph 5 of the Act, and
- f) an opinion will be issued by the water supply authority regarding waste water from the cleaning of waste gases, if it occurs.<sup>9)</sup>

(4) An application under paragraph 3 for a waste incineration plant or co-incineration facilities classified in the category of very large sources contains other terms and conditions specified under special legal regulations.<sup>10)</sup>

(5) In an application under paragraph 3 all information is given in such a scope that it forms the basis for the a specification of the following in the permit issued for a waste incineration plant or co-incineration facilities:

- a) the category and types of waste in accordance with a special legal regulation,<sup>10)</sup>
- b) the total nominal operating capacity of the incineration or co-incineration of waste, and

c) a specification of the process of sampling and measurement specified for the periodic measurement of emissions of all relevant substances contaminating air and water.

(6) An permit issued for an incineration plant or co-incineration facilities on the basis of an application under 3 to 5 is granted if the applicant proves that the proposed methods for the measurement of the mass concentration of pollutants in emissions into the air fulfil the requirements of Annex No 3 to a special legal regulation<sup>1)</sup> and of this Decree, and in the case of the measurement of the mass concentration of pollutants in waste water from a facility for the cleaning of waste gases, the requirements of points 1 and 2 of Annex No 3 to a special legal regulation<sup>9)</sup> as approved by the competent water supply authority.

(7) An permit issued for an incineration plant or co-incineration facilities for hazardous waste, in addition to the requirements specified in paragraphs 3 and 4, contains

- a) the quantity of waste, by individual categories, which may be incinerated, and
- b) the permissible minimum and maximum mass flow rate of individual categories of hazardous waste, their minimum and maximum calorific value and their maximum permissible content of pollutants, especially PCB, PCP, chlorine, fluorine, sulphur, and heavy metals.

(8) The validity of permit to locate the construction of a waste incineration plant or co-incineration facilities and permit to build a waste incineration plant or co-incineration facilities terminate

- a) within 3 years as of the date of permit to locate the structure, if, in this time limit, no application for building permission is submitted to the building department,
- b) within 5 years as of the date of building permission, if no application for permit for the putting of facilities into trial or permanent operation is submitted.

(9) Permit to operate a waste incineration plant and co-incineration facilities is issued for a maximum period of 5 years. At the operator's request it is possible to renew the validity of the operating permit for a maximum of 2 years, provided that the operating terms and conditions, from the aspect of air protection have not changed and will not change in the subsequent period.

(10) In cases where a new waste incineration plant or co-incineration facilities are put into operation or after a change in their operation or after the commencement of waste co-incineration in current facilities, permit to operate facilities is issued for a maximum period of 2 years.

(11) The Ministry may, in the Ministry Bulletin, publish a list of types of waste, the co-incineration of which, after fulfilment of the conditions under paragraphs 3 to 8 and on fulfilment of other conditions specified in the permit, is permissible.

(12) The details regarding the content of an application for an opinion and of the permit and regarding the documentation for an opinion and permit are stipulated in Annex No 13 to this Decree.

## **TITLE VII**

### **TRANSITORY AND QUASHING PROVISIONS**

#### **§ 33**

##### **Transitional Provisions**

(1) A continuous measurement carried out at a source in 2002 is carried out and evaluated by means of the process applied until the date of effect hereof.

(2) The first periodic authorized emission measurement after the date of effect hereof shall be carried out by operators, unless a special legal regulation<sup>1)</sup> stipulates to the contrary,

- a) in the case of very large sources by 31 March 2003,
- b) in the case of large sources within 1 calendar year as of the date of effect hereof,
- c) in the case of medium-sized sources , such being boilers incinerating solid, liquid or gaseous fuel with a heat output equal to or higher than 1 MW, and in the case of medium-sized sources where the compliance with emission limits is achieved by an adjustment to the technological control production process or by the use of facilities for the cleaning of waste gas, within 3 years of the last measurement carried out before the date of effect hereof, with the exception of sources where the last measurement has been carried out prior to 1 June 1999 or has not been carried out at all and the operators thereof carry out this measurement by 1 June 2003,
- d) in the case of medium-sized sources not belonging under letter c), within 5 years of the last measurement carried out before the date of effect hereof, with the exception of sources where the last measurement has been carried out prior to 1 June 1997 or has not been carried out at all and the operators thereof carry out this measurement by 1 June 2003.

(3) If the law imposes, in the case of currently operated sources, the duty to change or reprocess operating rules, the operator shall do so by 31 May 2003.

(4) If the law imposes, in the case of currently operated sources, a change in the category of a source, the operator shall do so by 31 December 2002 by means of a written announcement to the competent air protection authority.

(5) Operating records in 2002 are carried out, evaluated and reported by means of the process applied until the date of effect hereof.

(6) At sources operated on or before 30 April 2004, the regional authority shall specify general emission limits in accordance with § 9, paragraph 4 of the Act and in accordance with a special legal regulation<sup>1)</sup> by 30 June 2004.

(7) Beginning on 1 January 2008, applicants for the issue of an accreditation certificate, according to § 19, paragraph 3, must submit, among the required documents, documents on accreditation of the measuring methods used by the applicant for the measurement of emissions in the case of very large, large and medium-sized sources.

§ 34  
**Quashing Provisions**

The following are abrogated:

1. Decree No 614/1992 Sb. regulating the verification of expert eligibility to submit expert opinions in the procedure under the Clean Air Act.
2. Decree No 41/1992 Sb. defining areas requiring separate air protection and appointing principles for the creation and operation of smog regulation systems and some other measures on air protection.
3. Decree No 279/1993 Sb. amending Decree No 41/1992 Sb. defining areas requiring separate air protection and appointing principles for the creation and operation of smog regulation systems and some other measures on air protection.
4. Decree No 122/1995 Sb. appointing emission limits for paint shops with a consumption of more than 10 tonnes paint materials a year.
7. Decree No 117/1997 Sb. establishing emission limits and other terms and conditions for the operation of stationary sources of pollution and air protection.
8. Decree No 97/2000 Sb. amending Decree No 117/1997 Sb. establishing emission limits and other terms and conditions for the operation of stationary sources of pollution and air protection.
9. Annex No 4 of the Measure of the Federal Committee for the Environment of 1 October 1991 to Act No 309/1991 Sb. of 9 July 1991 on the protection of air from pollutants, promulgated in Part No 84/1991/1 Sb, in the wording of the Measure of the Federal Committee for the Environment of 23 June 1992, promulgated in Part 84/1992/1 Sb.

§ 35  
**Effect**

This Decree enters into effect on the date of promulgation hereof.

Minister:  
RNDr. **Kužvart** in his own hand



**Footnotes:**

- 1) Government order No 352/2002 Sb., appointing emission limits and other terms and conditions for the operation combustion stationary air pollution sources.  
Government order No 353/2002 Sb., appointing emission limits and other terms and conditions for the operation of other stationary sources of air pollution.  
Decree No 355/2002 Sb., setting emission limits and other terms and conditions for the operation of other stationary air pollution sources emitting volatile organic compounds from processes applying organic solvents and from the storage and distribution of petrol.  
Government order No 354/2002 Sb., appointing emission limits and other terms and conditions for the incineration of waste.
- 2) Government order No 350/2002 Sb., appointing immission limits and terms and conditions and the method for the monitoring, assessment, evaluation and control of air quality.
- 3) Act No 65/1965 Sb., the Labour Code, in the wording of later regulations.
- 4) Act No 505/1990 Sb., on metrology, in the wording of later regulations.
- 5) Regulation No 150/1958 Ú. l., on the settlement of complaints, announcements and suggestions from workers.
- 6) Act No 185/2001 Sb., on waste and on a change to certain other laws, in the wording of later regulations.
- 7) § 3 and 4 of Act No 239/2000 Sb., on the integrated emergency rescue system and on a change to certain laws.
- 8) § 10, paragraph 1, § 11, 12 and § 16, paragraph 1 of Act No 185/2001 Sb.
- 9) § 18, paragraph 1 of Act No 254/2001 Sb., on water and on a change to certain laws (the Water Act).
- 10) Annex No 1 to Regulation No 381/2001 Sb.

**Annex Nos 1 to 15 to Decree No 356/2002 Sb.**

**Annex No 1 to Decree No 356/2002 Coll.**

**LIST OF POLLUTANTS, THEIR SPECIFIED GROUPS  
AND THEIR GENERAL EMISSION LIMITS**

All general emission limits specified in this Annex apply to the concentration in moist gas under normal conditions (pressure of 101.325 kPa and temperature of °C). A code list of pollutants has been prepared for the requirements of the operating records of sources (§ 13, paragraph 8 of the Act) and records on the consumption of volatile organic compounds (§ 12, paragraph 5 of the Act).

**Basic pollutants and their specified groups**

- 1.1 particulate matter (PM)
  - 1.1.1 particles of a size of less than 10 µm (PM 10)
  - 1.1.2 particles of a size of less than 2.5 µm (PM 2.5)
- 1.2 inorganic oxygenic compounds of sulphur expressed as sulphur dioxide (sulphur dioxide)
  - 1.2.1 sulphur dioxide and sulphur trioxide (SO<sub>x</sub>)
  - 1.2.2 sulphur dioxide (SO<sub>2</sub>)
- 1.3 inorganic oxygenic compounds of nitrogen expressed as nitrogen dioxide (nitrogen oxides)
  - 1.3.1 nitric oxide and nitrogen dioxide expressed as nitrogen dioxide (NO<sub>2</sub>)
- 1.4 carbon dioxide (CO)
- 1.5 organic compounds (OC) expressed as total organic carbon (TOC)
  - 1.5.1 total volatile organic compounds (VOC) expressed as total organic carbon (TOC)
    - 1.5.1.1 organic solvents expressed by the total mass of their annual consumption by balance
  - 1.5.2 hydrocarbons expressed as total organic carbon (TOC)
- 1.6 ammonia and ammonium salts expressed as ammonia (NH<sub>3</sub>),
  - 1.6.1 ammonia
- 1.7 methane (CH<sub>4</sub>)

**General emission limits for basic pollutants or their specified groups**

Number of pollutant or specified group	Remarks
1.1	General emission limit and other terms and conditions regarding the application thereof: General emission limits for substances specified under points 1.1.1 and 1.1.2 not set Sources of pollution must be established and operated so that during a mass flow rate of particulate matter of 2.5 kg/h or less, the mass concentration of particulate matter in waste gas does not exceed a value of 200 mg/m <sup>3</sup> . With a mass flow rate of particulate matter higher than 2.5 kg/h the mass concentration of particulate matter in waste gas must not exceed a value of 150 mg/m <sup>3</sup> .

Number of pollutant specified group	Remarks
1.2	General emission limit and other terms and conditions regarding the application thereof:
1.2.1	Air pollution sources are established and operated so that with the mass flow rate of all those substances higher than 20 kg/h, the mass concentration of sulphur dioxide in waste gas does not exceed a value of 2500 mg/m <sup>3</sup> . The values of the mass flow rate and mass concentration are expressed as sulphur dioxide.
1.2.2	Air pollution sources are established and operated so that with a mass flow rate of substances higher than 20 kg/h, the mass concentration of sulphur dioxide in waste gas does not exceed a value of 2500 mg/m <sup>3</sup> .
1.3.	Sources of pollution are established and operated so that with a mass flow rate of all those substances higher than 10 kg/h, the mass concentration of nitrogen dioxide in waste gas does not exceed a value of 500 mg/m <sup>3</sup> . The values of the mass flow rate and mass concentration are expressed as nitrogen dioxide.
1.3.1	Sources of pollution are established and operated so that with a mass flow rate of both nitrogen oxides higher than 10 kg/h, the mass concentration in waste gas does not exceed a value of 500 mg/m <sup>3</sup> . The values of the mass flow rate and mass concentration of nitrogen oxides are expressed as nitrogen dioxide.
1.4	Sources of pollution are established and operated so that with a mass flow rate carbon dioxide higher than 5 kg/h, the mass concentration of carbon dioxide in waste gas does not exceed a value of 800 mg/m <sup>3</sup> .
1.5 <sup>a)</sup>	General emission limits for specified groups of substances specified under points 1.5.1, 1.5.1.1 and 1.5.2 are not set. General limits for individual pollutants or their groups are specified in points 3, 4, 5, 6 and 7. A general emission limit of 50 mg/m <sup>3</sup> applies to the total mass concentration of these substances.
1.6	With a mass flow rate of emissions of all these pollutants higher than 500 g/h, an aggregate mass concentration of 50 mg/m <sup>3</sup> of all these pollutants in waste gas must not be exceeded.

Number of pollutant specified group	or	Remarks
		General emission limit and other terms and conditions regarding the application thereof: With a mass flow rate of emissions of a pollutant higher than 500 g/h, an aggregate mass concentration of 50 mg/m <sup>3</sup> of all these pollutants in waste gas must not be exceeded.
1.7		General emission limit not yet specified. Will be announced once three years have passed since the date of effect of this Decree.

a) Emissions are given in cases where no specific or general emission limit for individual organic compounds specified in paragraphs 3, 4, 5, 6 and 7 is set.

## 2. Asbestos and heavy metals and their inorganic compounds expressed as metal

- 2.1 asbestos
- 2.2 antimony
- 2.3 arsenic
- 2.4 beryllium
- 2.5 tin
- 2.6 chromium
- 2.7 cadmium
- 2.8 cobalt
- 2.9 manganese
- 2.10 copper
- 2.11 nickel
- 2.12 lead
- 2.13 mercury
- 2.14 selenium
- 2.15 tellurium
- 2.16 thallium
- 2.17 vanadium
- 2.18 zinc
- 2.19 group of pollutants including asbestos, beryllium, cadmium, mercury, thallium
- 2.20 group of metals including arsenic, cobalt, nickel, selenium, tellurium, hexavalent chromium
- 2.21 group of metals including tin, chromium other than hexavalent, manganese, copper, lead, vanadium, zinc
- 2.22 group of metals including lead, antimony, manganese, vanadium, tin, copper (glass production)
- 2.23 group of metals including cobalt, nickel, chromium, arsenic, cadmium, selenium (glass production)
- 2.24 group of metals including cadmium, thallium (combustion waste)
- 2.25 group of metals including antimony, arsenic, lead, chromium, cobalt, copper, manganese, nickel, vanadium (combustion waste)
- 2.26 group of metals including chromium, copper, vanadium (combustion of waste oils)
- 2.27 group of metals including lead, chromium, copper, manganese (municipal waste incineration plant)

- 2.28 group of metals including nickel, arsenic (municipal waste incineration plant)
- 2.29 group of metals including cadmium, mercury, thallium (municipal and “hospital” waste incineration plant)
- 2.30 group of metals including lead, copper, manganese (“hospital” waste incineration plant)
- 2.31 group of metals including nickel, arsenic, chromium, cobalt (“hospital” waste incineration plant)

**General emission limits for asbestos and heavy metals and their inorganic compounds expressed as metal**

Number of pollutant or specified group	Remarks
2.1	<p>The demolition of buildings structures and installations containing asbestos, and the elimination of asbestos or materials containing asbestos from them, which could lead to the release of asbestos fibres or dust, must be carried out in an isolated environment, the premises of which are separate from the external atmosphere. The transportation and storage of waste containing asbestos fibres or dust must be secured so that they are not released into the air. Waste containing asbestos fibres or dust must be stored only in landfills thus specified, where permanent prevention of the leakage of asbestos into the external atmosphere is ensured.</p> <p>With a mass flow rate of emissions of asbestos higher than 0.5 g/h, a mass concentration of 0.1 mg/m<sup>3</sup> of asbestos in substances in waste gas must not be exceeded. With a mass flow rate of emissions of asbestos of 0.5 g/h or lower, and provided that the flow rate of waste gas is also lower than 5000 m<sup>3</sup>/hour, a general emission limit for the specified group of 2.19 shall be applied. If methods of counting fibres are used to determine the concentration of asbestos, a conversion factor shall apply stipulating that 2,000,000 defined asbestos fibres in a volume of 1 m<sup>3</sup> corresponds to a mass concentration of 0.1 mg/m<sup>3</sup>. This emission limit applies to a concentration determined at a stack, exit or outlet from emission reduction equipment at a source where asbestos or products containing asbestos are processed. At these sources, as a matter of principle asbestos emission reduction equipment must be installed. In the vicinity of sources where the activities specified in the note are carried out, an emission limit shall apply for fugitive emissions of 1,000 defined asbestos fibres in a volume of 1 m<sup>3</sup> measured at a point on the border of the land where the source is located.</p>
2.3 and 2.4	<p>The general emission limit for the specified group of substances specified under point 2.20 shall apply.</p>
2.2 and 2.5 to 2.18	<p>General emission limits not set.</p>
2.19	<p>With a mass flow rate of emissions of all these pollutants higher than 1 g/h, an aggregate mass concentration of 0.2 mg/m<sup>3</sup> of these pollutants in waste gas must not be exceeded.</p>

Number of pollutant specified group	Remarks	
	of	or
		General emission limit and other terms and conditions for the application thereof:
2.20		With a mass flow rate of emissions of all these pollutants higher than 10 g/h, an aggregate mass concentration of 2 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
2.21		With a mass flow rate of emissions of all these pollutants higher than 50 g/h, an aggregate mass concentration of 5 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
2.21 – 2.31		General emission limits not set.

### 3. Persistent organic pollutants (POP)

- 3.1 Total polychlorinated dibenzodioxins (PCDD) and dibenzofurans (PCDF), reported in equivalents of toxicity (I-TEQ) 2,3,7,8 – TCDD
  - 3.1.1 polychlorinated dibenzodioxins (PCDD)
  - 3.1.2 polychlorinated dibenzofurans (PCDF)
- 3.2 Total polycyclic aromatic hydrocarbons (PAH)
  - 3.2.1 fluoranthene
  - 3.2.2 pyrene
  - 3.2.3 chrysene
  - 3.2.4 benzo[b]fluoranthene
  - 3.2.5 benzo[k]fluoranthene
  - 3.2.6 benzo[a]pyrene
  - 3.2.7 benzo[g,h,i]perylene
  - 3.2.8 indeno[1,2,3, - s, d]pyrene
  - 3.2.9 benzo[a]anthracene
  - 3.2.10 dibenzo[a, h]anthracene
- 3.3 Total polychlorinated biphenyls (PCB)
  - 3.3.1 total tetraCB IUPAC No.77 + tetraCB IUPAC No. 81 + pentaCB IUPAC No. 126 + hexaCB IUPAC No. 169
  - 3.3.2 pentaCB IUPAC No. 118 + IUPAC No. 105 + IUPAC No.123 + IUPAC 114 + hexaCB
  - 3.3.3 total IUPAC No.156 + IUPAC No.157 + IUPAC No.167 + heptaCB IUPAC No.189
  - 3.3.4 total other polychlorinated biphenyls
- 3.4 other chlorinated persistent organic pollutants
  - 3.4.1 hexachlorocyclohexan
  - 3.4.2 tetrachlorophenol
  - 3.4.3 hexachlorbenzene
  - 3.4.4 trichlorbenzene

### General emission limits for persistent organic pollutants (POP)

Number	of	Remarks
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	General emission limit and other terms and conditions for the application thereof:
3.1	A general emission limit of 0.1 ng TEQ/m <sup>3</sup> shall apply for the total mass concentration of these substances.
3.2	A general emission limit of 0.2 mg/m <sup>3</sup> shall apply for the total mass concentration of these substances.
3.3	Where there is an incidence of emissions a total mass concentration of these pollutants of 0.2 mg TEQ/m <sup>3</sup> after conversion to standard conditions must not be exceeded. In the shortest possible time it is necessary to eliminate these substances from emissions into the external atmosphere.
3.4	A total mass concentration of these pollutants of 0.2 mg/m <sup>3</sup> after conversion to standard conditions must not be exceeded. In the shortest possible time it is necessary to eliminate these substances from emissions into the external atmosphere.

References:1) Equivalent of the toxicity of dibenzodioxins and dibenzofurans are specified in paragraph 10 of this Annex

2) Equivalent of the toxicity of polychlorinated biphenyls are specified in paragraph 11, a list thereof is given in paragraph 12 of this Annex.

**4. Organic compounds classified in accordance with Government Order 25/1999 Coll. as carcinogens, mutagens or poisons for the reproduction process (R-phrases R-45, R-46, R-49, R-60 and R-61) not specified in points 1 or 3 of this Annex\***

- 4.1 1,2-dibromethane
- 4.2 1,2-dichlorethane (ethylendichloride)
- 4.3 1,3-butadien\*
- 4.4 2-naphthylamine
- 4.5 acrylonitril (vinylcyanide)
- 4.6 benzene\*
- 4.7 epichlorhydrine (1-chlorine-2,3 epoxy propane)\*
- 4.8 ethylenoxide (oxirane, epoxyethane)\*
- 4.9 hydrazine
- 4.10 nitrosodimethylamine
- 4.11 o-toluidine (2-methylaniline)
- 4.12 propylenoxide (2-methyloxirane)\*
- 4.13 tetrachlormethane\*
- 4.14 toluidines (metatoluidine, paratoluidine)
- 4.15 trichlormethane (chloroform)\*
- 4.16 vinylchloride\*

\*) Explanation:

Substances labelled with an asterisk belong to the specified group 1.5.1 - volatile organic compounds

**General emission limits for pollutants or their specified groups specified in point 4**

Number of the pollutant or specified group	Remarks
4.4	Expressed as total organic carbon With a mass flow rate of emissions higher than 1 g/h, an aggregate mass concentration of 0.2 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
4.1, 4.3, 4.5 to 4.9, 4.12, 4.16	Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 50 g/h, an aggregate mass concentration of 5 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
4.2, 4.9, 4.10, 4.11, 4.14, 4.15	Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 100 g/h, an aggregate mass concentration of 20 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.

**5. Halogenated organic compounds classified in accordance with Government Order 25/1999 Sb, by R phrase R 40 not specified in points 1, 2, 3 or 4. of this Annex\***

- 5.1 1,1-dichlorethylene (vinylidenechloride)
- 5.2 benzylchloride (alfa-chlortoluene)
- 5.3 dichlormethane (methylenchloride)\*
- 5.4 chlorethane (ethylchloride)\*
- 5.5 tetrachlorethylene\*
- 5.6 trichlorethylene\*

\*) Explanation:

Substances labelled \* belong to the specified group 1.5.1 - volatile organic compounds (VOC)

**General emission limits for pollutants or their specified groups specified in point 5**

Number of pollutant or specified group	Remarks
5.1, 5.2, 5.5, 5.6	Expressed as total organic carbon With a total mass flow rate of emissions of these pollutants greater than 100 g/h, a total mass concentration of these pollutants of 20 mg/m <sup>3</sup> after conversion to standard conditions must not be exceeded.
	Expressed as total organic carbon



Number of pollutant specified group	of	Remarks
	or	General emission limit and other terms and conditions for the application thereof:
5.3, 5.4		Expressed as total organic carbon
<b>6. Volatile organic compounds in accordance with the definition specified in § 2, paragraph 1, letter n) of the Act, not specified in points 1, 2, 3, 4 or 5 of this Annex</b>		

- With a mass flow rate of emissions of all these pollutants higher than 3 kg/h, an aggregate mass concentration of 150 mg/m<sup>3</sup> of these pollutants in waste gas must not be exceeded.
- 6.1 1,2-dichlorethylene
  - 6.2 1,4-dichlorbenzene
  - 6.3 2-butanone (ethylmethylketone)
  - 6.4 acetaldehyde (ethanal)
  - 6.5 acetone (2-poilon, dimethylketone)
  - 6.6 acrylic (propene) acid
  - 6.7 benzaldehyde
  - 6.8 butylacetate (butyl octane)
  - 6.9 butylaldehyde (butyraldehyde, butanal)
  - 6.10 dibutylether
  - 6.11 diethylamine
  - 6.12 diethylether (ether)
  - 6.13 dimethylamine
  - 6.14 dimethylether
  - 6.15 ethylacetate (ethyl octane)
  - 6.16 ethylacrylate (ethyl acrylan)
  - 6.17 ethylbenzene
  - 6.18 ethylenglycol (1,2-ethandiol, glycol)
  - 6.19 formaldehyde
  - 6.20 furfural (2-furaldehyde)
  - 6.21 chlorbenzene
  - 6.22 chloroprene (2-chlorine-1,3-butadiene)
  - 6.23 isopropylbenzene (cumene)
  - 6.24 esters acrylic acid nominally not specified under point 6 of this Annex
  - 6.25 methylacetate
  - 6.26 methylacrylate
  - 6.27 methylamine
  - 6.28 methylmethacrylate (methyl methacrylan)
  - 6.29 formic acid
  - 6.30 nitrotoluenes
  - 6.31 acetic acid
  - 6.32 pyridine
  - 6.33 carbon disulphide
  - 6.34 styrene
  - 6.35 toluene
  - 6.36 vinylacetate
  - 6.37 xylenes (dimethylbenzene)

- 6.38 aliphatic and aromatic ethers (number of carbon atoms in molecule 9 or lower) not nominally specified under point 6 of this Annex
- 6.39 aliphatic aldehydes (number of carbon atoms in molecule 8 or lower) not nominally specified under point 6 of this Annex
- 6.40 alkylalcohols (number of carbon atoms in molecule 6 or lower)
- 6.41 alkenes (olefins) with a number of carbon atoms in molecule 11 or lower with the exception of 1.3-butadien and not nominally specified under point 6 of this Annex
- 6.42 paraffin with the exception of methane (number of carbon atoms in molecule 11 or lower)
- 6.43

**General emission limits for pollutants or their specified groups specified in point 6**

Number of pollutant specified group	of or	Remarks
		General emission limit and other terms and conditions for the application thereof:
6.1, 6.4, 6.6, 6.11, 6.13, 6.16, 6.19, 6.24, 6.26, 6.27, 6.29, 6.30, 6.32, 6.33		Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 0.1 kg/h, an aggregate mass concentration of 20 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
6.2, 6.7, 6.9, 6.17, 6.20 to 6.23, 6.25, 6.28, 6.31, 6.34 to 6.37		Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 2 kg/h, an aggregate mass concentration of 100 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
6.3, 6.5, 6.8, 6.10, 6.12, 6.14, 6.15, 6.18, 6.38 to 6.42		Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 3 kg/h, an aggregate mass concentration of 150 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.

**7. Organic compounds and their specified groups not specified in points 1, 2, 3, 4, 5 or 6 of this Annex**

- 7.1 1,1,2,2-tetrachlorethane
- 7.2 1-methylnaphthalene
- 7.3 2-chloropiline (isopropylchloride)
- 7.4 2-methylnaphthalene
- 7.5 4-hydroxy-4-ethyl-2-pentanone
- 7.6 aniline
- 7.7 biphenyl (diphenyl)
- 7.8 diphenylether (diphenyloxyde)
- 7.9 diisopropylether
- 7.10 ethanolamine (2-amineoethanol, colamine)
- 7.11 phenol
- 7.12 phenylhydrazine
- 7.13 cresols

- 7.14 mercaptans
- 7.15 methylester of benzoic acid
- 7.16 naphthalene
- 7.17 nitrobenzene
- 7.18 N-methyl-2-pyrrolidon
- 7.19 tetrachlorethane
- 7.20 4-methyl-2-pentanol
- 7.21 nitrophenols
- 7.22 nitrocresols
- 7.23 nitrocompounds
- 7.24 thioethers
- 7.25 esters of benzoic acid with the exception of methylester
- 7.26 organic compounds of fluorine expressed as F\*\*
- 7.27 organic compounds of chlorine expressed as Cl\*\*
- 7.28 organic compounds of bromine expressed as Br\*\*

\*\*\*) Explanation:

Applied where no specific or general emission limit of individual organic halogenated compounds, or their specified groups, is set.

#### **General emission limits for pollutants or their specified groups specified in point 7**

Number of pollutant or specified group	Remarks
7.1, 7.6, 7.10 to 7.14, 7.17, 7.19, 7.21 to 7.24	Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 0.1 kg/h, an aggregate mass concentration of 20 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
7.2 to 7.4, 7.16	Expressed as total organic carbon With a mass flow rate of emissions of a pollutant higher than 2 kg/h, an aggregate mass concentration of 100 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
7.5, 7.7 to 7.9, 7.15, 7.18, 7.20, 7.25	Expressed as total organic carbon With a mass flow rate of emissions of all these pollutants higher than 3 kg/h, an aggregate mass concentration of 150 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.
7.26 to 7.28	Expressed as total halogen With a mass flow rate of emissions of all these pollutants higher than 0.1 kg/h, an aggregate mass concentration of 10 mg/m <sup>3</sup> of these pollutants in waste gas must not be exceeded.

#### **8. Inorganic compounds and their specified groups not specified in points 1, 2, 3, 4, 5, 6 or 7 of this Annex**

- 8.1 antimony hydride (stibine)
- 8.2 arsenic trihydride (arsine)
- 8.3 hydrogen phosphide (phosphane)
- 8.4 phosgene
- 8.5 cyanogen chloride
- 8.6 fluorides expressed as F
- 8.7 cyanides expressed as CN
- 8.8 hydrogen cyanide
- 8.9 hydrogen sulphide (sulphane)
- 8.10 strong inorganic acids expressed as H, except HCl
- 8.11 fluorine and its inorganic compounds, including fluorides in accordance with point 8.6, expressed as F
- 8.12 bromine and its inorganic compounds expressed as Br
- 8.13 chlorine
- 8.14 chlorine and its inorganic compounds, including Cl<sub>2</sub> in accordance with point 8.13, expressed as Cl

**General emission limits for pollutants or their specified groups specified in point 8**

Number of pollutant specified group	Remarks
8.1 to 8.5	<p>General emission limit and other terms and conditions for the application thereof:</p> <p>With a mass flow rate of emissions of all these pollutants higher than 10 g/h, an aggregate mass concentration of 2 mg/m<sup>3</sup> of these pollutants in waste gas must not be exceeded.</p>
8.6 to 8.7	<p>With a mass flow rate of emissions of all these pollutants higher than 50 g/h, an aggregate mass concentration of 5 mg/m<sup>3</sup> of these pollutants in waste gas must not be exceeded.</p>
8.8 to 8.12	<p>With a mass flow rate of emissions of all these pollutants higher than 100 g/h, an aggregate mass concentration of 10 mg/m<sup>3</sup> of these pollutants in waste gas must not be exceeded.</p>
8.13 to 8.14	<p>With a mass flow rate of emissions of all these pollutants higher than 500 g/h, an aggregate mass concentration of 50 mg/m<sup>3</sup> of these pollutants in waste gas must not be exceeded.</p>

**9. Odorous substances**

The general emission limit for odorous substances and specific emission limits for odorous substances are specified in Annex No 2 hereof.

## 10. Equivalentents to the toxicity of dibenzodioxins and dibenzofurans

For the determination of the total concentration of dioxins and furans, the mass concentration of the following polychlorinated dioxins and dibenzofurans shall be multiplied by the following toxicity equivalence factors of 2,3,7,8 TCDD before summing:

		coefficient of toxicity equivalent
2, 3, 7, 8	- tetrachlordibenzodioxine, (TCDD)	1
1, 2, 3, 7, 8	- pentachlordibenzodioxine (PeCDD)	0.5
1, 2, 3, 4, 7, 8	- hexachlordibenzodioxine (HxCDD)	0.1
1, 2, 3, 7, 8, 9	- hexachlordibenzodioxine (HxCDD)	0.1
1, 2, 3, 6, 7, 8	- hexachlordibenzodioxine (HxCDD)	0.1
1, 2, 3, 4, 6, 7, 8	- heptachlordibenzodioxine (HpCDD)	0.01
	- octachlordibenzodioxine (OCDD)	0.001
2, 3, 7, 8	- tetrachlordibenzofuran (TCDF)	0.1
2, 3, 4, 7, 8	- pentachlordibenzofuran (PeCDF)	0.5
1, 2, 3, 7, 8	- pentachlordibenzofuran (PeCDF)	0.05
1, 2, 3, 4, 7, 8	- hexachlordibenzofuran (HxCDF)	0.1
1, 2, 3, 7, 8, 9	- hexachlordibenzofuran (HxCDF)	0.1
1, 2, 3, 6, 7, 8	- hexachlordibenzofuran (HxCDF)	0.1
2, 3, 4, 6, 7, 8	- hexachlordibenzofuran (HxCDF)	0.1
1, 2, 3, 4, 6, 7, 8	- heptachlordibenzofuran (HpCDF)	0.01
1, 2, 3, 4, 7, 8, 9	- heptachlordibenzofuran (HpCDF)	0.01
	- octachlordibenzofuran (OCDF)	0.001

## 11. Equivalentents of the toxicity of polychlorinated biphenyls

For the determination of the total concentration of the following polychlorinated biphenyls, their mass concentration shall be multiplied by the following toxicity equivalence factors of 2,3,7,8 TCDD before summing:

UIPAC code		coefficient of toxicity equivalent
77	- non-ortho PCB	0.0005
126	- non-ortho PCB	0.1
169	- non-ortho PCB	0.01
105	- mono-ortho PCB	0.0001
114	- mono-ortho PCB	0.0005
118	- mono-ortho PCB	0.0001
123	- mono-ortho PCB	0.0001
156	- mono-ortho PCB	0.0005
157	- mono-ortho PCB	0.0005
167	- mono-ortho PCB	0.00001
189	- mono-ortho PCB	0.0001
170	- di-ortho PCB	0.0001
180	- di-ortho PCB	0.00001

## 12. List of polychlorinated biphenyls

IUPAC congeners (partially toxic):

3,3',4,4',5-pentaCB (IUPAC 126)  
3,3',4,4',5,5'-hexaCB (IUPAC 169)  
3,3',4,4'-tetraCB (IUPAC 77)

monoortho:

2,3',4,4',5-pentaCB (IUPAC 118)  
2,3,3',4,4'-pentaCB (IUPAC 105)  
2',3,4,4',5-pentaCB (IUPAC 123)  
2,3,4,4',5-pentaCB (IUPAC 114)  
2,3,3',4,4',5-hexaCB (IUPAC 156)  
2,3,3',4,4',5'-hexaCB (IUPAC 157)  
2,3',4,4',5,5'-hexaCB (IUPAC 167)  
2,3,3',4,4',5,5'-heptaCB (IUPAC 189)

## LIMITS FOR THE PERMISSIBLE DARKNESS OF SMOKE AND EMISSION LIMITS FOR ODOROUS SUBSTANCES

### 1. Emission limits for the permissible darkness of smoke

The highest permissible darkness of smoke is an optical property of smoke induced by the absorption of light in the smoke plume rising from a stack. It is expressed in Ringelmann grades in the smoke plume (a scale of 0 to 5). The darkness of smoke can also be expressed in Bacharach grades (a scale of 0 to 9) or by a measurement of opacity (given in %), which is measured in the flue gas ducting.

The highest permissible darkness of smoke discharged from the combustion process is generally given by the following emission limits:

- a) During the combustion of fuels the departing smoke must not be darker than grade 2 using a measurement and evaluation with the Ringelmann scale and the measured value of opacity must not be greater than 40%. Over the period facilities are heated from cold, lasting a maximum of 30 minutes, unless the boiler certificate stipulates to the contrary, the darkness of smoke may rise to grade 3 of the Ringelmann scale or a value of 60% of opacity.
- b) During the combustion of liquid fuels, the process must be conducted so that, in addition to the conditions specified in the preceding paragraph, during an inspection of the content of soot carried out by a measurement of the darkness of stains on a filter from an extracted sample in accordance with the Bacharach method, a value higher than grade 4 on the Bacharach scale is not determined in any of three consecutive tests or grade 3 in at least two of the three tests. During the heating-up of facilities from a cold state, no inspection of the darkness of smoke using a Bacharach test is carried out.

### 2. Emission limits for odorous substances

The general emission limit for a source located in the residential parts of the areas between municipalities or their protected zones is 50 OUER  $\text{m}^3$  measured at the stack, exit or outlet from emission reduction equipment. 'Protected zone' shall mean territory of a distance shorter or equal to 2 km from the nearest location at the border of areas between adjoining municipalities.

The general emission limit for a source which is more than 2 km from the nearest location at the border of areas between adjoining municipalities is 100 OUER  $\text{m}^3$  measured at the stack, exit or outlet from emission reduction equipment.

If a source has more than one stack, exit or outlet with various types of odours, a measurement must be carried out by blending individual samples into a single one, and the resulting value of odorous units must not exceed a value of 100 OUER  $\text{m}^3$ .

If a source does not have its own stack, exit or outlet, the concentration of fugitive odorous substances at the border of the land of a stationary source must not exceed 5 OUER  $\text{m}^{-3}$ , provided that the source is located in the residential parts of the areas between municipalities or in their protected zones.

If a source of fugitive emissions is located outside the protected zones of adjoining municipalities, the concentration of fugitive odorous substances on the border of the land of a stationary source must not exceed 20 OUER  $\text{m}^{-3}$ .

### **3. Immission limits of odour nuisance**

Immission limits of odour nuisance (the permissible level of odour nuisance) are specified in § 15, paragraph 6 hereof.



**CATALOGUE OF CATEGORIES, GROUPS AND SUBGROUPS OF SOURCES**

1. The catalogue under this Annex is maintained in the Register of Emissions and of Air Pollution Sources as set forth in § 13, paragraph 1 of the Act.
2. The list of categories of sources is specified in § 4, paragraph 4, letter a) of the Act.
3. The list of basic groups of sources by technical and technological structure is specified in § 4, paragraph 4, letter b) of the Act. (Note: part of the emissions inventories are emissions from transportation and emissions from the operation of other mobile sources).
4. Each source of air pollution is classified in the Catalogue in accordance with a numerical code, which appoints the group and subgroup of a source. In case of a specified source of pollution which specific emission limits has been specified under a special legal regulation<sup>1)</sup>, the numerical code in the catalogue is assigned the name of the source specified under this regulation.
5. The list of basic groups of sources is specified in § 4, paragraph 4, letter b) of the Act.
6. Sources are differentiated into the following groups:
  - Combustion sources
    - Specified combustion sources
    - Unspecified combustion sources
  - Other sources
    - Sources emitting VOC from processes applying organic solvents
    - Sources emitting VOC from the storage and distribution of petrol
    - Sources in the energy industry – fuel transformation branch
    - Sources in the production and processing of metals
    - Sources in the production of non-metal mineral products and the processing of minerals
    - Sources in the chemical industry and productions
    - Sources in the branch of waste management, excluding waste incineration plants
    - Sources from the operation of agricultural technology
    - Sources in the light and food-processing industry, services and certain other branches
    - Other unspecified sources with fuel combustion
    - Other unspecified sources without fuel combustion
  - Waste incineration plants
7. The outline of the Catalogue is published in the Bulletin of the Ministry of the Environment.

**Annex No 4 to Decree No 356/2002Coll.**

**EMISSION FACTORS OF SELECTED OTHER SOURCES**

1. Emission factors are used for the calculation of charges for air pollution in accordance with § 19 of the Act. Where the concentration of a pollutant in waste gas or the specific production emission cannot be established for a source, the process for determining the quantity of a discharged pollutant by means of the emission factor specified under this Annex or a special legal regulation<sup>1)</sup> is used.

2. A determination of the quantity of discharged pollutant is carried out by means of a calculation in accordance with the equation:

$$E_z = E_f \cdot M$$

where  $E_f$  is the emission factor and  $M$  is the quantity of units to which the emission factor is related (reference quantity of an emission factor – for example the mass of spent fuel, the mass of input raw materials, the mass of production, the number of production units, etc.).

3. In cases of the permanent implementation of a measure restricting emissions of a certain pollutant at a source, it is necessary to demonstrate its average effectiveness by means of the result of an authorized measurement. The determination of the quantity of discharged pollutant in this case is carried out by means of a calculation in accordance with the equation:

$$E_o = E_z \cdot (1 - 0,01 \cdot ?)$$

where ? is the effectiveness of the measure restricting emissions of the pollutant in %.

4. Emission factors for the use of gaseous fuels in stationary gas turbines and piston combustion engines (kg/10<sup>3</sup> . m<sup>3</sup> )

Specification	NO <sub>x</sub>	SO <sub>x</sub>	VOC	PM	CO
Gas turbines	11	0.002 . S	0.2	-	3.7
Gas turbines derived from aircraft engines	25	0.002 . S	7	-	7
Piston engines spark ignition	60	0.002 . S	30	0.05	15
Piston engines - dual fuel	40	0.002 . S	30	0.1	15

Note: S = sulphur content in fuel in mg/m<sup>3</sup>

5. Emission factors for the use of liquid fuels in stationary gas turbines and piston combustion engines (kg/t)

Specification	NO <sub>x</sub>	SO <sub>x</sub>	VOC	PM	CO
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Gas turbines	15	20 . S	0.6	-	5
Gas turbines derived from aircraft engines	32	20 . S	6	-	9
Piston engines - spark ignition	75	20 . S	30	0.1	250
Piston engines - compression ignition	50	20 . S	6	1.0	15

Note: S = content of sulphur in fuel as % of the mass

#### 6. Emission factors for coal coking

Pollutant	E <sub>f</sub> (g/t of coke)
NO <sub>x</sub>	260
SO <sub>2</sub>	
From heating with coke-oven gas	1400
From heating with mixed gas	320
VOC	1000
PM	1000
CO	1200

Note: The given values are for the sake of orientation, for the calculation of charges E<sub>f</sub> are specified

for individual batteries and the operating services of metallurgical and mining coking plants

#### 7. Emission factors for the treatment of ores in black metallurgy (sintering belts)

Pollutant	E <sub>f</sub> (kg/t of sinter)
NO <sub>x</sub>	0.5
SO <sub>2</sub>	2.0
VOC	0.1
PM	2.0
CO	50

#### 8. Emission factors of blast furnace operations

Pollutant	E <sub>f</sub> (kg/t of pig iron)
NO <sub>x</sub>	0.7
SO <sub>x</sub>	0.3
VOC	0.2
PM	0.2* ; 1.0**
CO	8.0

Note: \* operations without a casting floor

\*\* operations without casting floor dust removal

#### 9. Emission factors of basic pollutants for steelworks in g/t of steel

Pollutant	Oxygen converters	Hearth furnaces	Electric arc furnaces

NO <sub>x</sub>	50	3500	300
SO <sub>x</sub>	1,5	2000	1,5
VOC	30	80	170
CO	5000	10000	2000
PM* **	120	450	150

Note: \* after dust removal

\*\* The values given are for the sake of orientation – E<sub>f</sub> for specific aggregates are available

#### 10. Emission factors of basic pollutants for rolling mills and foundries

Explanation: \* g/t of rolled products

\*\* g/t of liquid metal

Pollutant	Rolling mills *		Foundries **	
			Cold-blast cupolas	Hot-blast cupolas
NO <sub>x</sub>	Mixed gas	250	70	350
	Coke-oven gas	400		
SO <sub>2</sub>	Mixed gas	2100	1400	
	Coke-oven gas	2800		
PM			10,000	
CO			70,000	

#### 11. Emission factors for lime works

Pollutant	E <sub>f</sub> (g/t of product)
NO <sub>x</sub>	200
SO <sub>2</sub>	0
PM	1500

#### 12. Emission factors for brickworks (all brick products)

Pollutant	Heating	E <sub>f</sub> *
PM	LTO, TTO	1.5
	ZP, SV	20
SO <sub>2</sub> **	LTO, TTO	20.0 . S
	ZP, SV	2.0 . S
NO <sub>x</sub>	LTO, TTO	10
	ZP	3300
	SV	1600
CO	LTO, TTO	0.5
	ZP, SV	270
VOC	LTO, TTO	0.4
	ZP, SV	48

Explanations: LTO – light heating oil, TTO – heavy heating oil, ZP – natural gas, SV – lighting gas

S – content of sulphur given for LTO TTO as a % of the mass, for ZP and SV in mg/m<sup>3</sup>

\* E<sub>f</sub> for LTO and TTO are given in kg/t of spent oil, E<sub>f</sub> for ZP and SV are given in kg/10<sup>6</sup>\*m<sup>3</sup> of spent gas

\*\* In cases where coal dust is used as opening material, emissions of SO<sub>2</sub> must be added in accordance with the sulphur content in the used coal by applying E<sub>f</sub> = 19.0 . S<sub>p</sub> (S<sub>p</sub> = sulphur content in the original sample of fuel as a % of the mass)

Calculation of the quantity of emissions of fluorine from brick and ceramic production

The quantity of emissions of fluorine from brick and ceramic production depends on its content in the initial raw material and on the firing temperature. For a determination of the quantity of fluorine released from the raw material in relation to the firing temperature the following equation is used:

$$A = (0.174 \cdot t - 145) \cdot 0.97$$

Where A = the proportion of released fluorine as a %  
t = the highest temperature in °C (from 834 °C upwards)

### 13. Emission factors for the production of ceramics and porcelain

Used for

- the same E<sub>f</sub> heat processes as in the case of brickworks, including the use of a calculation of emissions of fluorine,
- other E<sub>f</sub> processes for PM are appointed individually in accordance with separating equipment,
- the PM emission factor for the treatment of materials is 500 g/t of treated raw material for facilities without separators; where they are installed the procedure applied is that set down in letter b).

### 14. Emission factors for the production of inorganic chemicals

Product	Pollutant	E <sub>f</sub> (g/t of product)
H <sub>2</sub> SO <sub>4</sub> -simple absorption	SO <sub>x</sub>	10000
double absorption		2200
Elementary sulphur – Claus process without desulphurization	SO <sub>x</sub>	50000
with desulphurization		10000

### 15. Emission factors for fuel (PHM) pumps

PHM	E <sub>f</sub> (g VOC/m <sup>3</sup> )
Petrol	1400
Diesel	20

### 16. Emission factors for the storage of fuel (PHM)

PHM	Type of storage tank	E <sub>f</sub> (g VOC/t of throughput)
Petrol *	with a floating roof	2000 ***
Diesel		39.3
Kerosene **		45.1
Oil		380
Automobile petrol	with a fixed roof	730
Diesel		200

Note: \* automobile, aircraft and technical petrol

\*\* aircraft and technical kerosene

\*\*\* depends on the technical condition of the storage tank

#### 17. Emission factors for stone quarries and stone processing

Basic E<sub>f</sub> = 1 kg of PM (dust)/t of aggregates produced for stone quarries producing crushed aggregates or stone extracted in blocks with surface working.

Basic E<sub>f</sub> = 0,4 kg of PM (dust)/t of aggregates produced for stone quarries producing exclusively stone extracted in blocks.

Calculation in accordance with the method for dust separation:

Separation method	Retention (%)	Emission outflow (%)
Quarry without any separation, without covering of technological units or transport routes	0	100
Quarry without any separation, but with covered technological units (crusher, granulator, sorting plant) including transport routes	10	90
Quarry without any separation, but with covered technological units including transport routes and with wetting	30	70
Quarry with cyclone separators on covered technological units	50	50
Quarry with cyclone separators on covered technological units and with wetting	60	40
Quarry with covered technological units and textile filters	80	20
Quarry with covered technological units, textile filters and with wetting	90	10

Example of the calculation of an emission of dust for a stone quarry:

Annual production of quarry = 60,660 t of aggregates – annual emission of dust prior to separation is 60.66 t

The method for separation is carried out in accordance with line 3 of the table – the emission outflow is 70%

The emission of PM is specified by means of a calculation as follows:  $60.66 \cdot 0.7 = 42.5$  t/year

#### 18. Emission factors for crematoriums

Pollutant	E <sub>f</sub> (g/cremation)
CO	300
VOC	30
NO <sub>x</sub>	800
SO <sub>2</sub>	50
PM	350
Cl	15
F	5

**MEASUREMENT METHODS AND TECHNICAL REQUIREMENTS FOR THE  
PERIODIC MEASUREMENT OF EMISSIONS**

**Methods of analysis for the periodic measurement of emissions <sup>\*)</sup>**

Standard number	Standard name	Effect
CSN ISO 9096 (83 4615)	Stationary sources of emissions - <b>Determination of the mass concentration and of the mass flow rate of particulate matter in pipes</b> - Manual gravimetric method	1 July 1998
CSN ISO 7934 (83 4702)	Stationary sources of emissions - <b>Determination of the mass concentration of emissions of sulphur dioxide</b> - Volumetric determination by means of barium perchlorate	1 July 1998
CSN EN 1948- 1 (83 4745)	Stationary sources of emissions - <b>Determination of the mass concentration of PCDD/PCDF</b> - Part 1: Sampling	1 August 1998
CSN EN 1948- 2 (83 4745)	Stationary sources of emissions - <b>Determination of the mass concentration of PCDD/PCDF</b> - Part 2: Extraction and cleaning	1 August 1998
CSN EN 1948- 3 (83 4745)	Stationary sources of emissions - <b>Determination of the mass concentration of PCDD/PCDF</b> - Part 3: Identification and quantitative determination	1 August 1998
CSN EN 1911- 1 (83 4750)	Stationary sources of emissions - <b>Manual method for the determination of HCl</b> - Part 1: Sampling <b>Replaces the standards CSN 83 4751-1 and CSN 84 4751-2 as of 1 June 1999</b>	1 June 1999
CSN EN 1911- 2 (83 4750)	Stationary sources of emissions - <b>Manual method for the determination of HCl</b> - Part 2: Absorption of gaseous compounds <b>Replaces the standards CSN 83 4751-1 and CSN 84 4751-2 as of 1 June 1999</b>	1 June 1999
CSN EN 1911- 3 (83 4750)	Stationary sources of emissions - <b>Manual method for the determination of HCl</b> - Part 3: Analysis of the absorption solution and calculations <b>Replaces the standard CSN 83 4751-5 as of 1 June 1999</b>	1 June 1999
CSN ISO 10780 (83 4772)	Stationary sources of emissions - <b>Measurement of the velocity and volume flow rate of gases in pipes</b>	1 July 1998
CSN 83 4011	Air protection. <b>Air pollution sources.</b> Terminology	1 July 1985
CSN 83 4501	Air protection. <b>Measurement of emissions from air pollution sources.</b> Basic Terms, terminology and classification	1 October 1988



CSN 83 4511	Air protection. <b>Classification of emissions from air pollution sources</b>	1 December 1982
CSN 83 4611	Air protection. <b>Measurement of solid emissions from air pollution sources</b>	1 January 1983
CSN 83 4711-1	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid, and the total content of sulphur oxides from air pollution sources. General part</b>	1 March 1983
CSN 83 4711-2	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid and the total content of sulphur oxides from air pollution sources.</b> Collection of a sample for manual methods of measurement	1 March 1983

CSN 83 4711-3	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid and the total content of sulphur oxides from air pollution sources.</b> Determination of the total content of sulphur oxides	1 March 1983
CSN 83 4711-4	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid and the total content of sulphur oxides from air pollution sources.</b> Determination of the content of sulphuric acid and the total content of sulphur dioxide and sulphur trioxide	1 March 1983
CSN 83 4711-5	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid and the total content of sulphur oxides from air pollution sources.</b> Determination of the total content of sulphur trioxide and sulphuric acid and the content of sulphur dioxide	1 March 1983
CSN 83 4711-6	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid and the total content of sulphur oxides from air pollution sources.</b> Determination of the content of sulphur trioxide	1 March 1983
CSN 83 4712-1	Air protection. <b>Determination of emissions of hydrogen sulphide from stationary sources. General part</b>	1 June 1988
CSN 83 4712-2	Air protection. <b>Determination of emissions of hydrogen sulphide from stationary sources.</b> Collection of a sample for manual methods of measurement	1 June 1988
CSN 83 4712-3	Air protection. <b>Determination of emissions of hydrogen sulphide from stationary sources.</b> Method of volumetric determination	1 June 1988
CSN 83 4712-4	Air protection. <b>Determination of emissions of hydrogen sulphide from stationary sources.</b> Method of photometric determination	1 June 1988
CSN 83 4713-1	Air protection. <b>Determination of emissions of carbon disulphide from stationary sources.</b> General part	1 June 1988
CSN 83 4713-	Air protection. <b>Determination of emissions of carbon</b>	1 June

2	<b>disulphide from stationary sources.</b> Collection of a sample for manual methods of measurement	1988
CSN 83 4713-3	Air protection. <b>Determination of emissions of carbon disulphide from stationary sources.</b> Argentometric method	1 June 1988
CSN 83 4713-4	Air protection. <b>Determination of emissions of carbon disulphide from stationary sources.</b> Iodometric method	1 June 1988
CSN 83 4721-1	Air protection. <b>Determination of emissions of nitrogen oxides from stationary sources.</b> General part	1 January 1988
CSN 83 4721-2	Air protection. <b>Determination of emissions of nitrogen oxides from stationary sources.</b> Collection of a sample for manual methods of measurement	1 January 1988
CSN 83 4721-3	Air protection. <b>Determination of emissions of nitrogen oxides from stationary sources.</b> Method of alkalimetric titration	1 January 1988
CSN 83 4728-1	Air protection. <b>Measurement of emissions of ammonia from air pollution sources.</b> General part	1 April 1986
CSN 83 4728-2	Air protection. <b>Measurement of emissions of ammonia from air pollution sources.</b> Collection of a sample for manual methods of measurement	1 April 1986
CSN 83 4728-3	Air protection. <b>Measurement of emissions of ammonia from air pollution sources.</b> Method of volumetric determination	1 April 1986
CSN 83 4728-4	Air protection. <b>Measurement of emissions of ammonia from air pollution sources.</b> Method of photometric determination	1 April 1986
CSN 83 4728-5	Air protection. <b>Measurement of emissions of ammonia from air pollution sources.</b> potentiometric method	1 April 1986
CSN 83 4751-3	Air protection. <b>Determination of emissions of chlorine and hydrogen chloride from stationary sources.</b> Determination of chlorine. Photometric method	1 August 1988
CSN 83 4751-4	Air protection. <b>Determination of emissions of chlorine and hydrogen chloride from stationary sources.</b> Determination of chlorine. Volumetric method	1 August 1988
CSN 83 4751-6	Air protection. <b>Determination of emissions of chlorine and hydrogen chloride from stationary sources.</b> Determination of chlorine and hydrogen chloride juxtaposed	1 August 1988
CSN 83 4752-1	Air protection. <b>Determination of emissions of fluorine from stationary sources.</b> General part	1 August 1990
CSN 83 4752-2	Air protection. <b>Determination of emissions of fluorine from stationary sources.</b> Collection of samples for manual methods of measurement	1 August 1990
CSN 83 4752-3	Air protection. <b>Determination of emissions of fluorine from stationary sources.</b> Potentiometric method of determination	1 August 1990

CSN 83 4752-4	Air protection. <b>Determination of emissions of fluorine from stationary sources.</b> Photometric method of determination	1 August 1990
CSN 83 4752-5	Air protection. <b>Determination of emissions of fluorine from stationary sources.</b> Method of volumetric determination	1 August 1990

\*<sup>9)</sup> Explanation: Any and all valid CSN, CSN ISO and CSN EN standards which have been or will be issued by the Czech Standardization Institute, and which are connected with the conduction of a periodic measurement of emissions of substances contaminating the air, must be considered as a component of this Annex.

**MEASUREMENT METHODS AND TECHNICAL REQUIREMENTS FOR  
CONTINUOUS MEASUREMENT OF EMISSIONS**

**I. Principle of the method for the continuous measurement of emissions - measured substance**

- |   |   |
|---|---|
| - absorption of beta radiation  | particulate matter  |
| - photometry  | particulate matter  |
| absorption of visible radiation   | particulate matter  |
| - infrared spectrometry   | SO <sub>2</sub> , CO, NO <sub>x</sub> (NO), HCl, HF   |
| - non-dispersive infrared absorption spectrometry (NDIR)                | CO <sub>2</sub> , CO <sub>2</sub> , SO <sub>2</sub> , NO, NO <sub>2</sub> , NH <sub>3</sub> ,<br>H <sub>2</sub> S, CS <sub>2</sub> , individual organic compounds |
| - ultraviolet spectrometry  | SO <sub>2</sub> , NO <sub>x</sub> (NO), CO  |
| - non-dispersive infrared absorption spectrometry (NDUV)                | CO, CO <sub>2</sub> , SO <sub>2</sub> , NO, NO <sub>2</sub> , NH <sub>3</sub> ,<br>individual organic compounds   |
| - potentiometry   | F <sup>-</sup> and Cl <sup>-</sup>  |
| - colorimetry   | H <sub>2</sub> S  |
| - flame ionization detection  | TOC   |
| - catalytic combustion  | TOC   |
| - chemoluminescence   | NO <sub>x</sub> (NO)  |
| - paramagnetism   | O <sub>2</sub>  |
| - electrochemical with ceramic electrolyte                              | O <sub>2</sub> , H <sub>2</sub> O   |
| - psychrometric high-temperature method                                 | H <sub>2</sub> O  |
| - mass spectrometry (MS) simultaneously                                 | all individual organic compounds, TOC, most of<br>gaseous inorganic compounds   |
| - infrared absorption spectrometry with Fourier's transformation (FTIR) | TOC, simultaneously<br>all gaseous inorganic and organic compounds with<br>the exception of compounds with homoatomic<br>molecules                                |
| - measurement of the differential pressure of the Prandtl tube          | velocity of the flow of gas   |
| - heat anemometer   | gas flow velocity   |
| - measurement of the velocity of ultrasound diffusion                   | gas flow velocity   |

**II. Requirements regarding devices for the continuous measurement of emissions**

- |   |  |
|---|--|
| a) minimum determinable quantity  | up to 2% of scale,   |
| b) surrounding temperature  | from + 5 °C to 35 °C or<br>from - 10 °C to + 55 °C,                                      |
| c) temperature dependence of zero point<br>with a change of 10 °C                   | less than ± 2%<br>from the most sensitive scale (greater effect must<br>be compensated), |
| d) temperature dependence of the calibration<br>point (span) with a change of 10 °C | less than ± 3% of scale<br>(greater effect must be compensated),                         |

- e) disturbing effect of all other constituents on the measurement  $\pm 4\%$  of the most sensitive scale
- f) 90% time value must not be greater than 200 seconds, including the sampling equipment,
- g) shift of zero point during the check interval must not be greater than  $\pm 2\%$  with the most sensitive scale,
- h) shift in calibration point (span) during the check interval must not be greater than  $\pm 2\%$  with the most sensitive scale,
- i) Collection of a sample and sampling equipment are designed so that there is no clogging with solid substances or the sorption of measured substances,
- j) zero point and calibration point (span) must be registered at least once during the calibration at the registration equipment,
- k) the intervals of verification, i.e. the setting of zero point and the calibration point (span) and maintenance must be specified by the manufacturer,
- l) the sampling train must be carried out and operated so that there are no losses of analyte or breakdowns in the functioning of the train.

### III. Methods of analysis for the continuous measurement of emissions <sup>\*)</sup>

Standard number	Standard name	Effect
CSN ISO 10155 (83 4616)	Stationary sources of emissions - <b>Automated monitoring of the mass concentration of particles</b> - Characteristics, testing methods and determination	1 July 1998
CSN ISO 10396 (83 4770)	Stationary sources of emissions - <b>Collection of samples for an automated determination of the mass concentration of gaseous constituents</b>	1 July 1998
CSN ISO 7935 (83 4701)	Stationary sources of emissions - <b>Determination of the mass concentration of emissions of sulphur dioxide</b> - Characteristics of automated measuring methods	1 July 1998
CSN ISO 10849 (83 4704)	Stationary sources of emissions - <b>Determination of the mass concentration of emissions of nitrogen oxides</b> - Characteristics of automated measuring methods	1 July 1998
CSN EN 12619 (83 4742)	Stationary sources emissions. <b>Determination of the low values of the mass concentration of total gaseous organic carbon in combustion products.</b> Continuous method using a flame ionization detector	1 May 2000
CSN 83 4611	Air protection. <b>Measurement of solid emissions from air pollution sources.</b>	
CSN 83 4711-7	<b>Measurement of emissions of sulphur dioxide, sulphur trioxide, sulphuric acid and the total content of sulphur oxides</b>	1 March 1983

	<b>from air pollution sources.</b> Continuous determination of the total sulphur dioxide content	
CSN 83 4740	Air protection. <b>Determination of emissions of carbon dioxide from stationary sources.</b> Method of infrared absorption spectroscopy	1 June 1991

\*<sup>)</sup> Explanation: Any and all valid CSN, CSN ISO and CSN EN standards which have been or will be issued by the Czech Standardization Institute, and which are connected with the conduction of a periodic measurement of emissions of substances contaminating the air , must be considered part of this Annex.

## **MEASUREMENT METHODS AND TECHNICAL REQUIREMENTS FOR THE MEASUREMENT OF ODOURS**

### **1. Methods for the measurement of odours**

1. Olfactometric method (Specified under EN 13725 Air quality - Determination of odour concentration by dynamic olfactometer)
2. Method of statistical determination and evaluation of odour nuisance (specified under CSN 83 5030 - Effects and assessments of odours – Determination of parameters of nuisance by interviewing a panel sample of inhabitants)
3. Measurements in an odour trace (CSN 83 5031 – Determination of odorous substances in the external air by field research)
4. Method of local investigation on the basis of statistics of complaints

### **2. Calibration of devices for the measurement of odorous substances**

**The calibration method for the calibration of devices for the measurement of odour is established under standard EN13725 and NVN28203. Olfactometric method of analysis for the measurement of odours**

#### Method of odour analysis (instrumental olfactometry):

Instrumental olfactometry uses the principle of the gradual dilution of odour with neutral gas (medicinal oxygen) until the human threshold of odour perception is reached.

#### Measuring group:

This is composed of at least six persons (assessors) testing the odour threshold. These persons must be examined by a competent specialist from the ORL branch to determine whether they are healthy in this respect. During the verification of olfactory functioning by means of n-butanol (60 µmol/mol), the persons must demonstrate 3 – 4.38 OUER. Persons must be above the age of sixteen years old; they must not use substances releasing an odour or smoke prior to and during the measurement, and must satisfy other principles specified under standard EN 13725.

#### Collection of samples:

Samples are collected into collection bags made from specified synthetic materials or into 'glass mices' of a volume from 5 to 50 l. The number of collected samples at a source is at least three. In the case of fugitive sources it is necessary to collect samples on the border of the land in an interval containing the entire cycle of the production process.

#### Processing of samples:

This must be done within 16 hours of collection on premises fulfilling the terms and conditions for the measurement by the olfactometric method.

#### Determination of odour:

A collected sample is diluted with synthetic air or medicinal oxygen in an olfactometer. The value of the olfactory threshold determined by the measurement is that which is specified by 50% of the persons from the measuring group. The number of odorous units is determined on the basis of the degree of dilution of the collected sample on the calibrated olfactometer. The calibration of the olfactometer is carried out at least once per calendar year.

Evaluation of measurement:

The resultant number of odorous units is appointed by a statistical calculation on the basis of the results of individual determinations from collected samples.

**4. Requirements regarding the measuring system**

- a) temperature range of the measured gas in a laboratory from 0 °C to 25 °C or
- b) temperature range of sampled gas from +25 °C to + 200 °C
- c) the temperature of measured gas during the measurement must not fluctuate in a range of more than 3 °C
- d) minimum velocity of flow rate of tested gas 2 m.s<sup>-1</sup>
- e) minimum flow rate of measured gas in the smelling mask must be 20 l min<sup>-1</sup>
- f) the breathing mask must have an average of 4 to 7 cm
- g) the velocity of the flow of measured gas must not derogate by more than 10% from the average (part of the calibration)
- h) the olfactometer is calibrated for odour units by means of a standard of n-butanol with a concentration of 0.04 µmol/mol of neutral gas
- i) number of persons in panel (assessors) at least 6
- j) persons are selected for the panel sample on the basis of olfaction tests to a standard of n – butanol (60 µmol/mol of neutral gas); respondents must demonstrate odour units of 3-4.38 OUER
- k) a collected sample must be drawn up for olfactometric purposes within 16 hours
- l) the frequency of calibration and alignment of a device depends on the history of the calibration of the relevant device; it is carried out at least 1 x a year,
- m) the laboratory in which the olfactometer is located must fulfil the terms and conditions specified under the standard, in particular it must be absolutely odour-free, and perfectly air-conditioned so that the odour is not contaminated in the course of the measurement and so that the temperature during the measurement does not fluctuate outside the bounds of ± 3°C, protected from direct sunlight.

**5. Twenty-four-hour short-term monitoring of an odour**

Determination of the parameters of nuisance by interviewing a panel sample of inhabitants

**a) Determination of the minimum number of respondents**

The minimum number respondents depends on the number of inhabitants in the monitored areas and should be selected as follows

Number of inhabitants in monitored areas	Minimum number of respondents
less than 500	10%, at least 10 persons
500 - 5000	at least 50 persons
more than 5000	1% of population



The ordinary rate of return, i.e. the number of positive reactions to the invitation to cooperate, expressed as a %, ranges between 10 and 15%. When recruiting respondents it is therefore necessary to address an adequate number of potential cooperating persons (e.g. with an anticipated number of 50 respondents, at least 500 persons should be approached).

**b) Determination of the limit value of nuisance - twenty-four-hour short-term monitoring of an odour**

In the case of uninterrupted short-term monitoring of an odour, calculation will take place as follows:

- 1) The period over which each respondent is particularly bothered is determined.
- 2) Individual respondents are listed in order in accordance with the length of the odour nuisance.
- 3) 2%, or 10%, of the monitored period is calculated (see § 15, paragraph 6).
- 4) The number of respondents who are bothered after 2% (10%) of period or more is determined.
- 5) It is calculated whether this number of respondents is higher than or equal to 5%, or 15%, of the total number of respondents.

For the above-mentioned calculation, a recommended form is used to interview inhabitants in the event of a suspicion of a leakage of odorous substances from a small source of air pollution specified under point 5, letter c) of this Annex.

**c) Recommended form to interview inhabitants in the event of a suspicion of a leakage of odorous substances from a small source of air pollution**

Místo:  
Respondent č.:  
Měsíc sledování:

den/měs.	1 ok	2 ok	3 ok	4 ok	5 ok	6 ok	7 ok	8 ok	9 ok	10 ok	11 ok	12 ok	13 ok	14 ok	15 ok	16 ok	17 ok	18 ok	19 ok	20 ok	21 ok	22 ok	23 ok	24 ok
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Vyplňte O nebo N, v kolonce "ok" + nebo -, v případě, že ucítíte zápach mimo budovu, vyplňte do kolonky okno v.

Vysvětlivky:  
O - zaznamenán zápach obtěžující  
N - zaznamenán zápach neobtěžující  
. + - v době zaznamenání zápachu bylo okno v místnosti otevřené  
. - - v době zaznamenání zápachu bylo okno v místnosti zavřené  
ok - okno  
v - venku

**STATIONARY SOURCES OR THEIR FACILITIES, TO WHICH THE  
MEASUREMENT OF EMISSIONS OF ODOROUS SUBSTANCES IN ACCORDANCE  
WITH § 11, PARAGRAPH 1, LETTERS B) AND C) OF THE ACT RELATES**

**The measurement in the case of very large, large or medium-sized sources in accordance with a special legal regulation<sup>1)</sup> is carried out in accordance with § 15, paragraph 1 for these groups of sources**

1. Waste water treatment plants with a designed capacity of 10000 or more equivalent inhabitants. Waste water treatment plants in industry.
2. The production of pharmaceuticals and the operation of fermenting processes except the production of food.
3. The chemical industry including plants for pre-treatment (operations such as washing, bleaching, mercurization) or the dyeing of fibres or textiles, and plants for the tanning of leather and dressing of fur, where the processing capacity is greater than 12 t of finished products daily, etc.
4. Facilities for the breeding of livestock and the connected agricultural technologies
5. Facilities for the neutralization or enhancement of animal bodies and animal waste with a capacity greater than 10 t daily
6. Composting plants
7. Activities and processes connected with the use of organic solvents during the activities specified in Annex No 1 of a special legal regulation<sup>1)</sup> in selected facilities:
  - 7.1. Printing activity
  - 7.2. Degreasing, cleaning and coat-stripping, degreasing and cleaning of the surface of metals, electrical components and other materials and products with other organic solvents according to § 3, letter c) of a special legal regulation<sup>1)</sup>
  - 7.3. Dry-cleaning of clothing
  - 7.4. Application of paint. Coating of wooden surfaces, coating of leather, industrial application of paints - manufacture of new automobiles, industrial application of paints - automobile repairs and vehicle re-spraying, inking (painting) of strips, rolls and wires, coating of wires, adhesive coatings
  - 7.5. Impregnation of wood
  - 7.6. Lamination of wood and plastics
  - 7.7. Manufacture of paints, products, adhesive materials, and printing inks
  - 7.8. Manufacture of footwear and other clothing accessories
  - 7.9. Manufacture of pharmaceutical products and tobacco products.
  - 7.10. Rubber processing, rubber manufacture
  - 7.11. Extraction of vegetable oils and animal fats and the refining of vegetable oils
  - 7.12. Heat processing of polymers
  - 7.13. Heat processing of rubber
8. Plants for the manufacture of cellulose and paper from wood or other fibrous materials, paper and cardboard
9. Operations of food-processing production: abattoirs, cheese factories, frying plants, egg drying, the production and processing of cocoa beans and chocolate products, bakeries, fish

processing, fat processing, the production and processing of coffee substitute, coffee beans, smoke-houses, the production fodder mixes for domestic animals.

10. Production of fertilizers.
11. Oil refining.
12. Asphalt plants for bituminous mixes and bitumen mixing plants.
13. Extraordinary measurements in the case of stationary sources carried out according to § 15, paragraph 1 on the basis of a decision by the air protection authority.

## Annex No 9 to Decree No 356/2002 Coll.

### LIST OF CONSTANT AND VARIABLE INFORMATION CONSTITUTING OPERATING RECORDS

#### 1. Identification of a pollution source

##### Constant information

###### Information about the operator

The identification number of the operator (registration number, tax identification number), business name and registered office, or first name, surname, place of residence, address (municipality, municipal district, street, street number, land registry reference number, registration number or replacement number and postcode; telephone, fax, e-mail address), statutory representative, bank details.

###### Information about the source (facility)

Identification number of the facility (ICP), category, name and structure of the facility, number of sources in facility, address and contacts (district, NUTS, ZÚJ code, ÚTJ code, municipality, municipal district, street, street number, land registry reference number, registration or replacement number and postcode; telephone, fax, e-mail address - if different from the identification of the operator, responsible person), number of the cadastral district, parcel number, coordinates, total nominal heat output or power (MW) or designed production, storage, or other capacity.

#### 2. Information about technological operations

Stationary sources of pollution, depending on their technical and technological arrangement, are divided into facilities of combustion technological processes (combustion sources), waste incineration plants and other technological sources (the Clean Air Act, § 4, paragraph 4). The facility comprises of an equipment, which separately or together with other equipment forms a source or several sources of air pollution.

##### Constant information:

Registration number of the source, registration number of the facilities of technology, category of the source, type of production, name in accordance with the catalogue of sources, manufacturer, year of production and putting into operation, service life, daily, weekly and annual rhythm, number of separating facilities and their registration numbers, registration numbers of stacks or exits, registration numbers of measurements and applied emission limits.

##### a) Information about facilities for fuel combustion, boilers, waste incineration plants and process heating without contact with technological material

##### Constant information:

Type of boiler or equipment, manufacturer, year put into operation, nominal heat output and power, effectiveness of boiler or facilities according to manufacturer, type of combustion chamber.

In the case of boilers in the production of power or combined production of power and heat, also the rated power capacity.

In the case of boilers and facilities incinerating gaseous or liquid fuel, also the type, output and working over-pressure of the burner.

In the case of boilers and facilities incinerating several types of fuel at the same time, also the types of additional fuels or municipal waste and their average proportion of the heating power of the equipment.

In the case of waste co-incineration, registration information concerning the permit for waste co-incineration, the type of waste permitted for co-incineration, its max. quantity per unit of time, or its proportion of the co-incineration.

**Variable information:**

Year, month, day, time, operating hours, generated heat, average use of the nominal heat output, registration numbers for measurements.

In the case of boilers in the production of power or combined production of power and heat, also the generated electricity, the average use of the rated power capacity.

**b) Information about process of heating with the contact of combustion products with technological material**

**Constant information:**

Type and characteristics of the combustion equipment, the nominal heat output, the number of burners, type, output and working over-pressure of the burner, name of the product, specific unit of the product, production capacity, specific energy requirements.

**Variable information:**

Year, month, day, time, operating hours, quantity of manufactured product (number of specific units of the product in a given day, month and year), registration numbers for the measurements.

**c) Other technological processes**

**Constant information:**

Product labelling, specific unit of the product, production capacity, specific energy requirements.

**Variable information:**

Year, month, day, time, operating hours, quantity of manufactured product (number of the specific units of the product in a given day, month and year), registration numbers for the measurements.

### **3. Information about fuels, raw materials or waste**

#### **a) Information about spent fuels or incinerated waste, or about co-incinerated waste**

##### **Constant information:**

Registration number of the facility, registration number of the operation.

##### **Variable information:**

Year, month, day, time, type of fuel, consumption of fuel, waste or co-incinerated waste, quality signs (calorific value, water content, content of ash and sulphur in solids, or content of ash and sulphur in the original sample, hazardous properties of waste), number of operating hours, emission of pollutants.

In the case of boilers and other facilities incinerating several types fuels at the same time, also: types of fuel, consumption of individual types of fuels or waste, number of operating hours, quality signs of individual types of fuels and the proportion of individual types of fuels or waste in the total nominal heat power or output.

#### **b) Information about raw materials or waste**

##### **Constant information:**

Registration number of source, registration number of facilities for technology and operation.

##### **Variable information:**

Year, month, day, time, name of raw materials or waste, type and composition of raw materials or waste, specific unit of raw materials or waste, content of pollutants in raw material or waste per unit (specific production emission related to the specific unit of raw materials or waste), consumption of raw materials or waste in specific units.

### **4. Information about emission reduction facilities**

##### **Constant information:**

Registration number of source, registration number of technological unit and facility.

Registration number and type of separating equipment, separating step, number of units, manufacturer, year of actuation, type of pollutant, guaranteed separator effectivity under at least favourable operating conditions.

**Variable information:**

Time, type of pollutant, operating effectivity, time utilization in given interval, volume flow rate through separator.

**5. Information about stacks and emissions****Constant information:**

Registration number of source, registration number of technological unit and facility, registration number of stack (or other exit or outlet), height of stack (or other exit or outlet), inner diameter at the top of stack, elevation above sea level of the foot of the stack, material and heat insulation properties of stack, registration numbers of discharged pollutants.

**Variable information:**

Registration number of stack, average temperature and velocity of gases flowing through stack, exit, or outlet from the equipment for the separating of emissions at the place of the measurement of emissions, the dates on which the authorized emission measurement was carried out at the source, type and quantity of emissions of pollutant.

**6. Information about the measurement or other method of determining the quantity of emissions of pollutanting substances****Constant information:**

Registration number of source and operation, registration number of technological unit and facility, a list of pollutants for which the source has set emission limits, information to which periodic and to which continuous measurements of emissions relate, the frequency of periodic measurements of emissions.

**Variable information:**

Numbers of reports on the periodic measurement of emissions and the date of their production, name of the pollutant, method to determine the quantity of emissions, date, name of entity conducting the periodic measurement or verifying the continuous measurement, type, frequency, terms and conditions and location of measurement, devices used and measuring method applied, measured concentration of the pollutant in reference conditions, volume flow rate, temperature and pressure of carrier gas, content of oxygen in waste gas, concentration and mass flow rate of the pollutant determined, the calculated or derived specific production emission, the emission factor used for the calculation of the quantity of emissions, or other method used to calculate the quantity of emissions.

**7. Information about breakdowns and accidents****Constant information:**

Registration number of source, registration number of technological unit and facility

**Variable information:**

Date, name of facility, duration, type and quantity of emissions, cause of accident, action taken, reporting to air protection authority.

**8. Information on the administering the emission reduction scheme**

**Constant information:**

Registration number of source, registration number of technological unit and facility, registration number of the pollutant, dates and planned reduction in the quantity of emissions

**Variable information:**

Information on scheme fulfilment (implementation).

**9. Information on the administering the scheme of the implementation of the principles of best agricultural practice**

**Constant information:**

Registration number of source, registration number of technological unit and facility, dates and planned tasks for the implementation of principles of best agricultural practice.

**Variable information:**

Information about fulfilment of the scheme.

**10. Information about the fulfilment of the emission ceiling**

**Constant information:**

Registration number of source, registration number of technological unit and facility, registration number of the pollutant, emission ceiling established

**Variable information:**

Information about fulfilment of the set emission ceiling.



**CONTENTS OF OPERATING RULES**

- 1) Identification of the source and facility where the source is located, owner and operator (especially an up-to-date statement from the commercial register etc).
- 2) Detailed description of the technology of the source of pollution with an emphasis on a technical description of the installed equipment or parts of the equipment which, during operations, pollute - or in the case of an accident or breakdown may pollute – the air, and a description of equipment serving to reduce pollutant emissions and their functioning. The numbering of the source and its parts must be identical to the operating records of the source and must be clearly connected to the valid operating and technological regulations of the operator.
- 3) Processed raw materials and spent fuel used at the source; for all fuels and raw materials safety data sheets must be available (manufacturer, supplier, properties, composition, requirements regarding quality) supplying information concerning observance of emission limits or the terms and conditions of the source's operation.
- 4) A description of technological operations carried out in facilities specified in paragraph 2 with the input raw materials and with the fuels specified in point 3, the chemism of reactions including known side reactions, methods for the control and inspection of the operations carried out (detailed terms and conditions for the processing of raw materials and terms and conditions for fuel combustion, terms and conditions for the operation of facilities serving to reduce pollutant emissions or other operations serving to reduce emissions of pollutants).
- 5) Outputs from technology - products, energy, waste (residues), pollutants, and their properties, quality, quantity, locations of output from the technology into the air, and method for handling them.
- 6) A detailed description of equipment for the continuous measurement of emissions (if installed) and a description of the measuring location, including the process of monitoring the operation of the source and a determination of emissions for cases of failures in the continuous measurement of emissions (e.g. monitoring of the temperature, pressure, oxygen content, viscosity, pH, the darkness of smoke, and other parameters).
- 7) A specification of operations where, in case of a breakdown or accident at a facility, part of a facility or parts thereof, there may be emissions of pollutants at a higher level than during ordinary operations (a specification of pollutants coming into consideration, their concentration, quantity, properties).
- 8) A specification of up-to-date contact details<sup>\*)</sup> for the competent air pollution authorities. The method and scope regarding the submission of reporting on an accident or breakdown to air protection authorities, including the time limits and responsible positions (persons). The method for the internal forwarding of information about breakdowns and accidents.
- 9) Method for preventing accidents and breakdowns<sup>\*)</sup>. Dates of inspections, checks and maintenance of the facilities of separators (daily, weekly, quarterly, half-yearly and annual), or other facilities and technology serving for air protection or decisive for the atmosphere. A specification of the method for the training of operating staff and responsible persons.
- 10) The method and frequency for the adjusting of equipment for fuel combustion.

- 11) A definition of breakdowns with an impact on the air and the elimination thereof, time limits for the elimination of breakdowns for specific source technology, and terms and conditions for taking a source out of operation.
- 12) A definition of accidents with an impact on the air and the elimination thereof for specific source technology, terms and conditions for taking a source out of operation.
- 13) A specification of measures which are or will be adopted by the operator to lessen the consequences of anticipated accidents and breakdowns.
- 14) A specification of the operator's processes in handling accidents and the elimination of breakdowns, including systems for the restriction or stoppage of operations at a facility.
- 15) Supplying information<sup>\*)</sup> to the public during accidents.
- 16) Exceptional and special provisions and arrangements (research, averting a risk to another element of the environment, emergency ventilation, extinguishing fires, elimination of the causes or consequences of hazardous epidemics, natural disaster or other crisis situation, inertization, fire drills, etc.).
- 17) Situations, operations and conditions - non-fulfilment of specified emission limits (principles - specified emission limits will not be fulfilled (must be justified and evidenced) in cases of defined breakdowns, defined accidents, when technology is being put into operation or during the downtime of technology over a specified period, during the adjusting of technology).
- 18) The signature of the statutory representative or his authorized person, the validity of the operating rules, quashing provisions, decisions of the inspecting authority.
- 19) The method for the keeping and inspection of information, binding for the monitoring of the adopted emission reduction scheme, the scheme for the implementation of best agricultural practice, the fulfilment of the emission ceiling or a plan for the reduction of combustion source operations.

\*) Note: information labelled with an asterisk may be processed in a separate part of the operating rules as joint for all sources of a single operation under § 2, letter cc).

## MEASUREMENTS OF THE DARKNESS OF SMOKE

### *A. Measurement of the darkness of smoke by means of the Ringelmann method*

1. This method is based on a comparison of the darkness of a smoke plume with the corresponding degree on the Ringelmann scale by means of the naked eye. The darkness of the colouring of the smoke plume approximately corresponds to the concentration of soot, fly ash and other particles.
2. The Ringelmann scale is composed of five square fields. In each field, on a white background there is a rectangular network of black lines of a such thickness and density of network so that the field corresponds to a certain percentage of black colour on a white background.
  3. Grades 0 to five on the Ringelmann scale are distinguished
    - a) grade 0 is composed of a purely white field with a defined reflectivity of light of 80%,
    - b) grade 1 corresponds to 20% black colour on a white background,
    - c) grade 2 corresponds to 40% black colour on a white background,
    - d) grade 3 corresponds to 60% black colour on a white background,
    - e) grade 4 corresponds to 80% black colour on a white background,
    - f) grade 5 corresponds to 100% black colour on a white background and serves for verification of the optical properties of the Ringelmann scale; the black colour used for printing the scale must have reflectivity of light of 5%.
4. The optical properties of the Ringelmann scale used for the measurement must be verified.
5. A measurement of the darkness of smoke in accordance with this method is carried out by the observer from a distance of 150 to 400 m from the observed stack. The direction of the smoke plume rising from the stack should be approximately at a right angle towards the direction of observation. The background of the smoke plume should be composed of the dispersed light of the sky during the day; an observation cannot be carried out against the sun or against a developed area or surrounding terrain. During the measurement, the observer holds the Ringelmann scale in his freely stretched arm so that the network of individual fields merges into the different degrees of grey colour. A comparison of the scale with the smoke plume at the point where the smoke exits from the top of the stack the level of the darkness of the smoke is determined.
6. During each measurement 30 readings are carried out at regular half-minute intervals. The duration of one reading is 5 seconds. The measurement shall be evaluated as the average darkness of the smoke from thirty readings.

## *B. Measurement of the darkness of smoke by means of the Bacharach method*

1. This method is based on a comparison of the circular colour stain acquired by filtering a prescribed quantity of flue gases through filter paper with standard stains of the Bacharach scale. The darkness of the colouring of the smoke plume approximately corresponds to the concentration of soot, fly ash and other particles.
2. Facilities for this measurement are composed of a sampling probe with an inner diameter of 6 mm with a maximum derogation of 0.1 mm, filter paper, an extraction pump with a lifting volume of 0.163 dm<sup>3</sup> with a maximum derogation of 0.007 dm<sup>3</sup>, and the Bacharach scale.
3. The lifting volume of the extraction pump and the optical properties of the Bacharach scale used for the measurement must be verified.
4. Measurements of the darkness of smoke in accordance with this method are carried out by sampling of flue gases by means of a probe from the flue gas ducting. Clean filter paper is inserted into a slot in the pump and by tightening it the tightness of the connection is ensured. The extraction probe is inserted into the flue gas ducting vertically to the direction of the flow of combustion products, as far as possible in a direction towards the centre (the location of the probe must be such that the sample is extracted from the main flow of the combustion products). Ten complete lifts of the pump are carried out to extract the prescribed sample of combustion products of 1.63 dm<sup>3</sup> with a maximum derogation of 0.071 dm<sup>3</sup>. The lifts of the pump are carried out freely but so that the entire sample is collected in a time shorter than three minutes. After the sample has been collected, the filter paper is loosened and taken out; the produced stains must be circular with a diameter of 6.0 mm with a maximum derogation of 0.1 mm. The darkness of the stain is compared with the darkness of the stain on the Bacharach scale.
5. During each measurement 3 collections are carried out at regular intervals of 5 minutes. A measurement is evaluated as three separate collections.

## REPORT ON AN AUTHORIZED MEASUREMENT

The report must contain at least the following information

1. Introduction - contains a description of the requirements, the method of implementation, the identification of the supplier, and any cooperation with sub-suppliers,
2. Purpose of the measurement - contains information about the purpose of the measurement, or information about the purpose and method of use of the measurement,
3. Description of facilities - contains available technical data about the equipment, on which the measurement is carried out, and where appropriate brief comments regarding the technology and the process of production operations in relation to the measurement, and if necessary a diagram of the measured equipment,
4. Method of measurement - contains detailed information about the devices used, the processes and methodology of the measurement, the processes of acquiring and processing samples and information about the metrological connections of the measurement, an evaluation of the measurement, and where appropriate a diagram of the measuring location,
5. Course of the measurement - contains information about the course of the measurement, the collection of samples, the monitoring of the parameters of the operation of the measured source, technological operations in progress, and the effects which could have an impact on the precision and correctness of the measurement,
6. Results of the measurement - contains an overview of the results of the measurement of mass concentrations of pollutants expressed in a form directly comparable with emission limits for the measured source, the results of the measurement of the flow rate of waste gases, the mass flow rate of pollutants and the specific production emission, (if a specification of the value of the relative quantity is practically possible), including an expression of uncertainties and the validity of the measurement, and other measurements – especially the oxygen content and water vapours in waste gas and the physical quantities characterizing the condition of the waste gas, especially its temperature, pressure and density,
7. Used literature - contains list of literature, laws, regulations, technical standards and methodological processes to which there is a reference in the text,
8. Used magnitudes and symbols - contains a list of symbols, a description of the magnitudes and the relevant unit,
9. Tables and annexes - contain overviews of measured and calculated values arranged in tabular and graphical form, and if appropriate brief comments on them.
10. An evaluation of the results of a measurement in accordance with point 6 and their comparison with values of emission limits valid at the source on the date of the measurement. This comparison of the results of the measurement must be specified in the report as a separate part and must be processed in accordance with the outline given to authorized persons under § 15 of the Act by the inspecting authority.

## REQUIREMENTS REGARDING AN APPLICATION FOR PERMIT

Explanations regarding the Annex:

**a) For the purposes of this Annex the expressions 'new source' and 'existing source' are used.**

- **New source = a source which is either at a stage of project preparation, or which has not yet been granted permit to operate (it is not yet operated)**
- **Existing source = a source which is already operated on the basis of hitherto permit, no matter how long.**

**b) An air protection authority need not demand documents from an applicant which it already has available, or which are evident from the presented aggregate operating or operating records, or which do not have a relationship to the subject or essence of the application.**

**1. The requirements of an application for permit in the case of sources in accordance with a special legal regulation<sup>1)</sup>, with the exception of waste incineration plants and facilities approved for waste co-incineration.**

The air protection authority granting permit in accordance with the Act requires the following documentation with the application:

- 1.1. A specification of the cadastral territories in which the investment will be realized (new source), or has already been built (existing source).
- 1.2. A complete list of all air pollution sources located in the territory of the source of air pollution, including a specification of all stacks, exits or outlets from the facility for emissions reduction. In the case of new sources this information is part of the project. A detailed technical description of all air pollution sources at the sources which the applicant operates. For an assessment of technology and facilities it is necessary to add at least the following information: a precise specification of the facilities, by name and type, the name and address of the manufacturer of the equipment, a detailed technical description of the equipment, the technical parameters of the equipment.
- 1.3. The actual project, including its name and identification specification, which is the subject of the application, provided that it is a new source. The materials must contain inter alia information about the precise location of the construction, the investor, the processor of the project and other project documentation - especially a technical report. A detailed technical description of the entire technological equipment, the processes carried out there and technical parameters - especially the capacity of the equipment, the mass flow rates of individual input and output materials, the consumption of energy, etc., must be evident from the material
- 1.4. In the case of an existing source, valid drawn and technical documentation for the structures and the technology of the sources, operating regulations, technological regulations and rules,

and other materials necessary so that a detailed technical description of the entire technological equipment, processes carried out at it, and technical parameters - especially the capacity of the equipment, the mass flow rates of individual input and output materials, the consumption of energy, etc., are evident.

- 1.5. The emission limits which are set for all existing sources as at the date of the application for permit. Also, the approved emission reduction plans or approved plans for the implementation of the principles of best agricultural practice in the case of an existing source, provided that they are applied.
- 1.6. The operating rules of an existing source (sources) processed according to § 11, paragraph 2 of the Act, or their proposals in the case of new sources. Also, the regulating rules in the case of existing sources, provided that they are processed under the Act.
- 1.7. Information on the aggregate operating records of air pollution sources for the last three years in the case of existing sources.
- 1.8. Proof that the investor or operator (existing source) is aware of the immission situation and the dispersion conditions at the site of the anticipated implementation. Its evaluation or forecast (new source) of the specific impact of the operation of the investment on air quality, evidenced by a dispersion study or by an expert opinion if stipulated by law.
- 1.9. Information regarding the planned modernization of an existing plant (source). A quantification of the reduction in the emissions of the existing plant (source) must be specified.
- 1.10. An opinion on whether a project for the investment of a new source or documentation of an existing source contains a detailed technical solution for air protection. A description according to the project (new source), in the case of an existing source a detailed description of the current technical solution should be submitted. Proof that the project investment (new source), or the condition of the facilities (existing source) ensure the diversion of waste gases into the external atmosphere in a controlled manner, evidenced by information on the technical solution, the number and heights of exits and stacks, the facilities installed for trapping substances contaminating the air, which must be installed to ensure the fulfilment of emission limits, and on facilities for the prevention of uncontrollable leakage of pollutants into the external atmosphere (e.g. by under-pressure or sealing). In the case of existing sources, supply information about the current technical and technological conditions in the same scope.
- 1.11. Detailed information about providing the determination of emissions of substances polluting the air. Information about the number and location of measuring sites for the determination of the emission concentrations of substances polluting the air and of the mass flow rate of emissions.
- 1.12. Proof that an investment (new source) or existing facilities (existing source) are listed as best available technology (BAT) from the aspect of air protection and in which reference

document, and in the case of large and medium-sized sources a comparison with best known technology.

- 1.13. Reference information on earlier installations of identical technology abroad, and if the investor's company contributed to them, whether it is possible to consider the project as analogous with the investment project in the Czech Republic..
- 1.14. A specification of all pollutants which will be transferred into the external atmosphere during the operation of the investment, including substances which will be emitted under transition conditions (start-up, stoppage of operations) or in the event of chance phenomena or accidents. In the case of existing sources, supply information about current emissions in the same scope.
- 1.15. Information about the use of substances damaging the ozone layer of the Earth, specified by law in the case of the construction or operation of an investment (new source) or about the actual use and handling these substances in the operation of a existing facility. If such substances are used, supply a complete list of the types and quantities of these substances.
- 1.16. Information on protection of surroundings of the investment (new source) or existing source from nuisance emissions of odorous substances. Information whether odorous substances arise due to the operation of facilities, and if so a specification thereof and description of the method used to trap them.
- 1.17. Reports on the authorized determination of substances contaminating the air - measuring reports in accordance with the Act and this Decree.
- 1.18. A specification of detailed specific values of the parameters mentioned in the following table:

Enquiries to ensure the protection of air from emissions of individual pollutants or their groups.
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**Explanations regarding the table:**

1. In the case of individual items, state the anticipated (new source) or actually achieved (existing source) mass quantity of emissions of the substance in question over a unit of time during the standard operation of facilities at the investment at nominal output, their guaranteed maximum concentration in waste gases or in waste air at the place of output from the facility into the external atmosphere. **(Enter below for each relevant pollutant in line 1).**
2. Describe the method for the trapping or reduction of emissions of the relevant substance, e.g. the types, names and technical parameters of filters, separators, scrubbers, incinerators, catalysers, etc. **(Enter in line 2).**
3. Evidence in a suitable manner that the projected process for the trapping or reduction of emissions of the relevant substance corresponds to best available equipment requirements. **(Enter in line 3).**
4. Cross the boxes for pollutants whose occurrence you are not anticipating.



Sulphur dioxide	1	t/year	mg/Nm <sup>3</sup>
	2		
	3		
Nitrogen oxides	1	t/year	mg/Nm <sup>3</sup>
	2		
	3		
Ammonia (NH <sub>3</sub> )	1	t/year	mg/Nm <sup>3</sup>
	2		
	3		
Carbon dioxide	1	t/year	mg/Nm <sup>3</sup>
	2		
	3		
Volatile organic compounds VOC	1	kg/year	mg/Nm <sup>3</sup>
	2		
	3		
Heavy metals and their compounds	1	g/year	mg/Nm <sup>3</sup>
	2		
	3		
Particulate matter	1	t/year	mg/Nm <sup>3</sup>
	2		
	3		
Asbestos (suspended particles, fibres)	1	g/year	mg/Nm <sup>3</sup>
	2		
	3		
Chlorine and its compounds	1	kg/year	mg/Nm <sup>3</sup>
	2		
	3		
Fluorine and its compounds	1	kg/year	mg/Nm <sup>3</sup>
	2		
	3		
Arsenic and its compounds	1	g/year	mg/Nm <sup>3</sup>
	2		
	3		
Hydrogen cyanide and cyanides	1	g/year	mg/Nm <sup>3</sup>
	2		
	3		
Substances for which it has been	1	g/year	mg/Nm <sup>3</sup>
	2		

demonstrated that they report carcinogenic or mutagenic properties or properties which may affect reproduction through the air  Note: Give a more detailed description of the problems relating to the incidence of these substances	3		
Persistent organic pollutants (especially polychlorinated dibenzodioxins and poly-chlorinated dibenzo-furans).	1	g/year	ng/Nm <sup>3</sup>
		g/year	ng/Nm <sup>3</sup>
		g/year	ng/Nm <sup>3</sup>
	2		
	3		

1.19. The types and manufacturer of additional equipment at sources which forms partial technological units with these sources, provided that they have an effect on the emission of substances polluting the air.

1.20. Expert opinions in accordance with the Act where prescribed.

1.21. Dispersion studies in accordance with the Act where prescribed.

1.22. In the above-mentioned documents the following inter alia must be specified:

- a) A specification of the burners used at the equipment of individual air pollution sources, their types, manufacturer, parameters, the fuel used, certificates, and measuring reports on the determination of emissions carried out on these burners.

- b) A technical description and parameters of combustion equipment for process heating, especially information about the volume and composition of the combustion products discharged into the air and a detailed description of the heat system.
- c) A specification of combustion sources used to supply facilities with energy. Their heat output (power), manufacturer, names and types.
- d) Technical descriptions of other additional equipment which are part of the technological unit, provided that they have an effect on the emission of substances polluting the air (facilities for the storage of liquid hydrocarbons, facilities for the incineration of excessive gases).
- e) A precise specification of the composition of input natural and artificial raw materials, fuel, waste, chemical substances and products, volatile organic compounds, regulated substances and operating refills handled in the operation of facilities, with a specification of binding regulations appointing requirements regarding their properties and documents which relate to them in accordance with special legal regulations. A description of the method providing their stable properties and their inspection especially with regard to the possibility of an occurrence of hazardous emissions of persistent organic pollutants or heavy metals. State their total and specific consumption during the operation of facilities at nominal and ordinary operating output. For volatile organic compounds, evidence their detailed mass balance from processes applying organic solvents in accordance with a special legal regulation<sup>1)</sup>.
- f) An opinion from the processors of the dispersion study and the expert opinion on whether the project (source) or emission properties of the facilities of a very large source, including all sources of air pollution which pertain to this source, ensure the fulfilment of the immission limits specified for the pollutant, including odorous substances, so that their occurrence in concentrations causing a nuisance to the population in the intermediate areas of adjoining municipalities, or in ecosystems which are located in its emission trace is ruled out.
- g) If waste is handled in the operation of facilities (does not relate to combustion or waste co-incineration) and if this handling leads to emissions into the air, give a detailed description of all methods of handling this waste (from the transfer of waste to the facilities to the final handling of the source's own waste and residues).

## **2. Details regarding the content of an application for permit and regarding documentation for permit issued in accordance with § 17, paragraphs 1 and 2 of the Act for waste incineration plants and facilities approved for waste co-incineration**

2.1 An application under § 32 hereof contains in particular:

- (a) basic information about the applicant and characteristics of the incineration plant or co-incineration facility, such being
  - the name of the statutory representative of the applicant, its registered office, and its relationship to the facilities (designer, manufacturer, investor, future operator, or authorized

person and by whom),

- in the case of an application for permit to operate, the name of the authorized natural person for the control of operations at the incineration plant or co-incineration facility,
- the location of the facility structure,
- the anticipated method of use of the facilities (e.g. hazardous waste incineration plant, municipal waste incineration plant, co-incineration facilities for hazardous waste),
- the nominal capacity,
- the anticipated operating use of the incineration plant or co-incineration facility;

(b) a technical description of the facility by individual parts with a specification of the equipment manufacturer, the year of production, the material execution and the nominal capacity (scope), such being

- weights, storage tanks, facilities for the treatment of waste prior to combustion - sorting, mixing, drying, crushing, etc.,
- the combustion units of a waste incineration plant or co-incineration facilities by individual level,
- facilities for the diversion of heat - heat exchangers, facilities for the dissipation of heat, etc.,
- equipment for the reduction of pollutant emissions and their effectiveness, - facilities for the diversion of combustion products into the atmosphere - stacks, emergency stacks, etc.,
- equipment for the continuous measurement of pollutant emissions and operating parameters,
- equipment serving for the storage and treatment of waste technological water and waste after incineration,
- an opinion from the water supply authority regarding waste water from the cleaning of waste gases;

(c) a technological description of individual operations, such being

- the receipt of waste - weighing, sampling, analyses of collected samples, archiving, etc.,
- the storage of waste in storage tanks, methods for the management of waste gases from waste storage tanks,
- the treatment of waste prior to combustion - sorting, mixing, drying, crushing, etc.,
- the dispensing of waste into furnaces or the combustion chambers of a waste incineration plant or co-incineration facility, including the method for the determination of the mass flow rate of waste, the mass flow rate of auxiliary and other fuel, or processed raw materials and products,
- the actual combustion – the conditions of combustion processes at the individual levels of combustion, systems for the start-up and shutdown of operations, possible extraordinary operating conditions,
- methods for the elimination of ash, slag and other waste - processes for the cleaning of combustion products,
- methods for the diversion of combustion products into the atmosphere,
- methods for the continuous measurement of emissions of individual pollutants, operating quantities and feedback in the control of the combustion process and the process of cleaning combustion products,
- the measurement of pollutants by periodic measurement,
- a specification of the quality of waste technological water prior to and after the treatment thereof,
- the method for the management of waste water approved by the water supply authority and

of waste after incineration,

- the method for the determination of total organic carbon in ash and in slag;

(d) a specification of inputs and outputs; such being

- incinerated waste, including a specification of the codes of the waste (the classification of waste into groups, a specification of hazardous properties, constituents and their content in waste which makes the waste hazardous, a specification of the consistency of waste, the humidity, the minimum and maximum calorific value and the mass quantity of individual types of waste) and auxiliary fuel,

- other fuels spent with the waste in a co-incineration facility,

- auxiliary chemical products, e.g. additives, sorbents, reaction components of absorptions solutions,

- emissions of pollutants, their concentration and their dispersion in the atmosphere,

- waste water - concentration and mass flow rates of pollutants prior to and after their treatment, an opinion from the water supply authority,

- residues, including the content of total organic carbon in ash and in slag;

(e) the method for the use of heat arising during the combustion or co-incineration of waste, the heat output of equipment and the proportion of heat arising through the combustion of waste in the case of waste co-incineration.

## 2.2 Permit documentation under § 32 hereof

(a) Permit to locate the structure of a waste incineration plant or co-incineration facilities or to construct facilities may only be issued to an applicant who, in his application and in prescribed parts of the application, evidences that the planned construction of the facilities will be by best available technology and will fulfil, at the least, any and all requirements stemming from the structure and its operation from generally binding legal regulations regulating air protection and in the area affected by the structure the permissible level of air pollution will not be disturbed.

(b) Permit to operate a waste incineration plant or co-incineration facilities or permit for the co-incineration of waste in existing combustion facilities is issued to an applicant who is a holder of valid permit to locate the structure of a facility and permit to construct the facility, or who is a holder of permit to change the operation of a facility, who has constructed facilities or made a change to facilities in accordance with issued permits and evidenced that the operation of the waste incineration plant or co-incineration facilities will be controlled by an authorized natural person.

(c) The authority competent to issue permit shall give, in the permit, a telling description of the facility in respect of which permit is issued, a specification of the incinerated (co-incinerated) waste, the mass quantity of the individual types of waste, binding terms and conditions for the takeover, storage and treatment of waste, the sampling and analysis of received waste, the terms and conditions for the operation of a waste incineration plant or co-incineration facility, the terms and conditions for the measurement of pollutant emissions into the air and water, the methods for the management of waste water and waste, and appoints emission limits.

**VERY LARGE SOURCES OF POLLUTION AND THE FREQUENCY OF PERIODIC MEASUREMENTS OF EMISSIONS IN THE CASE OF THESE SOURCES**

**Explanations regarding the Annex:**

1. This Annex gives a complete list of very large air pollution sources and the frequency of periodic measurements of emissions in the case of these sources for the implementation of § 8, paragraph 2, letter a) hereof.
2. Unless a special legal regulation<sup>1)</sup> stipulates otherwise, at issue are periodic measurements for the equipment of the nominal technological equipment at a very large source corresponding to the name of the source specified in the following table. If there are other sources of pollution of different technology (e.g. an auxiliary heat equipment) in the complex of a very large source which form a joint source with the very large source, they are subject to emission limits and other terms and conditions of operation laid down for them under a special legal regulation<sup>1)</sup> as a large, medium-sized or small source of air pollution.
3. If the words 'according to § 8, paragraph 2, letter a) hereof' are specified in the right-hand column of the table, a periodic measurement is carried out twice per calendar year, but not earlier than three months as of the date of the previous measurement, provided that the operator does not have a duty to measure pertinent pollutant continuously. The first periodic measurement must be carried out by 31 March 2003.
4. If the words 'in accordance with a special legal regulation' are specified in the right-hand column of the table, the measurement is carried out at the frequency specified in the corresponding special legal regulation<sup>1)</sup>. This especially applies to waste incineration plants and facilities for waste co-incineration and very large incineration sources.
5. If the words '1 x per calendar year' are specified in the right-hand column of the table, a periodic measurement is carried out once per calendar year, but not earlier than six months as of the date of the previous measurement, provided that the operator does not have the duty to measure the relevant pollutant continuously. The first periodic measurement must be carried out within one year of the date the Act enters into effect. The procedure is analogous to that set forth in § 8, paragraph 2, letter b) hereof.
6. If the words '1 x every 3 calendar years' are specified in the right-hand column of the table, a periodic measurement is carried out once every three calendar years, but not earlier than eighteen months as of the date of the previous measurement, provided that the operator does not have the duty to measure the relevant pollutant continuously. The first periodic measurement must be carried out within three years of the last measurement prior to 1 June 1999, and no later than 1 June 2003.
7. The table shall not apply to the measurement of odorous substances, which this Decree and a special legal regulation regulate differently.

**List of very large air pollution sources and the frequency of periodic measurements of emissions in the case of these sources:**

Name of very large source	Frequency of periodic measurement
Very large combustion source	in accordance with a special legal regulation
Production and refining of gases and mineral oils	1 x per calendar year
Production of coke (coke-oven batteries)	1 x per calendar year
Facilities for the gasification and liquefaction of coal	according to § 8, paragraph 2, letter a) hereof
Facilities for the roasting or sintering metal ore (including sulphide ore)	1 x per calendar year
Facilities for the manufacture of pig iron or steel (from primary or secondary raw materials), including continuous casting, with a capacity greater than 2.5 t per hour	1 x per calendar year
Facilities for the processing of ferrous metals, such being:	
hot rolling mills with a capacity greater than 20 t of crude steel per hour,	1 x per calendar year
forging shops with hammers of an energy greater than 50 kJ per hammer, where consumption of heat energy is greater than 20 MW,	1 x per calendar year
application of protective coatings from molten metals with a processed quantity greater than 2 tonnes of crude steel per hour.	according to § 8, paragraph 2, letter a) hereof

Name of very large source	Frequency of periodic measurement
<b>Foundries of ferrous metals with a production capacity greater than 20 tonnes daily</b>	<b>1 x per calendar year</b>
Facilities for the metallurgy of non-ferrous metals for the manufacture of crude non-ferrous metals from ore, concentrates or secondary raw materials by means of metallurgical, chemical or electrolytic processes,	according to § 8, paragraph 2, letter a) hereof
Facilities for the metallurgy of non-ferrous metals for smelting, including the casting of alloys, non-ferrous metals, including re-melted products (refining, production castings, etc.), with a capacity of smelting greater than 4t daily in the case of lead and cadmium or 20 t daily in the case of all other metals.	according to § 8, paragraph 2, letter a) hereof



Name of very large source	Frequency of periodic measurement
Facilities for the surface treatment of metals and plastics using electrolytic or chemical processes, if the content of the baths is greater than 30 m <sup>3</sup>	1 x per calendar year
Facilities for the manufacture of cement clinker in rotary furnaces with a production capacity greater than 500 t daily or for the manufacture limestone in rotary furnaces with a production capacity greater than 50 t daily or in other furnaces with a production capacity greater than 50 t daily. Facilities for the processing of magnesite	according to § 8, paragraph 2, letter a) hereof
Facilities for the manufacture of asbestos and asbestos-based products, repair and demolition work on buildings and facilities containing asbestos and production products containing asbestos	according to § 8, paragraph 2, letter a) hereof*)
Facilities for glass production, including glass fibres, with a smelting capacity greater than 20 t daily	1 x per calendar year
Facilities for the smelting of mineral materials, including the production of mineral fibres, with a smelting capacity greater than 20 t daily	1 x per calendar year
Facilities for the manufacture of ceramic products by firing, especially tiles, bricks, fireproof blocks, wall tiles, earthenware or porcelain with a production capacity greater than 75 t daily and/or with a furnace capacity greater than 4 m <sup>3</sup> and with a charge density greater than 300 kg/m <sup>3</sup>	1 x per calendar year
Chemical industrial facilities for the manufacture of basic organic chemical substances, such being:	
Simple hydrocarbons (linear or cyclical, saturated or unsaturated, aliphatic or aromatic),	1 x per calendar year

Name of very large source	Frequency of periodic measurement
organic compounds containing oxygen, such as alcohols, aldehydes, ketones, carboxyl acids, esters, acetates, ethers, peroxides, epoxide resin,	1 x per calendar year
organic compounds of sulphur,	according to § 8, paragraph 2, letter a) hereof
organic compounds of nitrogen, such as amines, amides, nitroderivates, nitrils, cyanate, isocyanate, organic compounds of phosphorous,	according to § 8, paragraph 2, letter a) hereof 1 x per calendar year
Halogenderivates of hydrocarbons,	according to § 8, paragraph 2, letter a) hereof
organometal compounds,	according to § 8, paragraph 2, letter a) hereof
basic plastics (based on synthetic and natural polymers),	1 x per calendar year
Synthetic rubbers,	1 x per calendar year
Dyes and pigments,	1 x per calendar year
surface active substances and surfactants.	1 x per calendar year
<b>Chemical industrial facilities for the manufacture of basic inorganic chemical substances, such being:</b>	
gases, such as ammonia, chlorine or hydrogen chloride, fluorine or hydrogen fluoride, carbon oxides, sulphur compounds, nitrogen oxides, hydrogen, sulphur dioxide, carbonyl chloride,	according to § 8, paragraph 2, letter a) hereof
acids, such as chromic acid, hydrogen fluoride, phosphoric acid, nitric acid, hydrogen chloride, sulphuric acid, oleum, sulphurous acid,	according to § 8, paragraph 2, letter a) hereof
principles, such as ammonium hydroxide, potassium hydroxide, sodium hydroxide,	1 x every 3 calendar years
salts, such as ammonium chloride, chlorate of potassium, carbonate of potassium, sodium carbonate, parborate, silver nitrate,	1 x every 3 calendar years

<b>Name of very large source</b>	<b>Frequency of periodic measurement</b>
non-metals, oxides of metals or other inorganic compounds, such as carbide of calcium, silicon, carbide of silicon.	1 x per calendar year

Name of very large source	Frequency of periodic measurement
<b>Chemical industrial facilities for the manufacture of fertilizers based on phosphorous, nitrogen and potassium (simple or mixed)</b>	<b>according to § 8, paragraph 2, letter a) hereof</b>
<b>Chemical industrial facilities for the manufacture of basic resources for the protection of flora and biocides</b>	<b>according to § 8, paragraph 2, letter a) hereof</b>
<b>Industrial facilities using chemical or biological processes for the production of basic pharmaceutical products</b>	<b>according to § 8, paragraph 2, letter a) hereof</b>
<b>Chemical industrial facilities for the manufacture of explosives</b>	<b>1 x every 3 calendar years</b>
<b>Incineration plant and co-incineration facilities of hazardous waste in accordance with a special legal regulation<sup>6)</sup> with a nominal operating capacity greater than 10 tonnes of hazardous waste per day</b>	<b>in accordance with a special legal regulation</b>
<b>Incineration plant and co-incineration facilities of municipal waste in accordance with a special legal regulation<sup>6)</sup> with a nominal operating capacity greater than 3 tonnes of municipal waste per hour</b>	<b>in accordance with a special legal regulation</b>
<b>Incineration plant and co-incineration facilities other than hazardous and municipal waste in accordance with a special legal regulation<sup>6)</sup> with a nominal operating capacity greater than 10 tonnes of</b>	<b>in accordance with a special legal regulation</b>

Name of very large source	Frequency of periodic measurement
<b>hazardous waste per day</b>	
<b>Landfills which receive more than 10 t of waste daily or have a total capacity greater than 25,000 t, with the exception of landfills of inert waste</b>	<b>1 x every 3 calendar years</b>
1. 2.	3.
4. Facilities for the use or recycling or regeneration of hazardous waste, including waste oils, or for the disposal of this waste in a manner other than combustion, co-incineration or landfilling	5. 1 x per calendar year
<b>Industrial plants for the manufacture of cellulose from wood or other fibrous materials</b>	<b>according to § 8, paragraph 2, letter a) hereof</b>
<b>Industrial plants for the manufacture of paper and cardboard with a production capacity greater than 20 t daily</b>	<b>according to § 8, paragraph 2, letter a) hereof</b>
<b>Plants for the pre-treatment (operations such as washing, bleaching, mercerization) or dyeing of fibres or textiles, where the processing capacity is greater than 10 t daily</b>	<b>1 x every 3 calendar years</b>
<b>Plants for the tanning of leather and fur, where the processing capacity is greater than 12 t of finished products daily</b>	<b>1 x per calendar year</b>
<b>Food-processing industry, such being these plants:</b>	
abattoirs with a slaughtering capacity greater than 50 t daily,	1 x every 3 calendar years
facilities for treatment and processing for the purpose of the production of food from animal raw materials (other than milk) with a production capacity higher than 75 t of finished products daily,	1 x every 3 calendar years

<b>Name of very large source</b>		<b>Frequency of periodic measurement</b>
	facilities for the treatment and processing for the purpose of the production of food from vegetable raw materials with a production capacity higher than 300 t of finished products daily (at the average for the quarter),	1 x every 3 calendar years
	facilities for the treatment and processing of milk, where the quantity of collected milk is more than 200 t daily (at the average per year)	1 x every 3 calendar years
<b>Facilities for the neutralization or enhancement of animal bodies and animal waste with a processing capacity greater than 10 t daily</b>		<b>1 x per calendar year</b>
<b>Facilities for the intensive breeding of poultry or swine or cattle, such being:</b>		
	40,000 heads of poultry	1 x per calendar year**)
	2,000 heads of swine for slaughtering (above 30 kg)	1 x per calendar year**)
	750 heads of sow	1 x per calendar year**)
	1,000 heads of cattle.	1 x per calendar year**)
<b>Facilities for the surface finishing of substances, items, or products using organic solvents, especially involving approximation, printing, metal-plating, degreasing, waterproofing, re-dimensioning, dyeing, cleaning or impregnation, with a consumption of organic solvents greater than 150 kg per hour or greater than 200 t per year.</b>		<b>according to § 8, paragraph 2, letter a) hereof</b>
<b>Facilities for the manufacture of carbon (by the high-temperature carbonisation of coal) or electrographite by firing or graphitisation</b>		<b>according to § 8, paragraph 2, letter a) hereof</b>

Explanations regarding the table:

\*) The demolition of buildings, structures and installations containing asbestos and the elimination of asbestos or materials containing asbestos, which could lead to the release of asbestos fibres or dust, must be carried out in an isolated environment, the premises of which are separate from the external atmosphere. The transportation and storage of waste containing asbestos fibres or dust must be ensured so that they are not released into the air. Waste containing asbestos fibres or dust must be stored only in landfills assigned for this purpose, where the permanent prevention of the leakage of asbestos into the external atmosphere is ensured.

\*\*\*) If no plan for the implementation of the principles of best agricultural practice is implemented at a stationary source of air pollution.

## **REPORT ON AUTHORIZED MEASUREMENT OF SMALL INCINERATION SOURCES**

The report must contain at least the following information :

1. Introduction - contains basic identification information of the authorized person and operator of the measured source.
2. Purpose of measurement - contains information about the purpose of the measurement of the effectiveness of combustion.
3. Description of facilities – contains available technical data on the facility where the measurement is carried out.
4. Method of measurement - contains detailed information about the devices used, processes and the methodology for the measurement, an evaluation of the measurement, where appropriate a diagram of the measuring location.
5. Course of the measurement - contains information about the course of the measurement, the collection of samples, and any effects which could have an impact on the precision and correctness of the measurement.
6. Results of the measurement of the effectiveness of combustion – contains overviews of measured and calculated values, including tables and annexes, and where appropriate brief accompanying comments.
7. Evaluation of the results of the measurement – contains a comparison of the measured and calculated values with limit information in accordance with a special legal regulation<sup>1)</sup>.
8. Reference to a technical standard (CSN 73 4201 - Stacks and smoke ducts – Design, execution and connection of fuel appliances), in accordance with which inspections of the combustion product routes are carried out.
9. Description of the combustion product routes at a source, where appropriate a diagram of the combustion product route.
10. Detected defects – a list of defects detected, including their classification into a category directly endangering the safety of the combustion product route.
11. Proposed measures – contains a proposal, and where appropriate a description of how it is possible to eliminate detected defects of combustion product route and the dates for the removal of such defects.
12. Conclusion – contains a conclusion of the inspection of combustion product routes.
13. Requirements prescribed to the authorized person by law and by this Decree.

### **Other handling of the measurement report:**

An authorized person handles a report in accordance with § 18, paragraph 2 hereof. The delegated legal person in accordance with this provision is the Chimney-sweepers Association of the Czech Republic, which statistically processes and evaluates reports and the results of measurements and passes on annual overviews of results to the Ministry.

## **TECHNICAL REQUIREMENTS REGARDING A MEASURING DEVICES USED FOR A MEASUREMENT OF THE EFFECTIVENESS OF COMBUSTION AND A**



## MEASUREMENT OF THE QUANTITY OF DISCHARGED SUBSTANCES IN THE CASE OF SMALL INCINERATION SOURCES

A portable measuring device used for authorized measurements of the effectiveness and quantity of discharged substances of small stationary sources of pollution must fulfil the following technical requirements and other terms and conditions specified in points 1 to 5 of this Annex:

1. Requirements regarding the precision, scope and sensitivity of the measurement and the calculation of data – given in the following table:

<b>Measured quantity</b>					
Name	Unit	Precision of measurement ( +, - ) (permissible derogation)	Scope	Resolution	Example of the measurement method
Content of O <sub>2</sub>	[volume %]	0.2% of volume – absolute	From 0 to 21 of vol.%	0.1%	Electro-chemical cell
Content of CO	[ppm]	To 400 ppm .....20 ppm To 2.000 ppm ..... 5% To 10.000 ppm ...10%	From 0 to 10.000 ppm	1 ppm	Electro-chemical cell
Temperature of combustion products	[°C]	To 99.9 °C..... 0.5°C 100°C and more ..... 0.5%	From -10 to + 1.000°C	0.1°C	Thermocouple
Temperature of combustion air	[°C]	<i>not specified</i>	From + 5°C to + 40°C	not specified	Thermocouple
Static pressure in combustion product route	[Pa]	3 Pa	From - 80 to + 80 HPa	1 Pa	Membrane sensor

<b>Calculated data</b>				
Name	Unit	Precision of calculation ( +, - )	Scope	Resolution
Content of CO <sub>2</sub>	%	0.2%	Not specified	0.1%
Flue gas loss	%	Not specified	0 to 120%	0.1%

2. The design of the device shall enable to transfer measured and calculated quantities and information to a computer. The method of transfer (the software of the computer and the device) shall ensure that measured and calculated quantities and information cannot be changed. The operating staff of a device and computer may only enter information about the

place of the measurement. A printer must be connected to the device. A printout from the printer is attached by the authorized person to the report on the measurement.

3. The maintenance of portable measuring devices for the measurement of small incineration sources and ensuring of their correct functioning is carried out by means of processes and in the time limits specified by their manufacturer. Any and all activities carried out in accordance with these processes are recorded in the operating log of the measuring device.
4. Portable measuring devices for the measurement of small sources of pollution must be regularly calibrated, such being in intervals of at least twice per calendar year. A report is drawn up on the calibration and the device is labelled in a visible place with a specification of when calibration was carried out.
5. The methods and method for the measurement of the effectiveness of combustion and the measurement of the quantity of discharged substances of small incineration sources under § 12, paragraph 1), letter f) of the Act are specified in a special legal regulation<sup>1)</sup>.