

Ordinance on the protection of the air (OPair)

Amendment of ...

The Swiss Federal Council hereby decrees:

I

The ordinance of 16 December 1985 on the protection of the air¹ is amended as follows:

Art. 20 (1)(h)

- h. installations for fuels pursuant to Annex 5(2) and (3), with a maximum heating capacity of 350 kW, in particular boilers, heating systems for premises, ovens, chimney inserts, storage space heaters and open chimneys, with the exception of traditional individual installations.

Art. 23

Repealed.

II

Annexes 1 to 5 are amended in accordance with the attached texts.

III

Final provisions of the amendment of...

¹ By way of derogation to Article 10, the authority shall grant cleaning up periods from six to ten years for installations which must be cleaned up pursuant to the amendment of ..., but which already satisfy the preventative emission limits within the meaning of the former provisions of the ordinance. The provisions of Article 10 (2)(a) and (c) are reserved.

² Wood-powered heating systems which entered into service for the first time after the entry into force of this amendment and to which, at the time of authorisation, a limit value of 150 mg/m³ of solid particles applies.

¹ RS 814.318.142.1

(Annex 3(522), must respect the strictest emission limit value fifteen years after authorisation at the earliest.

³ Combustion installations within the meaning of Article 20 (1)(h), may be marketed until 31 December 2007 without proof of conformity.

⁴ Wood-powered heating systems may still be marketed until 31 December 2009 without proof of conformity if they satisfy the requirements of Annex 4. These requirements shall be deemed to have been met if the wood-powered heating systems have obtained the Énergie-bois Suisse "Qualitätssiegel" (seal of quality) label for wood-powered heating systems after 31 December 2003.

IV

This amendment shall enter into force on 1 July 2007.

xx.xx.2007

On behalf of the Swiss Federal Council:

The President of Switzerland, ...

The Swiss Chancellor, ...

General preventative limitation of emissions

Ch. 41

If the mass flow rate is equal to or greater than 0.20 kg/h, emissions in the form of dust may not exceed a total of 20 mg/m³.

Supplementary and derogatory limitation of emissions for certain special installations

Ch. 714 (1)(l)

1. dioxins and furans, expressed in the sum of equivalents of 0.1 ng/m³ toxicity in accordance with standard EN 1948-1²:

Ch. 723

Emissions in the form of dust shall not exceed 20 mg/m³.

Ch. 74 (new)

74 Installations for the incineration of biogenic waste and agricultural products

741 Scope

¹ The current figure shall apply to installations for the incineration or thermal decomposition of biogenic waste and agricultural products, mixed or not with fuel wood within the meaning of Annex 5.

² When such waste and products are incinerated with waste in accordance with ch. 711 or 721, ch. 71 or 72 shall apply.

³ When such waste and products are incinerated with other fuels within the meaning of Annex 5, the limit value of the mixture in accordance with Annex 3(82) shall apply.

⁴ This figure shall not apply to cement ovens (ch. 11).

742 Emission limit values

Emissions shall not exceed the following limit values:

		Heating capacity			
		up to 1 MW	from 1 MW to 10 MW	over 10 MW	
– Reference quantity: the limit values shall relate to an oxygen content in gas effluents of		%vol	13	11	11
– Solid particles in total		mg/m ³	30	20	10
– Carbon monoxide (CO)		mg/m ³	500	250	150
– Nitrogen oxides (NO _x), expressed in nitrogen dioxide (NO ₂) ¹⁾		mg/m ³	250	250	150

¹⁾ For a mass flow rate of 2500 g/h or over

Ch. 81 (2)

² Annex 1(6) shall not apply to sulphur oxide emissions produced by the fuel itself. If coal or “medium” or “heavy” heating oil is used, the sulphur oxide emissions, expressed as sulphur dioxide, must be limited in such a way as to not exceed those produced when using a fuel with a sulphur content of 1% (% mass) which have not been reduced.

Supplementary and derogatory limitation of emissions for combustion installations

Ch. 22(c) and (d)

- c. coal-powered heating systems having a heating capacity not exceeding 70 kW;
- d. wood-powered heating systems having a heating capacity not exceeding 70 kW, provided they are stoked exclusively with pure wood, in its natural state within the meaning of Annex 5(3) (1)(a),(b) or (d).

Ch. 22(e) and (f)

Repealed.

Ch. 24

24 Marking

¹ On installations within the meaning of Article 20, an identity plate displaying at least the following information shall be attached in a visible location:

- a. name and head office of the manufacturer;
- b. designation and type under which the installation is marketed;
- c. manufacturer's number and year of manufacture;
- d. heating capacity, more precisely nominal, or power range in kW.

² The identity plate for oil and gas heating systems within the meaning of Article 20 shall additionally bear the following information:

- a. minimum technical combustion efficiency or maximum permitted losses by gas waste pursuant to Annex 4(3);
- b. with regard to oil-powered heating systems, the NO_x class of the installation, followed, in brackets, by the NO_x emission limit value pursuant to Annex 4(21) of this class in mg/kWh;
- c. with regard to gas-powered heating systems, the NO_x limit value pursuant to Annex 4(21) in mg/kWh.

³ The identity plate for wood and coal heating systems within the meaning of Article 20 shall also include information on the emission limit values pursuant to Annex 4(22), for Carbon Monoxide (CO) and solid particles (dust) in mg/m³.

Ch. 421(1)

¹ Emissions from combustion installations powered by “medium” or “heavy” heating oil must not exceed the following values:

		Heating capacity		
		from 5 MW to 10 MW	from 10 MW to 100 MW	over 100 MW
<i>"Medium" and "heavy" heating oils</i>				
– Reference quantity:				
limit values relating to an oxygen content of gas effluents of				
– Solid particles in total	mg/m ³	3	3	3
– Carbon monoxide (CO)	mg/m ³	20	10	10
– Sulphur oxides (SO _x), expressed as Sulphur dioxide (SO ₂)	mg/m ³	170	170	170
– Nitrogen oxides (NO _x), expressed as Nitrogen dioxide (NO ₂)	mg/m ³	1700	1700	400
– Ammonia and ammonium compounds, expressed as ammonia	mg/m ³	150	150	150
	mg/m ³	30	30	30

Ch. 511 (1)

¹ Emissions from combustion installations stoked with coal, briquettes or coke shall not exceed the following values:

		Heating capacity					
		up to 70 kW	from 70 kW to 350 kW	from 350 kW to 1 MW	from 1 MW to 10 MW	from 10 MW to 100 t	over 100 MW
<i>Coal, briquettes, coke</i>							
– Reference quantity:							
the limit values shall relate to an oxygen content in gas effluents of							
– Solid particles in total:	%vol	7	7	7	7	7	7
– from 1 July 2007	mg/m ³	–	150	150	20	10	10
– from 1 January 2011	mg/m ³	–	150	30	20	10	10
– from 1 January 2015	mg/m ³	–	30	30	20	10	10
– Carbon Monoxide (CO) – Sulphur oxides (SO _x), expressed as Sulphur dioxide (SO ₂): – hearths with a fluidised bed – other heating systems using coal	mg/m ³	4000 –	1000 –	1000 –	150	150	150
– other installations	mg/m ³	–	–	–	1300	1300	400
– Nitrogen oxides (NO _x), expressed as Nitrogen Dioxide (NO ₂)	mg/m ³	–	–	–	1000	1000	400
	mg/m ³	–	–	–	500	200	200

		Heating capacity					
		up to 70 kW	from 70 kW to 350 kW	from 350 kW to 1 MW	from 1 MW to 10 MW	from 10 MW to 100 MW	over 100 MW
- Ammonia and ammonium compounds, expressed as ammonia ¹⁾	mg/m ³	30	30	30	30	30	30

Comments:

- A hyphen in the table shall signify that no limit is specified in Annex 3 or Annex 1. ¹⁾ This emission limit is only valid for combustion installations equipped with a denitrification device.

Ch. 511 (3)

Repealed.

Ch. 513 Sulphur content of coal

In combustion installations with a heating capacity of less than 1 MW, only coal, briquettes or coke in which the sulphur content does not exceed 1 % (% mass) shall be used.

Ch. 522 (1)

¹ Emissions from combustion installations stoked with wood pursuant to Annex 5(3) (1), shall not exceed the following limit values:

		Heating capacity					
		up to 70 kW	from 70 kW to 350 kW	from 350 kW to 600 kW	from 600 kW to 1 MW	from 1 MW to 10 MW	over 10 MW
<i>Fuel wood</i>							
-	Reference quantity: the limit values shall relate to an oxygen content						
	in gas effluents of	%vol	13	13	13	13	11
-	Solid particles in total:						
	- from 1 July 2007	mg/m ³	-	150	150	150	20
	- from 1 January 2009	mg/m ³	-	150	150	30	20
	- from 1 January 2011	mg/m ³	-	150	30	30	20
	- from 1 January 2015	mg/m ³	-	30 ¹⁾	30	30	20
-	Carbon monoxide (CO):						
	- for fuel wood pursuant to Annex 5(3)(1)(a),(b) and (d)						
	- from 1 July 2007	mg/m ³	4000 ²⁾	1000	500	500	250
	- from 1 January 2009	mg/m ³	4000 ²⁾	500	500	500	250

	Heating capacity						over 10 MW
	up to 70 kW	from 70 kW to 350 kW	from 350 kW to 600 kW	from 600 kW to 1 MW	from 1 MW to 10 MW		
– for fuel wood							
pursuant to Annex 5(3) (1)(c)							
- from 1 July 2007	mg/m ³	1000	1000	500	500	250	150
- from 1 January 2009	mg/m ³	1000	500	500	500	250	150
Nitrogen oxides (NO _x), expressed as Nitrogen dioxide	mg/m ³	3)	3)	3)	3)	3)	150
Organic substances in gas form expressed as total carbon (C)	mg/m ³	–	–	–	–	50	50
Ammonia and ammonium compounds, expressed as ammonia ⁴⁾	mg/m ³	–	–	–	–	30	30

Comments:

– A hyphen in the table shall signify that no limit is specified in Annex 3 or Annex 1.

¹⁾ Limit value for solid particles emitted by manual log stoked boilers for fuel wood pursuant to Annex 5(3)(1)(a), with a maximum heating capacity of 120 kW: 150 mg/m³.

²⁾ Not applicable to central heating ranges.

³⁾ See limit value for Nitrogen Oxide, Annex 1(6).

⁴⁾ This emission limit is only valid for combustion installations equipped with a denitrification device.

Ch. 524 (1)

¹ For combustion installations with a heating capacity less than or equal to 70 kW, the emission limit value for carbon monoxide is generally considered to be respected when it is established that the installation is operated within the rules and stoked exclusively with wood in its natural state within the meaning laid down in Annex 5(3) (1)(a),(b) and (d). The authority may request a supplementary measure for carbon monoxide when there is reason to believe that emissions of gas effluents and odours are excessive.

Ch. 524(2)

Repealed.

Standards relating to combustion installations

2 Air quality requirements

21 Oil and gas heating systems

Oil and gas heating systems must fulfil the air quality requirements of determining European standards and respect the emission limit values indicated in the table below.

Type of installation	Determining European Standard ³	Special requirements (emission limit values) for Nitrogen Oxides (NO _x), expressed as Nitrogen Dioxide (NO ₂), and Carbon Monoxide (CO)
Forced draught burner for 'extra light' oil (Art. 20(1)(a))	EN 267	Class EN-3 emission limit values
Automatic forced draught burner for gas fuels (Art. 20(1)(a))	EN 676	For G20 test gas: NO _x : 80 mg/kWh; CO: 60 mg/kWh For G31 test gas: NO _x : 120 mg/kWh; CO: 60 mg/kWh
Boiler equipped with forced draught burners for 'extra light' oil (Art. 20(1)(c))	EN 303 and 304	Class EN-3 emission limit values for forced draught burners for oil
Boiler equipped with forced draught burners for gaseous fuels (Art. 20(1)(c))	EN 303 and 304	For G20 test gas: NO _x : 80 mg/kWh; CO: 100 mg/kWh For G31 test gas: NO _x : 120 mg/kWh; CO: 100 mg/kWh
Boiler and circulation heat generators for gas fuels with atmospheric burners (Art. 20(1)(d))	EN 297, EN 483 EN 625, EN 656 EN 677	For G20 test gas: NO _x : 80 mg/kWh; CO: 100 mg/kWh for G31 test gas: NO _x : 120 mg/kWh; CO: 100 mg/kWh

³ Source: Swiss Standardisation Association (SNV), Bürglistrasse 29, 8400 Winterthur

Type of installation	Determining European Standard	Special requirements (emission limit values) for Nitrogen Oxides (NO _x), expressed as Nitrogen Dioxide (NO ₂), and for carbon monoxide (CO)
Boiler and circulation heat generator with evaporation boilers for 'extra light' oil (Art. 20)(1)(e))	EN 1, EN 303 and 304	Installations having a heating capacity less than or equal to 30 kW: NO _x : 120 mg/kWh; CO: 150 mg/kWh Installations having a heating capacity greater than 30 kW: NO _x : 120 mg/kWh; CO: 60 mg/kWh
Gas-powered water heater with directly heated reservoirs (Art. 20(1)(f))	EN 89	
Gas-powered flow heater (Art. 20(1)(g))	EN 26	

22 Coal and wood heating systems

Coal and wood heating systems must comply with the air quality requirements of the determining European standards and respect the emission limit values indicated in the following table.

Type of installation	Determining European Standard ⁴	Special requirements (emission limit values) ¹⁾ for Carbon Monoxide (CO) and for solid particles (dust)	
		from 1 January 2008	from 1 January 2011
Coal- and log- stoked heating boiler,	EN 303-5 EN 12809	CO: 800 mg/m ³ dust: 60 mg/m ³	CO: 800 mg/m ³ dust: 50 mg/m ³
Wood and coal pellet-stoked heating boiler, automatic loading	EN 303-5 or EN 12809	CO: 400 mg/m ³ dust: 90 mg/m ³	CO: 400 mg/m ³ dust: 60 mg/m ³
Woodchip-stoked boiler, automatic loading	EN 303-5 or EN 12809	CO: 300 mg/m ³ dust: 60 mg/m ³	CO: 300 mg/m ³ dust: 40 mg/m ³

⁴ Source: Swiss Standardisation Association (ASN), Bürglistrasse 29, 8400 Winterthur

Type of installation	Determining European Standard	Special requirements (emission limit values) ¹⁾ for Carbon Monoxide (CO) and for solid particles (dust)	
		from 1 January 2008	from 1 January 2011
Heating of premises using solid fuels	EN 13240	CO: 1500 mg/m ³ dust: 100 mg/m ³	CO: 1500 mg/m ³ dust: 60 mg/m ³
Pellet burners for heating premises	EN 13240	CO: 500 mg/m ³ dust: 50 mg/m ³	CO: 500 mg/m ³ dust: 40 mg/m ³
Individual oven for solid fuels	EN 12815	CO: 3000 mg/m ³ dust: 110 mg/m ³	CO: 3000 mg/m ³ dust: 90 mg/m ³
Central heating oven for solid fuels	EN 12815	CO: 3000 mg/m ³ dust: 150 mg/m ³	CO: 3000 mg/m ³ dust: 120 mg/m ³
Chimney insert and open chimney for solid fuels	EN 13229	CO: 1500 mg/m ³ dust: <u>100 mg/m³</u>	CO: 1500 mg/m ³ dust: <u>60 mg/m³</u>
1) Reference oxygen content:			
- for wood-stoked heating systems 13 %vol;			
- for coal-stoked heating systems 7 %vol			

Ch. 3, introductory phrase

Oil and gas boilers must at least attain the following technical combustion efficiency:

Standards relating to combustibles and fuels

Ch. 11(2) and (3)

Repealed.

Ch. 2

Repealed.

Ch. 3(1) and (2)(a)

¹ The following shall be deemed to be fuel woods:

- a. wood in its natural state and in pieces, including its bark, in particular logs, twigs and cones;
- b. wood in its natural state in a form other than in pieces, in particular wood in shreds, shavings, sawdust, dust from sanding machines and bark;
- c. waste from the wood industry, from the crafts trades as well as large, single-use pallets, provided that the wood is not impregnated with a coating nor covered with a surface sealing in Organo-Halogen Compounds;
- d. wood briquettes or pellets in their natural state, provided that only natural lubricants not causing more serious emissions or emissions other than from wood in its natural state have been used in the manufacture.

² The following shall not be deemed fuel woods:

- a. used wood from the demolition, transformation or renovation of buildings, building site waste, used wood from packaging, old furniture and mixtures of used wood and fuel wood within the meaning of (1);