

► French standards

In terms of air quality, three levels of overlapping standards can be distinguished (European, national and local). All of these regulations has main purposes:

- Assessment of the pollution exposure of the population and vegetation.
- The evaluation of the actions undertaken by the various authorities in order to limit this pollution.
- To inform about air quality.

European directives are transposed into French law.

The main values mentioned in the French regulations are summarized in the tables below:

Pollutants	Limit value	Quality objectives	Recommendation and information threshold	Alert threshold	Critical level
Nitrogen dioxide (NO ₂)	Annual mean: Since the 01/01/10 : 40 µg/m ³ .	Annual mean: 40 µg/m ³ .	Hourly mean: 200 µg/m ³ .	Hourly mean: ► 400 µg/m ³ exceeded on 3 consecutive hours. ► 200 µg/m ³ if the information level has already been reached the day before and the current day, and if a new exceedence is forecasted for the next day.	
	Hourly mean: Since the 01/01/10 : 200 µg/m ³ not to be exceeded more than 18 per year.				
Nitrogen oxides (NO _x)					Annual mean (NO ₂ equivalent) : 30 µg/m ³ (for the vegetation protection).
Sulphur dioxide (SO ₂)	Hourly mean: 125 µg/m ³ not to be exceeded more than 3 per year.	Annual mean: 50 µg/m ³ .	Hourly mean: 300 µg/m ³ .	Hourly mean 500 µg/m ³ exceeded on 3 consecutive hours.	Annual & winter mean (for the vegetation protection) : 20 µg/m ³ .
	Daily mean: Since the 01/01/05 : 350 µg/m ³ not to be exceeded more than 24 per year.				
Lead (Pb)	Annual mean: Since the 01/01/02 : 0,5 µg/m ³ .	Annual mean: 0,25 µg/m ³ .			
Particles with a diameter of 10	Annual mean: Since the 01/01/05 :	Annual mean: 30 µg/m ³ .	Daily mean: 50 µg/m ³ .	Daily mean: 80 µg/m ³ .	

micrometers or less (PM10)	40 $\mu\text{g}/\text{m}^3$.
Carbon monoxide (CO)	Hourly mean: Since the 01/01/2005 : 50 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 35 per year. Maximum daily on a 8-hour mean: 10 000 $\mu\text{g}/\text{m}^3$.
Benzene (C6H6)	Annual mean: Since the 01/01/10 : 5 $\mu\text{g}/\text{m}^3$.

Annual mean:
2 $\mu\text{g}/\text{m}^3$.

Pollutant	Limit value	Quality objectives	Recommendation and information threshold	Alert threshold	Target value
Ozone (O3)		<p>Protection of human Health, on a maximum daily eight-hour mean: 120 $\mu\text{g}/\text{m}^3$ per civil year.</p> <p>Protection of vegetation, AOT40* from May to July 8am to 8pm : 6 000 $\mu\text{g}/\text{m}^3\cdot\text{h}$</p>	<p>Hourly mean: 180 $\mu\text{g}/\text{m}^3$.</p>	<p>Alert threshold for the Human health protection Alert threshold for the Human health protection, on a hourly mean: 240 $\mu\text{g}/\text{m}^3$ per hour</p> <p>Alert threshold for a progressive implementation of emergency measures, hourly means:</p> <ul style="list-style-type: none"> ▶ 1st threshold: 240 $\mu\text{g}/\text{m}^3$ exceeded during 3 consecutive hours. ▶ 2nd threshold: 300 $\mu\text{g}/\text{m}^3$ exceeded during 3 consecutive hours. ▶ 3rd threshold: 360 $\mu\text{g}/\text{m}^3$. 	<p>Protection of human Health: 120 $\mu\text{g}/\text{m}^3$ for the daily maximum on a 8hour average not to be exceeded more than 25 days per calendar year calculated on a 3 year average. This target value is applicable from 2010.</p> <p>Protection of vegetation: AOT 40* from May to July from 8am until 8pm: 18 000 $\mu\text{g}/\text{m}^3\cdot\text{h}$ on a 5 year average. This target value is applicable from 2010.</p>

*AOT40 (expressed in $(\mu\text{g}/\text{m}^3) \cdot \text{hours}$) means the sum of the difference between hourly concentrations greater than 80 $\mu\text{g}/\text{m}^3$ (= 40 parts per billion) and 80 $\mu\text{g}/\text{m}^3$ over a given period using only the one-hour values measured between 8.00 and 20.00 Central European Time (CET) each day.

Polluant	Limit value	Quality objectives	Target value	Exposure reduction target relative to the AEI*2011	Exposure concentration obligation
				Initial Concentration	Reduction target in percent
				<= à 8,5 µg/m ³	0%
				>8,5 and <13 µg/m ³	10%
				>=13 and <18 µg/m ³	15%
				>=18 and <22 µg/m ³	20%
				>= à 22 µg/m ³	All appropriate measures to archive 18 µg/m ³
Particles with a diameter of 2.5 micrometers or less (PM2.5)	Annual mean: 27µg/m ³ decreasing every year by equal annual percentage to reach 25µg/m ³ by 2015.	Annual mean: 10 µg/m ³ .	Annual mean: 20 µg/m ³ .		20 µg/m ³ by AEI* 2015**.

* IEM 2011 : Indicateur d'exposition moyenne de référence, correspondant à la concentration moyenne annuelle en µg/m³ sur les années 2009, 2010 et 2011.

** IEM 2015 : Indicateur d'exposition moyenne de référence, correspondant à la concentration moyenne annuelle en µg/m³ sur les années 2013, 2014 et 2015.

Polluant	Target value* which should be met by the 31st of December 2012
Arsenic	6 ng/m ³
Cadmium	5 ng/m ³
Nickel	20 ng/m ³
Benzo(a)pyrène (used as a tracer of the carcinogenic risk of polycyclic aromatic hydrocarbons - PAHs)	1 ng/m ³

* Averaged over the calendar year of the total content in the PM10 fraction.

Glossaire :

Limit value: a level set on the basis of scientific knowledge with the aim of avoiding, preventing or reducing harmful effects on human health and/or the environment as a whole, to be attained within a given period and not to be exceeded once attained.

Target value: a level fixed with the aim of avoiding, preventing or reducing harmful effects on human health and/or the environment as a whole, to be attained where possible over a given period.

Quality objectives: long-term level to achieve and maintain, except where this is not achievable through proportionate measures to ensure effective protection of human health and the environment as a whole.

Critical level: a level fixed on the basis of scientific knowledge, above which direct adverse effects may occur on some receptors, such as trees, other plants or natural ecosystems but not on humans.

Information threshold: a level beyond which there is a risk to human health from brief exposure for particularly sensitive sections of the population and for which immediate and appropriate information is necessary.

Alert threshold: a level beyond which there is a risk to human health from brief exposure for the population as a whole and at which immediate steps are to be taken by the Member States.