

Developing an indoor air quality certification nationwide would improve public health in general.

This study indicates that each indoor air quality guideline **focuses on evaluating specific parameters** based on the potential benefits of identifying air risks and assessing them. All examined air pollutants are experienced similarly by the countries within one continent, however some **contaminates varied** between guidelines such as carbon dioxide and formaldehyde. **None of the IAQ guidelines looked at all indoor air quality criteria. Latvian legislation does not specify most indoor air pollutants** and there are **no corresponding laws** in connection to indoor air quality for public and private sector.

The available indoor air quality certificates provide an assessment of a wide range of air parameters to meet the customer's needs, **but not all of them are available in Latvia.**

The decision of building owners to purchase technical equipment to ensure and maintain air quality **is voluntary**. This indicates that the end-consumer of IAQ label could be in public and private sector, however maintaining the label requires a homogenous environment, this aspect would be **relatively difficult for a private household.**

Introduction

The world's leading indoor air quality guidelines provide for the identification of certain parameters with a specific limit value based on the latest empirical measurements, however, most of them **do not have legal coverage** and are voluntary. This leads to **unequal assessment of indoor air quality**, because there is an identifiable difference between the limit values set out in the various guidelines

International indoor air guidelines and represented air quality parameters

	LV	ASHRAE	CA	EPA	FI	PHE	NIOSH	OSHA	WHO
CO ₂	1000 ppm (2021)		1000 ppm (2021)		700 ppm*, 900ppm**, 1200 ppm*** (2001)	5000 ppm (2005)	5000 ppm (2019)	5000 ppm (2020)	
CO		25 ppm (2004)	10 ppm ^c (2021)	25 ppm (2009)	2`000 µg/m ³ *, 3`000 µg/m ³ **, 8`000 µg/m ³ *** (2001)	10`000 µg/m ³ (2021)	35 ppm (2019)	50 ppm (2019)	4`000 µg/m ³ (2021)
Formaldehyde		0.081 ppm ^a (2004)	50 µg/m ³ (2021)	0.1 ppm (2021)	30 µg/m ³ *, 50 µg/m ³ **, 100 µg/m ³ *** (2001)	100 µg/m ³ ^a (2019)	0.016 ppm (2019)	0.75 ppm ^b (2019)	100 µg/m ³ ^a (2010)
Acetaldehyde			280 µg/m ³ (2021)	140 µg/m ³ (2020)		1`420 µg/m ³ (2019)			
TVOC		200 µg/m ³ (2004)	200 µg/m ³ (2013)	200 µg/m ³ (2020)	200 µg/m ³ *, 300 µg/m ³ **, 600 µg/m ³ *** (2001)	300 µg/m ³ (2020)			300 µg/m ³ (2010)
NO ₂		0.1 ppm (2020)	20 µg/m ³ (2021)	188 µg/m ³ (2020)		40 µg/m ³ (2020)	1 ppm (2019)	5 ppm (2021)	25 µg/m ³ ^c (2021)
O ₃		100 µg/m ³ (2004)	40 µg/m ³ (2021)	65 µg/m ³ (2020)	20 µg/m ³ *, 50 µg/m ³ **, 80 µg/m ³ *** (2013)	100 µg/m ³ (2021)	0.1 ppm (2019)	0.1 ppm ^d (1978)	100 µg/m ³ (2021)
PM2.5		25 µg/m ³ ^c (2020)		25 µg/m ³ ^c (2020)		25 µg/m ³ ^c (2010)		5`000 µg/m ³ (2004)	15 µg/m ³ ^c (2021)
PM10				50 µg/m ³ ^c (2020)	<20 µg/m ³ (2003)	50 µg/m ³ ^c (2010)			45 µg/m ³ ^c (2021)
Temperature In summer/In winter	20.0–28.0 °C/ 19.0–25.0 °C (2009)	22.5–26.0 °C/ 20.0–23.5 °C (2013)			23–24 °C*;23–26 °C**;22–27 °C***/ 21–22 °C*; 20–22 °C*; 20–23 °C*** (2001)	In winter 20 – 25 (°C) (2005)			
Relative humidity	30-70 % (2009)	40 - 60% / 30 - 60% (2013)	30–80% / 30–55% (1989)		25–45%* (2001)				
Air flow rate	0.05-0.15 m/s (2009)				0.13 m/s*; 0.16 m/s**; 0.19 m/s*** (2001)				0.25 m/s (2013)
Microbiological contaminate			<500 CFU/m ³ (1995)					<1000 CFU/m ³ (1992)	<500 CFU/m ³ (1988)

Note: limit value (last year of approval); a – 30 min exposure limit; b – 15 min exposure limit; c – 24h exposure limit; d – 1h exposure limit; WHO - world health organization; OSHA - Occupational Safety and Health Administration, US; EPA - Office of Environmental Health, US; ASHRAE - American Society of Heating, Refrigerating and Air Conditioning Engineers, US; PHE – Public Health England, UK; CA - Health Canada, Canada; FI - Finnish Society of Indoor air Quality and Climate, Category for IAQ *(S1- The best IAQ), ** (S2 – Good IAQ), *** (S3 – Satisfactory IAQ); LV – Republic of Latvia; NIOSH - The National Institute for Occupational Safety and Health, US