

VOC Emissions Rating Schemes

Summary



- Now: Double testing necessary if a product with low VOC emissions shall be placed on different national markets
- Purpose of this workshop:
 - Know about the different rating systems
 - Start a process of
 - Mutual recognition of low VOC emission labels
 - Mutual recognition of test results, if necessary by changing the respective test methods
- No change expected within few months, but why not within next few years
- No easy task because many experts think that his home system is the only true one

- Comparable elements between Europe and USA:
 - Temperature, relative humidity (23°C / mostly 50% RH)

- Easy to solve differences
 - Geometry of reference rooms
(residential vs. office and class room scenarios)
 - Ventilation in reference rooms
 - Loading factor (m^2/m^3) in reference rooms
 - Can be solved by simple recalculation
 - e.g. double ventilation => 50% air concentration
 - Ventilation and loading in test chamber
 - Can be solved by allowing larger tolerance interval
 - e.g. air change: 0.25 – 1.5 per hour

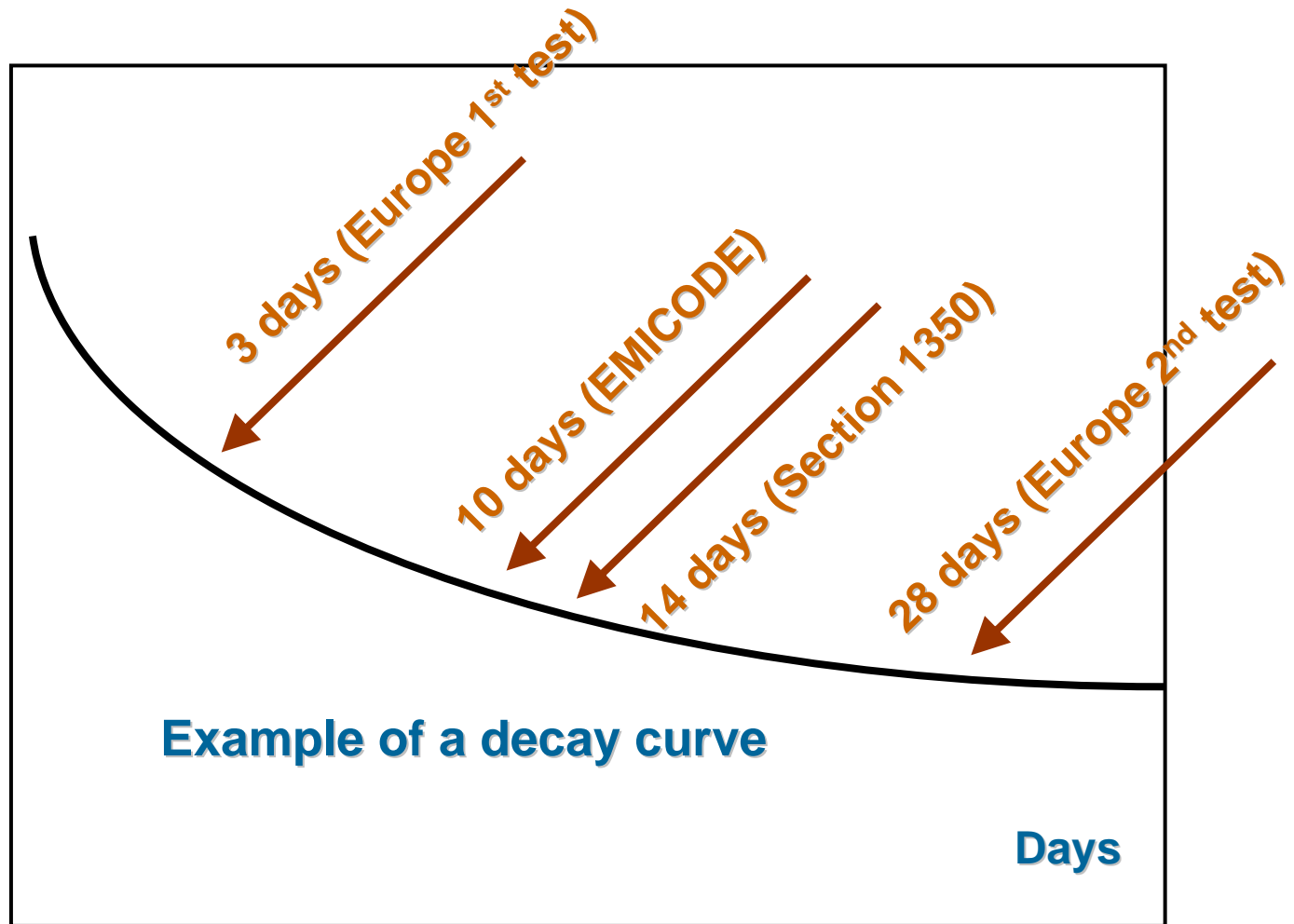
- **Difficult to solve differences**
 - **Limit values**
 - **TVOC or no TVOC**
 - **Single VOC limit values**
 - **Time schedule of testing**
 - **After 3 days plus 28 days?**
 - **After 28 days only?**
 - **After 14 days?**
 - **After 10 days, 7 days,**

	ISO 16000-9	New CEN standard	CA office	CA classroom
Floor m²	7	12	11.1	89.2
Height m	2.5	2.5	2.7	2.6
Volume m³	17.4	30	30.6	231
Loading m²/m³	depending on what product (wall, floor, ...)			
Temperature °C	23	23	23	23
Relative Humidity %	50	50	50	50
Effective air change / h	0.5	0.5	0.675	0.81

	ISO 16000-9	New CEN standard	EN 717-1	CA Section 01350
Size	open	min. 20 l	0.225 – 12 m³	20 – 100 l
Loading, floor	(0.4)	0.4	–	0.3 – 0.7
Loading, wall	(1.4)	1.0	1.0	0.3 – 0.7
Effective air change / h	(0.5)	0.25 – 1.5	1.0	1.0 ± 0.05
Temperature °C	23 ± 2	23 ± 1	23 ± 0.5	23 ± 1
Relative Humidity %	50 ± 5	50 ± 5	45 ± 3	50 ± 5

ISO: The ratio between ventilation and loading is fixed, not absolute values

Emissions



Combination of different tests, examples:

Test Parameter	AgBB, DIBt, Blue Angel	AFSSET French law	EMICODE	Section 1350	M1
TVOC 3 d	X	X —	—	(11 + 12 d)	
TVOC 28d	X	X X	(10 d)	(14 d)	X
TSVOC 28 d	X	— —	—	(11 + 12 d)	
Aldehydes 28 d	X	X X	(1 day)	(14 d)	X
LCI, R value (total LCI)	X	X individual limits	—	CREL	—
Odor	—	—	—	—	After 28 d

**Separately within EU and within US,
Or also across the Atlantic?**

