

# EnVIE Conference

## *"Policies for millions of indoor environments"*

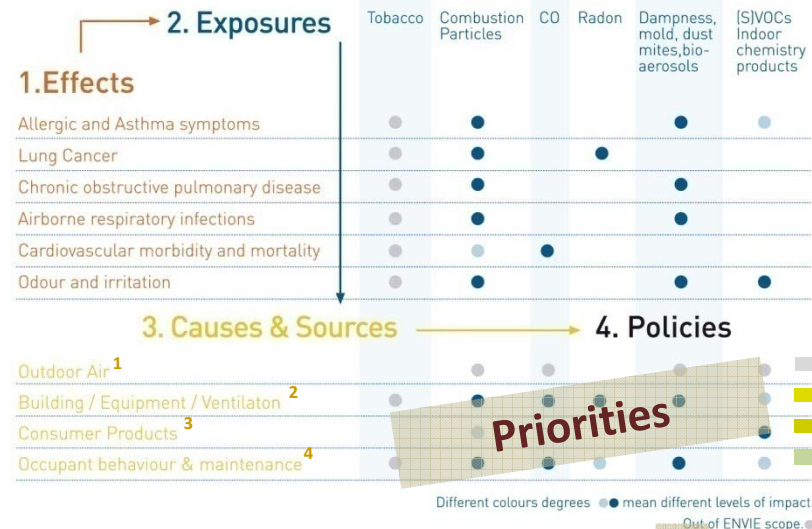


16-17 September 2008, Brussels

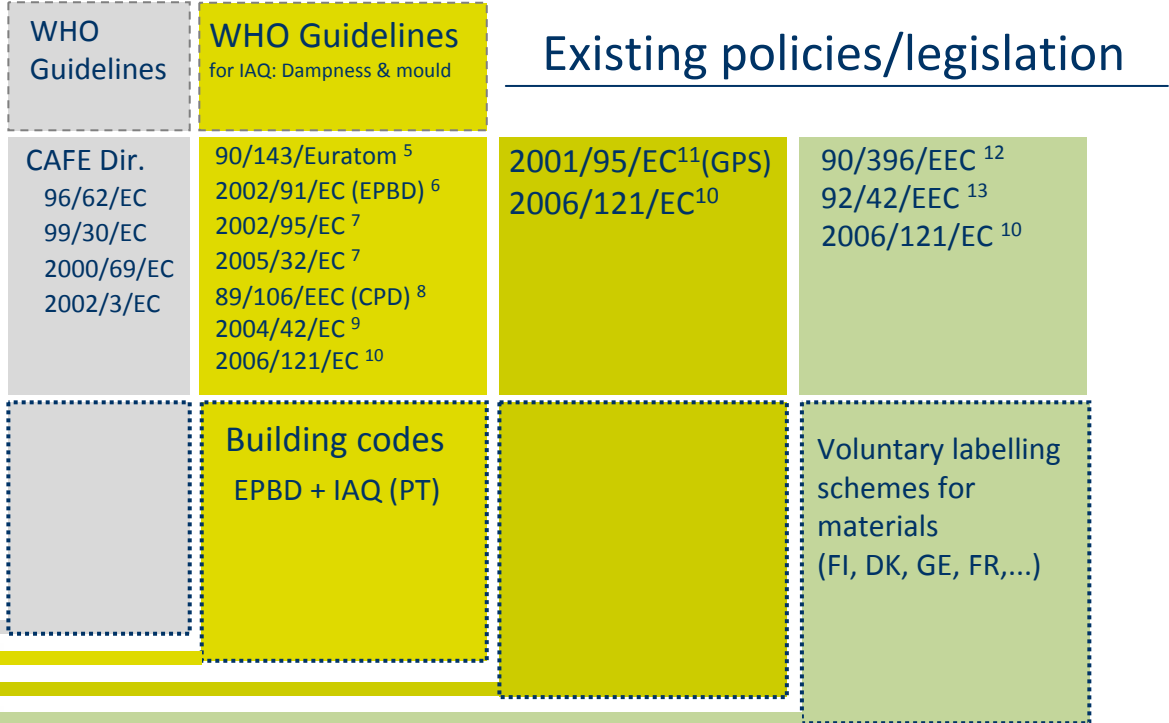
### Recent advancements on harmonisation of European labelling schemes

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**Priorities**



### Proposed policies

- Strategy: Green Paper on IAQ + ...
- REACH + CPD + EPBD & IAQ associated responses
- Harmonised (voluntary?) labelling schemes, IPP (?)
- Consumer products labelling
- Harmonised IAQ assessment, testing & monitoring systems & schemes

- 1) Taken as granted. Out of EnVIE scope.
- 2) Building materials; paints; HVAC systems;...
- 3) Furniture; mattresses; upholstery; candles; incense; air 'fresheners';...
- 4) Cooking; fireplaces; cleaning products; air cleaners; varnishes; waxes;...
- 5) Radon
- 6) Energy Buildings Performance Directive
- 7) Electrical appliances
- 8) Construction Products Directive ( E. Req. #3)
- 9) Paints & varnishes
- 10) REACH
- 11) General Products Safety Directive
- 12) Burning appliances
- 13) Boilers

**Legend:**

-  WHO Guidelines
-  EC Policies/Legislation
-  Member States Policies/Legislation

## Introduction

Emissions from construction products have been identified as a significant source of indoor air pollution since the beginning of the 1980's. Different approaches to evaluate construction products have emerged over time. The need for an EU-wide harmonised approach to evaluate emissions from building products has now become obvious.

- ❖ **To protect consumers from exposure to harmful (uncomfortable or unhealthy) emissions from materials**
- ❖ **This protection can be effectively achieved by supporting the market demand for low emitting materials**

# ECA Report no. 24 on *"Harmonisation of indoor material emissions labelling systems in the EU: Inventory of existing schemes"*

EUROPEAN COLLABORATIVE ACTION  
URBAN AIR, INDOOR ENVIRONMENT AND HUMAN EXPOSURE

Environment and Quality of Life

Report No 24

**Harmonisation of Indoor material  
emissions labelling systems in the EU**

Inventory of existing schemes



## ECA Report no. 24 - *11 labelling systems were reviewed*

- ECA report nr. 18 "*Evaluation of VOC emissions from building products solid flooring materials*"
    - AgBB (Germany)
    - CESAT (France)
    - M1 (Finland)
    - ICL (Denmark)
    - LQAI (Portugal)
    - Natureplus (Germany)
    - The Blue Angel (Germany)
    - Ecolabel (Austria)
    - GUT (Germany)
    - EMICODE (Germany)
- ✓ Legal status
  - ✓ Product relation
  - ✓ Basic requirements
  - ✓ Additional testing besides emission
  - ✓ Emission resting
  - ✓ Test of functionality and quality
  - ✓ Requirements to test laboratories
  - ✓ Test specimen preparation
  - ✓ Detailed analytical procedure available
  - ✓ Round robin tests
  - ✓ Regular tests of already labelled material
  - ✓ Market relevance

## ECA Report no. 24 - *Results*

- ❖ No harmonised system exists in Europe yet
- ❖ Most of the systems apply EN (13419) or ISO (16000) standards
  - *short-term (1-3 days) and long-term testing (28 days)*
  - *several TVOC definitions (ISO 16000-6, ECA 18, AgBB)*
  - *TVOC thresholds vary between 200  $\mu\text{g}/\text{m}^3$  and 1000  $\mu\text{g}/\text{m}^3$*
  - *odour evaluation rarely applied*
- ❖ common minimum requirements for part of the systems
- ❖ Round-robin tests show large variation

## ECA Report no. 24 – *Conclusions & Recommendations*

- ❖ There are needs and the potential for harmonisation
- ❖ Further harmonisation requires common procedures for testing and analysis
- ❖ Attention should be paid: a) to the sampling and preparation and b) to the analytical procedures
- ❖ All labels should include a quality assurance system
- ❖ The labels have achieved a demand for low emission products
- ❖ One test should be sufficient for applying several labels
- ❖ Further round-robin tests are needed
- ❖ Testing laboratories should be accredited according to ISO 17025 and should take part in QS-measures as e.g. round robins
- ❖ Further work towards convergence of the labelling systems is recommended

## International Conference on "IAQ and Construction Materials" 4-5 June 2007, Berlin

### Recommendations for a European Labelling System

Criterion	ECA 18	MI	DICL	AgBB	AFSSET
Pre-Assessment related to composition or experience of harmlessness				yes	yes
Chamber	ISO 16000	ISO 16000	ISO 16000	ISO 16000	ISO 16000
Testing after ... days	1-3-28	28	3-10-28	3-28	3-28
TVOC measured	yes	yes	no	yes	yes
SVOC measured	no	no	no	yes	no
Single VOC measured	yes	yes	yes	yes	yes
Carcinogens assessed; effect threshold;	yes				
Carcinogens assessed; concentration threshold:		yes	yes	yes	yes
Irritants assessed; effect threshold;	yes 63 LCI	Formaldehyd Ammonia	yes	yes 166 LCI	yes 214 LCI
Other substances assessed; effect threshold;			no		
Odour, sensory assessment;	yes	yes	yes	no	yes
Analytically identified but not assessable VOC	yes	no	no	yes	yes

*Table copied from the Conference Proceedings*



## WG to elaborate and propose a harmonised labelling scheme



- C. Däumling (UBA, Germany)
- K-R. Brenske (UBA, Germany)
- D. Crump (BRE, UK)
- L.W. Funch (DTI, Denmark)
- K. Hansen (DTI, Denmark)
- W. Horn (BAM, Germany)
- F. Maupetit (CSTB, France)
- K. Saarela (VTT, Finland)
- T. Tiirkonen (VTT, Finland)
- J. Säteri (FiSIAQ, Finland)
- T. Witterseh (DTI, Denmark)
- S. Kephelopoulos (EC-JRC, IHCP, Italy)



## Working group approach

**1<sup>st</sup> STEP:** Comparison by testing and evaluating the same flooring material according to the different criteria.

**Table 2. Similarities/differences among the 3 national protocols**

Requirements	M1	DICL	AgBB
Pre-assessment of product composition	No	Voluntary	Mandatory
Chamber	ISO 16000	ISO 16000	ISO 16000
Measuring points (days)	28	3, 10 and 28	3 and 28
Formaldehyde measured	Yes	Yes	No
TVOC measured	Yes	No	Yes
SVOC measured	No	No	Yes
Single VOC measured	Some	Yes	Yes
Carcinogens evaluated	IARC Class 1	IARC Class 1	EU Classes 1 and 2
Irritants evaluated	Formaldehyde and ammonia	Formaldehyde and compounds given in VOCBase	LCI
Assessment of other VOCs	No	No	Yes
Sensory evaluation	Yes	Yes	No

## Result of comparison of testing and evaluation

The result was both encouraging and challenging!!!

- The material was unanimously rejected by the three labelling schemes. The rejection was, however, due to different parameters.
- Both the M1 and D1CL rejected the flooring material due to the results of sensory evaluation, whereas the material was rejected by the AgBB due to emission of a class 2 carcinogen (EU): 1,3-Dichloro-2-propanol.

## Working group approach

**2<sup>nd</sup> STEP:** Elaboration of a common set of criteria

## Working group approach

### 3 meetings so far organised

- ✓ 1 November 2007, by UBA in Berlin
- ✓ 1 February 2008, by DTI in Copenhagen
- ✓ 16-17 June 2008, by VTT in Helsinki

Next meeting: 27-28 October 2008, by JRC in Ispra

## Consensus so far reached

The working group has until now agreed on a common set of criteria including:

- ❖ Emission testing should include two tests (day 3 and 28)  
(if carcinogens detected after 3 days test can be stopped)
- ❖ Health evaluation based on a common set of LCI values  
(69 in ECA18, 166 in AgBB, 216 in AFFSET)
- ❖ Carcinogens considered according to EU-list  
(Cat. 1+2 according to EU-list; Cat. 3 through the LCI procedure)
- ❖ Upper limit for TVOC
- ❖ Sensory evaluation  
(The ISO/TC146 process will be followed and sensory evaluation should be included in the next comparison test of the three labelling systems)
- ❖ SVOC and VVOC is still under discussion

## Challenging issues we are considering:

- One test for several levels of requirements  
(e.g., CE Marking, voluntary labelling at different levels of requirements)

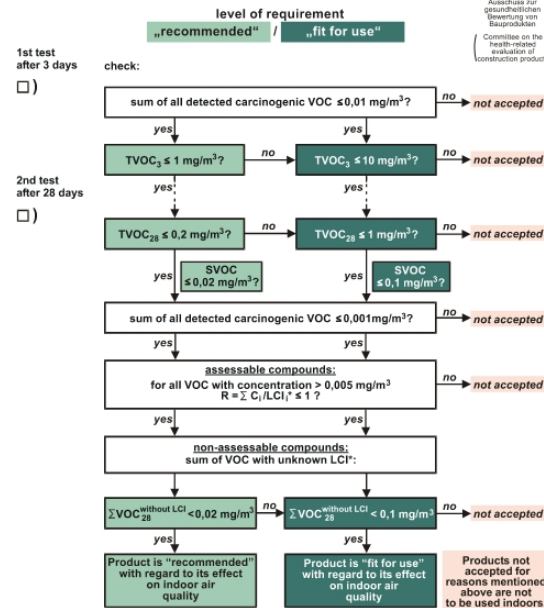




M1?  
DICL?  
Blue Angel?

# one test for two levels?

FLOW CHART FOR THE EVALUATION OF VOC-EMISSIONS FROM CONSTRUCTION PRODUCTS



AgBB,  
DIBt

for discussion!



□) Generally accepted methods for sensory tests, which should also be performed at this point of time, have not been developed yet.

\* LCI = lowest concentration of interest (German: NiK)

USA II 2.2 - AgBB March / 2001



This flow-chart introduces two possibilities for the evaluation on the basis of two levels of requirements (i.e., "recommended" or "fit for use"), the former being more stringent compared to the latter in terms of evaluation.

## The way ahead:

- Making the appropriate linkage of the activities of this WG with other concurrent relevant activities of standardisation bodies (i.e., CEN TC 351 WG 2, ISO/TC 146) and EC services (i.e., DG SANCO, DG ENTR and DG JRC).
- Preparing a document for building wider consensus on harmonisation through involvement of the rest of the European labelling schemes
- Updating ECA report no. 24
- Disseminating the outcome of the on-going work of this WG to interested stakeholders:
  - ✓ A first communication made to the 15. WaBoLu Innenraumtage in Berlin, April 2008.
  - ✓ WG activities presented in the Indoor Air 2008 Conference, EnVIE Final Conference
  - ✓ Link to the EC Website on Indoor Air Quality and Health Effects

**THANK YOU FOR YOUR ATTENTION!**