



**natureplus[®] - ENVIRONMENTAL AND HEALTH
RELATED CONSTRUCTION WITH FUTURE
ORIENTED SUSTAINABLE BUILDING PRODUCTS**

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Healthy Building - Syracuse 2009

Motivation



In the building sector we are confronted with

- a high variety of building materials and chemicals
 - increasing requirements in economic, ecologic and social sustainable construction
 - a high complexity in decision making
- So it's a difficult challenge even for professionals like architects to choose building products in respect to ecological criteria.

Goals / Demands



- Construction of environmental, economic and social sustainable houses and dwellings
 - Standardization of environmental labelling
 - Easy decision making for architects and building contractors
 - Orientation for consumers
- This leads to a demand of easy-to-use environmental labels – ISO 14024 Type I environmental declaration

What is natureplus ?



- ✓ Independant multi stake holder environmental label for sustainable construction products made of renewable or mineral raw materials.
- ✓ in conformity with ISO 14024
- ✓ prevalent in Europe
- ✓ founded in 2000

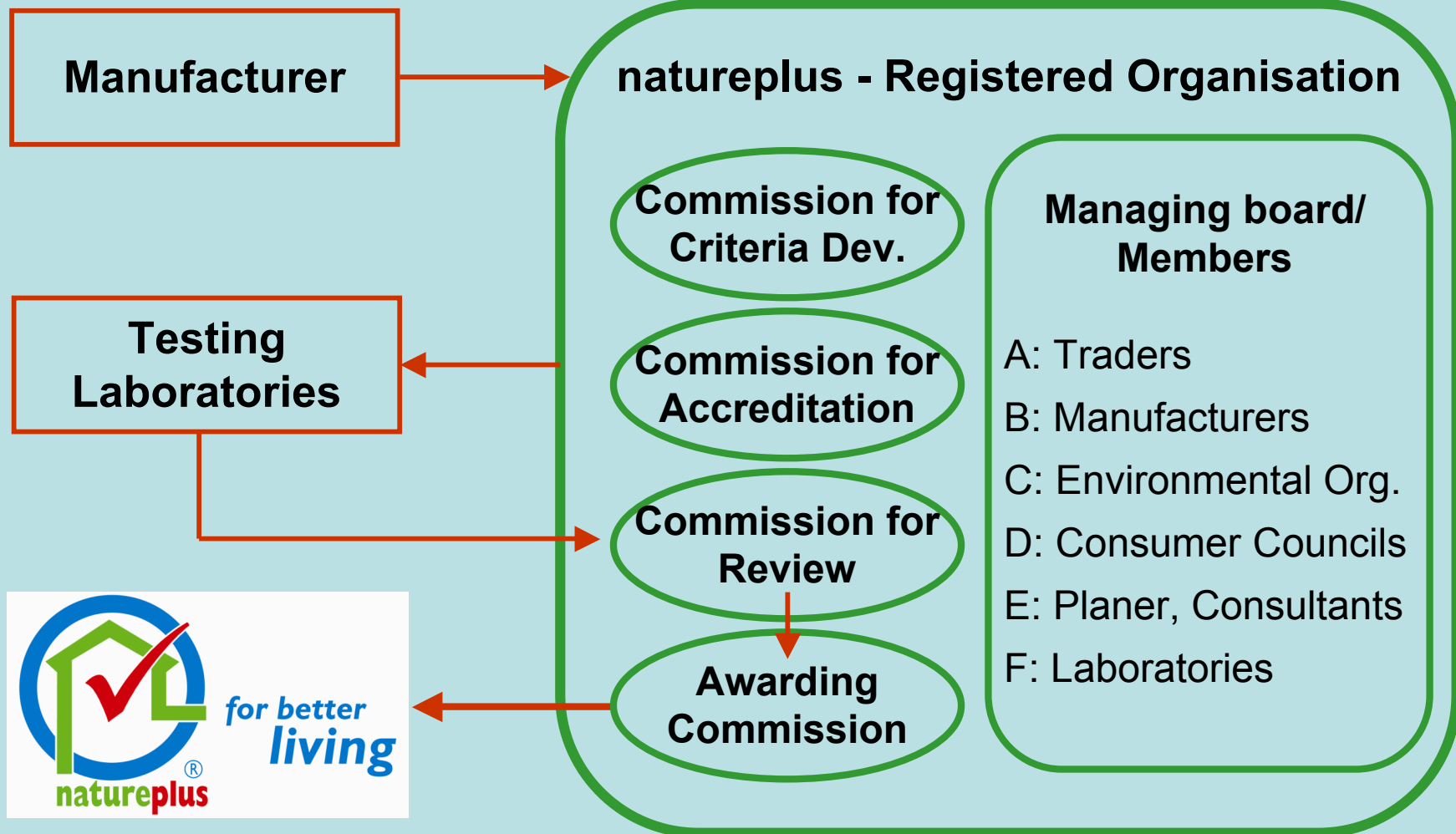
Multi-stakeholder organisation



- Merchants/trade
- Manufacturers
- Environmental NGO
- Consumers
- Trade, planners
- Science, labs
- workers



natureplus[®] Organisation Structure



Representation



95 Members in

- Austria (IBO)
 - Belgium (VIBE)
 - Germany (Headquarter)
 - Hungary (IBU)
 - Netherlands (NIBE)
 - Switzerland (Kiefer&Partner)
- Further contact bureaus planned (France)



Main Indicator Fields

- 85 % ingredients from **renewable** or **mineral** resources
- Full declaration of all input materials

Function

- Technical Performance

Environment

- Environmental Performance

Health

- Indoor Air Quality

Technical Performance



- Compatibility with legal rights:
technical approval, certificate of conformity
- Additional requirements:
all products must be technically suitable.

Indoor air quality

Precautionary requirements



- List of **generally prohibited substances** as f.e.S. causing cancer, altering heritable information, affecting reproduction (MAK lists III1 and III2, TRGS 905 K1, K2, M1, M2, R1, R2 IARC groups 1 and 2a)

- List of **product specific prohibited substances** as f.e. Vanishes must not have any of the following substances added:
 - softening agents
 - glycol compounds
 - alkylphenol ethoxylates
 - azo pigments that release carcinogenic amines
 -Organic Solvent must be less than 0,1 m%.

Evaluation by manufacturer declaration and – if possible – by laboratory testing.

Indoor air quality

Laboratory testing for emissions



➤ Volatile Organic Compounds (VOC) - emission

- VOC classified as KMR, after 24 hours: not determinable
- VOC after 28 days:
 - Total VOC (TVOC): 300 $\mu\text{g}/\text{m}^3$
 - Total alkyl aromats: 50 $\mu\text{g}/\text{m}^3$
 - Total sensitizing substances: 50 $\mu\text{g}/\text{m}^3$
 - K3,M3,R3-substances: 50 $\mu\text{g}/\text{m}^3$
 - Special individual substances LCI-list
- Semi-volatile organic compounds (SVOC) 100 $\mu\text{g}/\text{m}^3$
- Formaldehyde after 3 days: 24 $\mu\text{g}/\text{m}^3$
- R-value (AgBB-conformity) < 1

Indoor air quality/Environmental performance

Laboratory testing for impurities



➤ Parameters depending on the product

- Metals (As, Cd, Ni, Pb, Cr VI, Co, Hg, Zn)
- Pesticides
- Organo Halogenic Compounds (EOX)
- Volatile Organic Compounds (VOC)
- Flame retardants
- Biocides (f.e. Triclosan)
- Residual Monomers
- Free Formaldehyde
- others ...

Environmental performance

Qualitative requirements



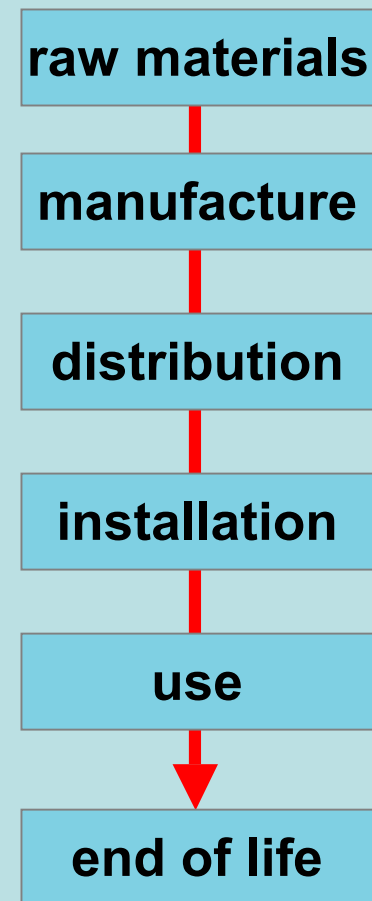
Example

Ecological requirements for wood-fibre boards:

At least 50 mass% of the raw materials used must come from certified industrial wood or from secondary raw materials.

Evaluation by

- Manufacturer declaration
- Expert's report and measurement
- Survey on the manufacturing site



Environmental performance

Quantitative requirements



Example:

The manufacturing of insulation materials has to meet the following ecological requirements per **functional unit**:

Parameter	Unit	Recommended Value
Global Warming Potential	kg CO ₂ -equ	2
Ozone Depletion Potential	kg R11-equ	2 * 10 ⁻⁶
Photochem. Ozone Creation P.	kg Ethylen-equ	0,002
Acidification Potential	kg SO ₂ -equ	0,02
Primary Energy Consumption	MJ	50

Status Quo



- ✓ **30 Award Guidelines adopted for**
timber, wood materials, masonry, mortar, windows, doors, flooring, insulation, sealants, paints, coatings, adhesives and others
- ✓ **approx. 150 labelled products**

Transparency

All informations as guidelines, labelled products, test methods, members, processes and newsletters are available on

<http://www.natureplus.org>

natureplus® is repeatedly best rated in cross-validations



**Thank you for your
kind attention!**