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Session 4: Growing sustainable chemistry through the supply chain (part 2): sector-specific challenges - Building Break-out Group (BOG)

- Moderation: Tess Fennelly (T Fennelly & Associates, Inc.)
- Impulse statement: Lothar Lißner (Kooperationsstelle Hamburg IFE)
- Note-taker: Johanna Wurbs (UBA – German Federal Environment Agency)

The participants of the section came from industry (raw material and additive supplier), consultancies, universities, NGOs and regulators.

Impulse statement and discussion

The impulse statement gave a definition of green chemistry in the construction sector (low toxicity and high biodegradability of chemical constituents, low emission construction products) and already identified some “bottlenecks” for the implementation in the construction sector and showed some positive examples (see below). It concluded the necessity of (public) support in the developing and testing phase of new products and the need of easy accessible information on alternatives. In the following discussion the hindrances for a green chemistry in the construction sector and existing positive examples were resumed.

Key takeaways from the panel

Hindrances to green chemistry in the construction sector

- Lack of understanding and need surrounding green chemistry in the building sector.
- Definition of Green Chemistry is not always clear, e.g.:
 - Are renewable materials always better?
 - Sustainability of a product is not only influenced by its chemical composition, but also by its durability.
 - Sustainability is often associated with energy savings only.
 - Should the assessment be carried out at the level of the product or the building?
 - Common understanding that preservatives and high content of solvents are not green.
- Difficult to quantify future savings: A sustainable durable building is more expensive in construction, the money savings come later (BUT: The Builder is often not the later owner.) The time frame for the return of investments is often 10 years instead of 50 years.
Example: Concrete which is not formulated to the climate conditions in order to save the costs of the necessary additives.

- Workforce training is a deterrent to new products and new application methods:
 - Lack of resources and time to train
 - Workers on construction sites are under time pressure and therefore often prefer time saving convenience products.
- Investments are very high to develop new products; afterwards they might be copied quickly by competitors. Also test cycles of new construction products can be long, because of the need for long term age testing.
- The complexity of the supply chain makes it difficult to influence the choice of materials by the final customer (building owner).

Examples and accelerators for green chemistry in the construction sector

Many of the examples are Germany related since a high percentage of the workshop participants were from Germany.

- An alternative product must be available.
E.g. biodegradable fibers as alternative for asbestos.
- Information on alternative products must be available.
E.g. the “Subsport”¹ information portal.
- Labels and assessment schemes for (more) sustainable products
(e.g. in Germany the AgBB-Scheme² for low emissions products in indoor air)
- Certification Schemes for Buildings (E.g. in Germany exists for new federal office buildings the BNB³ scheme, in the UK the BREEAM⁴ scheme is available, in the USA LEED⁵)
- GISBAU / Giscode⁶ information system for construction works which recommends substitutes for certain widely used chemical mixtures (information system from the public occupational insurance)
- Public procurement is also an accelerator for the development and market spread of products of green chemistry.
- Public support in research and the development / testing phase can help can help to create new and greener construction products.

¹ See <http://www.subsport.eu/>

² See <http://www.umweltbundesamt.de/en/topics/health/commissions-working-groups/committee-for-health-related-evaluation-of-building>

³ See <http://www.nachhaltigesbauen.de/sustainable-building-english-speaking-information/assessment-system-for-sustainable-building.html>

⁴ See <http://www.breeam.org/>

⁵ See <http://www.usgbc.org/leed>

⁶ See <http://www.bgbau.de/gisbau/giscodes>