Beauflor obtains top results for major VOC labels

1. Executive summary: Beauflor – a leader within the VOC field

Building products may be a major source of indoor air pollution by volatile organic compounds (VOC).

Recently, Beauflor, part of the Beaulieu International group, obtained top results for the Floorscore® and AgBB labels. Both Floorscore® and AgBB are renowned VOC labels.

VOCs are carbon based compounds, mainly derived from oil. They have diverse chemical structures. A common is that they are volatile, read: they have a low boiling point and are easily evaporate from products. One can say that all products in our daily life contain and emit VOCs, however, at totally different rates and levels.

Beauflor has invested heavily in the past three years to become a world leader within the field of VOC emissions.

Currently we have obtained the following:
- For the USA and overseas markets: the **Floorscore® label** for the **whole product range**, based on a quality audit and emission measurements
- compliance with the German **AgBB** regulations for the **whole product range**. At the very moment, we are filing our results with the German authorities to get the definitive label. These regulations are known throughout the cushion vinyl world and are regarded as being very stringent!
- full **compliance** of the **whole product range** with the **French regulation**. We will fall within the **A+ category**, which ranks us among the best in class! In this case, we are waiting for the final approval of the French legislation to file our results.
- within the EN14041, the standard that governs **CE marking** of flooring products, we obtain the **E1 class for formaldehyde emission** (= best class possible), a given since we don't use any formaldehyde sources in our process.

Next to this, we are in full compliance with the REACH legislation and do not use any of the substances on the SVHC list.[1]

In case there would remain any questions, please address to:

Pol Lombaert, Innovation & development manager
Beauflor
Rijksweg 442
B -8710 Wielsbeke
Tel. +32(0)56 676 927
Mob. +32/(0)496 65 81 89
Pol.Lombaert@bintg.com

1 SVHC: Substances of Very High Concern, a list published by the European Union. On this list are chemicals whose use is of very high concern for consumer products. In practice, one could say that these chemicals are forbidden.

2. Background reading

a. legislation

In 1988, the European Union published the construction products directive 89/106/EEC. Within this legislation, a number of essential requirements (ER) were defined. Essential requirement no. 3 states that: " the construction work must be designed and built in such a way that it will not be a threat to the hygiene or health of the occupants or neighbours, in particular as a result of the following:

- The giving-off of toxic gas
- The presence of dangerous particles or gases in the air
- …"

This essential requirement resulted in legislation in the member states. Notably Germany and France have been very active in this field.

For Germany, the fundamentals for a uniform and reproducible health-related evaluation of building products in Germany, were translated into legislation by the Committee for Health-related Evaluation of Building Products (Ausschuss zur gesundheitlichen Bewertung von Bauprodukten - AgBB). This resulted in an evaluation scheme for VOC emissions from building products suitable for indoor usage. The evaluation scheme sets quality standards relevant to health for production of building products for indoor use indoor and fosters the development of particularly low-emission products.

In France, essential requirement number 3 was translated into engagement 151 of the 'Grenelle de l'environnement' framework. The final legislation is now out for a formal vote. The draft version divides products into classes (A+, A, B, C), based on their emissions, with class A+ being the most stringent one.

Outside the EU, the USA-based Green Building Council defined the LEED® programme (Leadership in Energy and Environmental Design). This programme is a energy and environmental related scoring tool for building projects. Criteria include indoor air quality, waste, energy savings, …

The U.S. Green Building Council approved FloorScore (r)-certified products as an alternative compliance path to LEED® credit EQ 4.3 Low-Emitting Materials: Carpet Systems in October, 2006.

Products bearing the Floorscore® label meet the indoor air emissions criteria of:

- LEED® Green Building Rating Systems
- Collaborative for High Performance Schools (CHPS)
- Green Guide for Health Care.

Floorscore® tests and certifies hard surface flooring and flooring adhesive products for compliance with rigorous indoor air quality emissions requirements. Individual volatile organic compounds (VOCs) are evaluated using health-based specifications. Flooring and adhesives that earn Floorscore® certification earn a legitimately enhanced market position, distinguished by the Floorscore® certification label.

Next to these labels/schemes/legislation exist a number of other initiatives like M1 (Finland), GUT (carpet, Germany), Blue angel (Germany), Greenguard (USA), … Not all of these have cushion vinyl in their scope.

Parallel to the abovementioned initiatives, the EU adopted the REACH legislation. The goal of REACH is to evaluate the risks of chemical substances used in consumer products.
Within this framework, a number of products have been put on a list of Substances of Very High Concern (SVHC), which makes them practically forbidden for use in consumer products.

A number of plasticisers like DOP, BBP, DBP are on this list. We are not using this type of materials and have not used them in the past.

b. *What are VOC's?*

As stated before, building products may be a major source of indoor air pollution by volatile organic compounds (VOC) and semivolatile organic compounds (SVOC).

VOCs and SVOCs are mainly derived from oil. Nevertheless, they can have very diverse chemical structures.[2] A common is that they are volatile, read: they have a low boiling point and are easily emitted from products. One can say that all products in our daily life contain and emit VOCs.

Important to know, however, is that VOC's are not necessarely related to a (bad) smelling product nor to unhealthy or harmful products. In fact, most of the VOC's being emitted have no smell at all!

Think of paint, wood, a new car, wallpaper, carpet, cushion vinyl, furniture, laminate, ... All these emit VOC's, however at a totally different rate, in totally distinct amounts.

Not every VOC is an unhealthy or dangerous product. In the schemes mentioned above, the health related risk is taken into account by the concept of LCI values.[3] A further explanation of this mechanism would lead us too far.

c. *Where is the relation with the CE mark?*

All Beauflor products bear the CE mark, governed by the EN14041 standard. At this moment, there is no relationship between VOCs and the CE mark except for formaldehyde and pentachlorophenol.

Our position is clear on these: we don't use neither of these chemicals, hence fall in the best class.

We expect a merger of current VOC labels with the CE mark. This, however, is not foreseen for the near future.

[2] Scientifically spoken, VOCs have a boiling point between 100°C and 240-260°C. They elute from a OV-1 gas chromatographic column between nC_6 and nC_{16}. SVOCs have a boiling point between 240-260°C and 380-400°C. They elute from a OV-1 chromatographic column between nC_{16} and nC_{22}.

3 LCI: Lowest Concentration of Interest