

## **New ANEC study**

### **Benchmarking and additional environmental information in the context of Type III environmental declarations**

**Type III Environmental Declarations – also referred to as Environmental Product Declarations (EPDs) - are unsuitable for consumers and other stakeholders in their present form. Current EPDs are an ideal marketing instrument due to their inherent shortcomings, such as presentation of mere datasets which do not allow consumers to identify products of environmental superiority, and which make it easy to ignore relevant human health and environmental impacts. A new study, commissioned by ANEC, shows alternatives to these industry driven EPDs, by adding consumer-relevant information and presenting the data in a new format.**

**The proposed new format displays life cycle indicators by normalising the environmental impacts of a given average product to the impacts caused by an average citizen. This information is shown using a graded, colour band scale similar to the EU Energy Label. Reference is also made to the criteria used in Type I eco-label schemes, where available, and a simple green-red colour code shows whether the criteria are fulfilled or not. In addition, colour-coded ranking systems for chemical content and indoor air emissions were developed. Finally, the study provides model declarations for several building products and energy-using products.**

#### **BACKGROUND**

Type III environmental declarations (sometimes referred to as Environmental Product Declarations – EPDs) are based on life cycle assessment (LCA) studies of a limited number of indicators, such as global warming potential, acidification, or eutrophication. The results are given in numbers or graphical representations of the figures without any scales or benchmarks to assess the environmental significance or the relative performance of the product when compared to other products (as opposed to, for instance, the European Energy Label for household appliances which uses the well-known A-G grading system). In addition, these declarations ignore many environmental and human health effects typically not covered by life cycle assessment studies. In particular local exposure and effects including toxicity/eco-toxicity, noise, risks related to nuclear power plants, biodiversity, etc. are not covered.

In other words, EPDs are typically business driven and, consequently, do not satisfy consumer needs. The philosophy behind the current scheme relies strongly on the presentation of numbers

which only experts are able to interpret, and which misleadingly suggest environmental superiority where in fact only data are presented<sup>1</sup>.

Consumers and other stakeholders, especially professionals dealing with public procurement, need to be able to compare the environmental impact associated with a product, its design, and the related processes with that of other products or design alternatives. Thus a clear indication regarding the relative magnitude of the environmental impact associated with the production, consumption and disposal of a product, and the environmental superiority or preferability of a product compared to another one, is indispensable. The selection of relevant environmental issues and benchmarking plays a crucial role in any meaningful environmental datasheet. To identify the different options for assessing and displaying them was the major purpose of the study conducted by Force Technology, Denmark, on behalf of ANEC.

### **MAJOR FINDINGS OF THE STUDY**

The report addresses the possibilities for the benchmarking of consumer products and provisions of additional environmental information beyond that normally found in Type III Environmental Declarations. A review was made of existing EPD approaches focusing on existing standards and national/international schemes. In addition, recent studies concerning consumer comprehension of environmental information were reviewed. It was found that the "average" consumer whose capabilities to process complex technical matters are limited needs simple and clear messages. As even professional purchasers were found to have difficulties to interpret EPDs, one can envisage that only highly competent "environmentally conscious" consumers may benefit from the information given in a conventional EPD. From this was concluded that consumers are generally not given significant support for their decisions from these kinds of EPDs.

As a consequence, a new format was developed to display traditional indicators used in a conventional EPD by normalising the impacts of a given average product to the impacts caused by an average citizen. This information is shown using a graded, colour band scale similar to the EU Energy Label. The purpose is to compare different types of products based on their life cycle impacts, and to assess the relative importance of their environmental burdens, i.e. to identify the products which are of higher/lower concern than others. This format allows rough rankings of product categories and helps the consumer to focus on the "important" products. The scale is not designed to identify small differences between similar products.

The above is combined with additional elements using information e.g. from the well-known EU Energy Label for household appliances, which is reproduced as required by European legislation (in case it is defined for the product group in question). Reference is made also to the criteria of Type I eco-label schemes, where available. For this, a simple colour code shows whether the

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<sup>1</sup> A more detailed critical review of the LCA/EPD approach and corresponding standards is given in the Joint ANEC / ECOS comments on the ISO 14000 series review, <http://www.anec.eu/attachments/ANEC-ENV-2007-G-030final.pdf>

criteria are fulfilled or not – green fields indicating compliance and red fields indicating non-compliance of individual criteria. In addition, ranking systems for chemical content and emissions, also using colour codes, were developed based on existing national schemes.

Finally, the study provided examples of “Environmental Data Sheets (EDS)” - the name indicating a move beyond traditional EPDs - for eight fictive products, five energy-using products and three building products<sup>2</sup>. Future developments and refinements may offer even better possibilities, but the current project shows clearly that it is possible to go beyond the rather limited ambitions outlined in the current standards for Environmental Product Declarations.

### **ANEC’S CONCLUSIONS FROM THIS STUDY**

ANEC concludes from this study and other work undertaken in the field of environmental product information that:

- Conventional EPDs are an inadequate instrument for consumer information and possibly also unsuitable for other stakeholders in a similar situation (e.g. public procurement), as these kinds of EPDs do not allow for the identification of environmentally superior products.
- Due to the inherent shortcomings of life cycle assessment methodologies, LCA derived indicators are unable to reflect all relevant environmental burdens of a product.
- The relevant environmental burdens for a specific product can only be determined in a democratic process, requiring the use of several tools in addition to LCA, referred to as “additional environmental information” (e.g. human health and environmental risk assessment).
- Existing standards for LCA (ISO 14040 series) and Environmental Declarations (ISO 14020 series) are insufficient to ensure that all relevant environmental aspects are adequately covered. Even if the standards will be considerably improved they would not be able to solve issues which can only be solved at the political level.
- Similarly, the draft European standard concerning Product Category Rules for Construction Products (prEN 15804) fails to meet the expectations of consumers and falls even behind requirements defined in international standards on Type III declarations.
- The conduct of background studies for environmental declarations and the identification of benchmarks and scales involves value choices and cannot be left to industry. The European Commission must ensure that information requirements are defined at the political level, product group by product group. This process should, as far as possible, make use of synergies through co-ordinated approaches involving the setting of minimum

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<sup>2</sup> See Annex I of this document

performance levels in an extended EuP Directive, and the development of corresponding Energy and eco-label requirements.

- Even if used only in a B2C context, current EPDs are not fit for purpose. It is doubtful whether a significant proportion of so-called “professional users” will indeed be able to use the information provided. Even more importantly, a meaningful Environmental Data Sheet, containing other relevant environmental aspects for consumers, will be difficult to create if business does not collect and make available the necessary data.
- Meaningful consumer information must be clear and easy to understand. The use of benchmarks and graded scales is of crucial importance. Type I labels and energy labelling schemes remain the reference in a consumer context and are likely to also be most relevant for other groups.
- Additional work is needed to refine the concepts presented in the current study.

#### ANEC in brief

*ANEC is the European consumer voice in standardisation, representing and defending consumer interests in the process of standardisation and certification, also in policy and legislation related to standardisation. Our aim is a high level of consumer protection. ANEC was set up in 1995 as an international non-profit association under Belgian law. We represent consumer organisations from the European Union Member States and EFTA countries. The European Commission and EFTA fund ANEC, while national consumer organisations contribute in kind. The ANEC Secretariat is based in Brussels.*

The study is available at <http://www.anec.eu/attachments/ANEC-R&T-2007-ENV-004final.pdf>  
and the annex at [http://www.anec.eu/attachments/ANEC-R&T-2007-ENV-004final%20\(annex\).pdf](http://www.anec.eu/attachments/ANEC-R&T-2007-ENV-004final%20(annex).pdf)

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## Annex: Example – Polyurethane Sealant YY

### Environmental Data Sheet – Polyurethane Sealant YY

Sealant YY is a low modulus, high-performance 1-component polyurethane-based elastomeric sealant for in- and outdoor joints with large movements. The environmental specifications are detailed in Table 1. Sealant YY has not been tested with respect to Indoor Air Quality.

<b>Table 1 Environmental specifications in relation to the German Blue Angel criteria for Low-emission sealants for interior use (RAL-UZ 123)</b>			
Criteria regarding	Clause in RAL-UZ 123	Criteria fulfilled	Comment
<b>Manufacture</b>			
General substance requirements	3.1.1	No	Classified substances: Toluene diisocyanate 31%; di-(2-ethylhexyl)phthalate 22%
Preservation agents	3.1.2	Yes	
Pigments	3.1.3	Yes	
Plasticizers	3.1.4	No	%; di-(2-ethylhexyl)phthalate is used
Organotin	3.1.5	Yes	Organotin ≤ 0.05%
<b>Use</b>			
Indoor Air Quality	3.2.1	No	Not tested
Serviceability	3.2.2	Yes	Meets the requirements in DIN 18540-F
<b>Recycling and disposal</b>			
No fungicides, insecticides, flame retardants or halogenated compounds	3.3	No	Contains PVC
<b>Declaration and consumer information</b>			
Container text and Technical Data Sheet	3.4	Yes	

No tests with respect to emissions to the indoor climate have been conducted, and Sealant XX is therefore rated as "Not approved".

Using the rating system for potential impacts on human health suggested by FORCE Technology (reference), Sealant YY is assessed as "Very problematic", given its content of chemical substances which must be classified. The health-related properties of Sealant YY are summed below:

Indoor Air Quality	Not Approved
Chemical content	Very problematic

The full declaration of content is given in Table 2.

<b>Table 2 Declaration of content for sealant XX</b>		
Substance	CAS-No.	Concentration
Toluene diisocyanate (prepolymerised)	26471-62-5	25-50%
Calcium carbonate	471-34-1	25%
PVC	9002-86-2	11%
Di-(2-ethylhexyl)phthalate	117-81-7	22%
Xylene	108-38-3	< 4%

**Caution.** Sealant YY contains substances which are hazardous to human health. Avoid skin and eye contact and breathing vapours. Safety goggles and gloves are recommended.

## Sealants and the Environment

Sealants have in general a relative low impact on the environment, at least when global and regional issues like energy consumption, global warming and acidification are considered. The chemicals used in production of sealants are of much higher concern, having a significant potential for impacts on human health and indoor air quality. The German eco-labelling scheme, The Blue Angel, has therefore developed criteria for award of the label to low-emission sealants for interior use. The criteria address both the content and release of chemicals and they can therefore be used to select a product which is safe in application, use and disposal.

Figure 1 shows how much a typical sealant contributes – in selected impact categories - to the annual impacts of an average citizen in the EU. The unit used – mPE – is one thousandth of the annual impact caused by the average citizen – or 0.1%. It can e.g. be seen that the energy consumption for sealing an average house only accounts for 0,0017% of the annual consumption of energy and 0.0016% of the contribution to global warming.

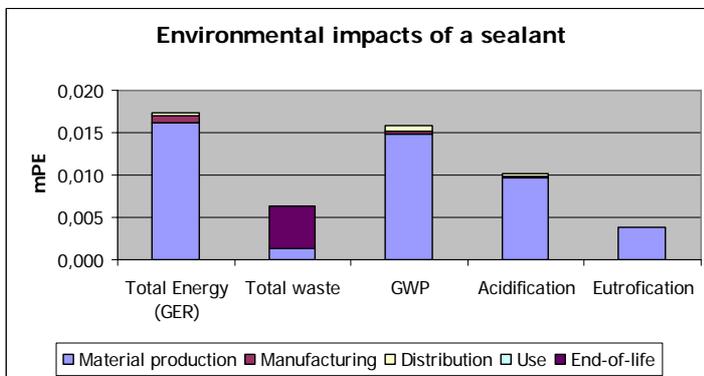


Figure 1. The life cycle environmental impacts caused by an average sealant. The figure does not address impacts on human health, ecosystems, and indoor air quality. This is done by the German Eco-labelling scheme, The Blue Angel, which has established criteria for award of the label to low-emission indoor sealants. The criteria focus on chemical and health-related properties of sealants and are used in this Environmental Data Sheet to provide the most important information on sealant products. Please see opposite page.

When compared to the global and regional environmental impacts from other products and activities, sealants are judged to be of very low concern, primarily because only small amounts of energy and resources are used to cover the need of the average citizen. (See Table 3 for comparative figures for different products).

	Energy Consumption	Global warming	Acidification	Eutro-phication	Waste	POCP
<b>Energy-using products</b>						
Dishwasher	20,6	15,9	10,9	29,9	1,7	
Television	9,7	7,6	5,0	0,0	0,6	
PC	23,1	19,3	13,2	0,2	4,7	
Fridge-freezer	22,9	18,0	12,2	0,2	2,7	
Mobile phone	0,9	0,8	0,7			0,2
<b>Building products</b>						
Sealant	0,3	0,3	0,2	0,1	0,1	
Wood flooring	12,2	2,9	6,0	5,7		39,2
Insulation	0,7	0,9	0,9	0,5	1,7	1,0
<b>Comparison product</b>						
10 km in an average car	71,8	82,6	15,4	58,5	3,8	104,2

Environmental impact in mPE	Concern level
≤ 0.1	Almost insignificant
0.1-0.5	Very low
0.5-1	Low
1-5	Some
5-20	Significant
20-50	High
> 50	Very high

