

STATUS OF THE INDOOR CLIMATE LABELLING SCHEME IN DENMARK

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ABSTRACT

The impartial Indoor Climate Labelling, ICL, originally introduced in Denmark to reduce emissions from building materials and products used in the indoor environment, is still developing and consolidating its position.

The ICL benefits from an expansion of the product areas covered and a still increasing number of labelled products. The product area of furniture is now included, making a total of ten different product areas. Approximately 100 different groups of products are included, which individually covers a number of specific products.

An increasing number of manufacturers apply for the Indoor Climate Label, due to a growing concern about the indoor environment among architects, consulting and planning engineers and private consumers. This shows that the concept is now working as originally intended.

A goal for the ICL is to develop a method for labelling of the overall indoor environment in buildings. Work towards this goal is, however, only at its initial level.

INDEX TERMS

Product labelling, emission testing, indoor air quality, indoor environment

INTRODUCTION

The ICL concept was initiated by the Ministry of Housing and Urban Affairs in Denmark in 1993. It is intended as a tool for development and selection of indoor air quality friendly products and better understanding of the impact of products and materials on the indoor air quality in buildings.

A considerable amount of knowledge and experience have been accumulated within the ICL since the establishment. Based on the obtained experience a more flexible and simple procedure for product-area specific testing criteria was developed (Hundevad et al., 2000).

METHODS

The main principle of the ICL is the determination of the indoor-relevant time value. The time value is based on chemical analysis of emission of single volatile organic compounds combined with a sensory evaluation of air acceptability and intensity of odour from a newly manufactured product.

The chemical analyses are carried out until the emission rate converted to the concentration in a standard room is below half the threshold value for odour and irritation for all individual

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substances. The threshold values for odour and irritation used are those given in VOCBASE (Jensen and Wolkoff, 1996). According to ENV 13419-1 (CEN, 1999) minimum 24 and 72 hours and 28 days should as a principal rule be included. In connection with measurements in excess of 28 days and comprising minimum 4 measurement points, modelling can be used (DSIC, 2000).

The sensory evaluation is carried out as a control of the chemical measurements. The sensory evaluation criteria for an acceptable air quality is: 1) the air quality shall be perceived as "acceptable" (median of minimum 20 persons' evaluations) using the acceptability scale, and 2) the odour intensity shall be below 2 (moderate odour) using a 6-point continuous scale for odour intensity.

In addition to the chemical analysis and sensory evaluation, ceiling products are also tested for the emission of fibres and particles.

The indoor-relevant time-value is determined as the time (in days) from the product is first released for sale and until the concentration (in a standard room) of all single volatile organic compounds is below half the threshold value for odour and irritation of mucous membranes. At the same time the product must fulfil the requirements for the sensory evaluation of the air quality.

The ICL also requires the product to be accompanied by directions for storage, installation, application, use, cleaning and maintenance etc. to ensure a low impact on the indoor air quality throughout the normal lifetime of the product.

Detailed description of the technical background and evaluation methods can be found in the literature (Wolkoff and Nielsen, 1996; Larsen et al., 1998; 1999).

MAIN ACTIVITIES

The major on-going and future activities within the ICL scheme are:

- development and revision of product standards
- internationalisation
- further development of the concept to include labelling of the overall indoor environment

The structure of the ICL is open and allows easy implementation of new product areas. New product-area specific testing criteria (product standards) are continuously being developed to meet producers' and consumers' requests. Lately, a product standard for testing and labelling of cable trunking systems was released. The already existing product standards cover a wide range of products found in the indoor environment: ceiling and wall systems, windows and doors, folding partitions, textile flooring materials, resilient, wood-based and laminated floors, oils for wooden floors, interior building paint, kitchen, bath and wardrobe cabinets, and other kinds of furniture. All product standards are continuously revised to meet the latest product developments regarding design and materials used. The general labelling criteria, common to all product areas, are now undergoing a thorough revision during which the criteria for test chambers and test methods are updated to conform to the criteria given in the ENV 13419-1 standard (CEN, 1999).

The ICL experiences an increasing number of manufacturers applying for the Indoor Climate Label, probably due to a growing concern about the indoor environment among architects,

consulting and planning engineers and private consumers. The Indoor Climate Label is utilized by manufacturers as an easy communicable documentation of the impact of the products on the indoor air. At the same time, consumers see the labelling as a tool for selection of IAQ-friendly products.

There is a growing international awareness of the Indoor Climate Label and as the international knowledge about the ICL concept increases, several Danish manufacturers, who export their products to an international market, use the Indoor Climate Label as a marketing parameter.

FUTURE ACTIVITIES

A future goal for the ICL is to incorporate a method for labelling of the overall indoor environment in office buildings and dwellings. Like the rest of the ICL concept, the method will be developed in close collaboration with research institutions. This will ensure a practically applicable method scientifically based on the latest research results. Work towards this goal is, however, only at its initial level.

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