

ABSTRACT

The Centre for Best Available Techniques (BAT) is founded by the Flemish Government and is hosted by VITO. The BAT-Centre collects, evaluates and distributes information on available environmentally friendly techniques. Moreover, it advises the Flemish authorities on how to translate this information into its environmental policy. Central in this translation is the concept “BAT” (Best Available Techniques). In the BAT-study at hand, the Best Available Techniques for the woodworking industry in Flanders are selected by the BAT-Centre.

This study is an actualization and an integration of 3 formerly published studies, namely:

- *the BAT-study on wood preservation (Jacobs en Dijkmans, 1998(a)), published in 1998;*
- *the BAT-study on the production of chipboards (Jacobs en Dijkmans, 1998(b)), also published in 1998;*
- *the BAT-study on the woodworking industry (Jacobs et al., 2003), published in 2003.*

The BAT-study focuses on the “wood industry” and the “furniture industry”. However, only activities that require a permit or notification (according to VLAREMI, annex 1) fall within the scope of the BAT-study. Within the wood industry one can distinguish “primary wood processing” and “secondary wood processing”. Primary wood processing includes sawing, shaving and impregnating (preservation), and even the production of veneer. Secondary wood processing includes the production of wooden panels, the production of assembled parquet (floor) and other cabinet- and woodwork (carpentry) (construction elements), the production and repair of wooden packaging and the production, repair and maintenance of other articles made of wood.

In the BAT-study, attention is mainly given to the environmental aspects listed below:

- *emissions from directly heated (chip) dryers (combustion and drying gases);*
- *emissions from indirectly heated (chip) dryers (drying gasses only);*
- *diffuse emissions of dust from storage and handling of drift sensitive materials and transport;*
- *emissions of VOC, and thus odour, from the application of paints and glues;*
- *emissions of PAC and VOC, and thus odour, from preservation of wood and during intermediate storage;*
- *(indoor) emissions of formaldehyde (resulting from the use of formaldehyde containing glues);*
- *emissions of wood preservation products to soil and groundwater;*
- *use of energy;*
- *...*

The combustion of wood, with the exception of combustion in directly heated dryers, is no subject of the BAT-study.

To reduce the environmental impact of the woodworking industry, more than 100 environment-friendly techniques are listed in the BAT-study. 74 techniques were, after evaluation, selected as Best Available Techniques. Only 2 techniques were not selected as Best Available Techniques. 27 Techniques are Best Available Techniques under certain conditions. The selection of the Best Available Techniques and the recommendations with respect to the environmental permit legislation and the eco-investment support policy are the result of an intensive literature survey, company visits, discussions with producers, suppliers, industry experts, representatives of the federations and authorities. It is clear that the selected Best Available Techniques are represent-

ative for a given moment in time and that not all Best Available Techniques – now or in the future – can be included in this study.

The formal consultation was organized by means of an advisory committee, the composition of which is given in annex I.

Recommendations for further research focus on:

- *the discharge of polluted storm water;*
- *emissions of VOC during drying of veneer;*
- *diffuse emissions of dust.*

Until now, no clear correlations have been found between the presence of different pollutants in the waste water of producers of chipboards en the activities on their grounds. There is however a conjecture that the substances in the waste water (mainly storm water) are caused by outdoor storage of non-polluted, treated wood waste (recycling wood) and/or fractions from the cleaning facilities for waste wood.

Further research (measurements) into the origin of the pollutants in the industrial waste water is recommended. Once the sources are identified, the environmentally friendly techniques can be listed and evaluated for their technical feasibility, environmental benefit and economic feasibility. Based on the result of this research, additional techniques can be selected as Best Available Techniques in the future. The site-specific implementation of these techniques should be studied at company level.

In order to oblige the companies to study the site-specific implementation of the Best Available Techniques thoroughly, the government can consider an obligation for drawing-up a storm water pollution plan based on the stormwater pollution prevention plan (SWPP) for timber products facilities from EPA. This does not only apply to companies from the woodworking industry.

Emission data for veneer dryers in Flanders is not available. In Flanders veneer drying is done by blow drying in heated air. The air is canalized and is currently (anno 2010) emitted into air without treatment. Thus, currently none of the veneer dryers in Flanders is equipped with an end-of-pipe technique.

Further research into the emission levels for VOC, but also other parameters like e.g. dust, during drying of veneer is necessary. Once data on the achieved emission levels are available, the necessity of emission abatement techniques can be examined.

At this moment a regulation for diffuse dust emission in Flanders is being prepared. According to this regulation a “dust report” will have to be drawn up under certain circumstances.

In order to oblige companies to study the Best Available Techniques thoroughly, the government can consider e.g. an obligation for drawing-up a dust abatement plan via the sectoral or special provisions. This does not only apply to companies from the woodworking industry.

A number of products, goods that are stored and/or handled within the woodworking industry are not yet classified within a drift category (see NeR and the draft version of regulation on diffuse dust emissions”). It concerns loams, flakes and sawdust. Further research into the drift sensitivity and the wetability of these goods is necessary to be able to decide whether these goods need enclosed storage (or whether open storage can be allowed) and which measures need to be taken during open storage.