

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 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). BAT corresponds to the techniques with the best environmental performance that can be introduced at a reasonable cost. This book contains the BAT for laundries and linen rental services. It is an actualization of the 1999 edition.

Laundries are known for their high water- and energy consumption. To wash the textile, the laundry industry uses detergents, which might have an environmental impact. The nature of the contaminants in the linen determines the character of the contaminants in the waste water. Because of this, two types of laundry wastewater can be distinguished depending on the type of linen being washed. The oxygen-binding parameters (COD, BOD, N and P) are almost the same for all laundries. But the concentration of heavy metals, PAH and MAH are substantially higher in the waste water of laundries focusing on work clothes, mats and mops.

The objective of this BAT-study was giving an answer on the high consumption of energy and water; and looking for solutions to minimize the contamination of the waste water. An additional objective was to suggest BAT associated emission levels.

The BAT selection in this study was based on plant visits, a literature survey, a technical and socio-economic study, cost calculations, and discussions with industry experts and authorities. The formal consultation was organized by means of an advisory committee. The composition of the advisory committee can be found in annex 1. The methodology used for the BAT-selection is described by Dijkmans (2000).

To reduce the water consumption, 15 techniques are described, and 10 were selected as BAT. Reduction of water consumption in the laundry industry directly leads to reduced energy consumption, since almost all water used must be heated. Besides these undirected energy saving technologies, the BAT-study describes 23 other specific energy saving technologies. 12 of them were selected as BAT. To reduce the emissions to the wastewater, 12 end-of-pipe technologies are assessed. The BAT-selection of the end-of-pipe techniques is described in annex 5. A sieve is BAT for all laundries, a biological wastewater treatment is BAT when laundries discharge their effluent direct into surface waters. A physico-chemical treatment is only BAT for bigger laundries with high heavy metal concentrations in their effluent. Because of the complexity and high investment cost, it is not BAT for small laundries.

The BAT conclusions are the basis for the BAT associated emission levels for the laundry industry. These are determined using the method described by Derden et al. (2009). The data used for the determination of the BAT associated emission levels are VMM (2006-2008) and taken from inspection reports (2008). The final result is a set of BAT associated emission levels and a proposal for emission limits. Since there is a difference between the laundries washing “standard” textile and those washing work clothes, mats and mops, the suggested emission limits are split up for heavy metals and PAH’s.