

ENVIRONMENTAL FOOTPRINT COMPARISON TOOL

A tool for understanding environmental decisions related to the pulp and paper industry



EFFECTS OF RECYCLED FIBER USE ON DISCHARGES TO WATER

Paperboard Sector

There are many types of paperboard, but the main division is between containerboard and recycled paperboard. Both containerboard and recycled paperboard contain large amounts of recycled fiber.

Containerboard is used in corrugated boxes. The outside layers of the corrugated material are made of a fiber sheet called linerboard or test liner and the middle fluted layer is called corrugating medium, medium, or fluting. Therefore, containerboard is often divided into two groups, liner and medium. Within the containerboard sector, product specifications vary and these specifications may affect the use of recovered fiber as well as mill waste loads.

BOD and TSS discharges from containerboard mills with virgin pulping on site are usually greater than at mills using only recovered fiber, although NCASI data indicate that effluent loads from semi-chemical medium mills are much closer to recycled containerboard mills than are the loads from unbleached kraft linerboard mills. For more detailed information on containerboard mills, [click here](#).

The opportunities to increase the use of recovered fiber in recycled paperboard manufacture are very grade-dependent. In some cases, the product niches filled by recycled paperboard are supplied only by mills producing board from 100% recovered fiber, so there are no opportunities to consider. In some cases, recycled paperboard and solid bleached sulfate (paperboard made from virgin bleached kraft pulp) compete in the same product niche. In other cases, recycled paperboard may compete against unbleached kraft board grades. The specificity of many of these product niches complicates comparisons of environmental parameters. None-the-less, recycled paperboard mills usually discharge less BOD, TSS and COD (chemical oxygen demand) than bleached and unbleached kraft mills. For more specific information on some of the recycled fiber-related environmental footprint decisions involving recycled paperboard mills, [click here](#).

Additional information on the fiber quality requirements for paperboard manufacturing can be found in Gottsching and Pakarinen (2000).

More information on the sources of fiber in containerboard and recycled paperboard mills in the U.S. is available at <http://paperrecycles.org/statistics>. Comparable information from other countries is usually available from the country's paper industry trade association.

References

Gottsching, L. and H. Pakarinen. 2000. *Recycled fiber and deinking*. Book 7 in Papermaking Science and Technology Series, ed. J. Gullichsen and H. Paulapuro. Helsinki, Finland: Finnish Paper Engineers' Association and TAPPI.