

# Total Recycled Fibre Content of Fibreboard and Post-Consumer Waste Recycled Fibre Content

## Introduction

Purchasers of fibreboard products often ask the board manufacturer for a declaration on the proportion of recycled fibres in the board. Specifically the questioner may ask about the amount of "post-consumer waste" incorporated in the board.

The CEN Working Group TC261/SC4/WG3 examined all aspects of recycling of packaging, including fibreboard. One area of investigation was to ensure that recycling packaging is both a benefit environmentally and an economic use of resources. It should be remembered that resources are consumed in recovery/ recycling and there may be a need to increase the total weight of packaging to maintain fitness for purpose.

One immediate problem is that there is currently no known technology that will allow measurement of the recycled material content in a finished fibreboard pack. Therefore policing of any "minimum recycled content" legislation would be difficult.

The results of the CEN Working Group deliberations were published in April 2000 in a CEN Report (CR 13504), "Packaging – Material Recovery – Criteria for a minimum content of recycled material".

British Standard BS 7500 : 1995 details a method for calculating the recycled content of paper and board. This relies on definitions of various "waste" papers and manufacturers' records of quantities of paper fibres used from each potential source of fibre.

## Sources of Recycled Fibre

Areas where paper fibres are obtained for recycling into the manufacture of further paperboard products include:

1. Trim and waste from the original paper mill;
2. Trim and waste from the corrugated/solid fibreboard factory;
3. Waste from the packer using the corrugated packaging;
4. Waste from used packages collected by retailers such as supermarkets;
5. Waste placed by the final customer into household waste collection streams.

It is generally considered that the last two categories, 4 and 5 above, are "post-consumer" sources of recycled fibre. Categories 2 and 3 are usually included in the "total recycled fibre" calculations, and category 1 is excluded, (as discussed in British Standard BS 7500 : 1995).

## Recycled Percentages

Even if the above definitions can be agreed and the source of the recycled fibre categorised, the original question relating especially to post-consumer waste is still not practical to answer.

By way of example, a board may be made up of two liners and a fluting such as:

186 g/m <sup>2</sup>	Kraft Liner
105 g/m <sup>2</sup>	Waste Based Fluting "B" Flute
190 g/m <sup>2</sup>	Test Liner

The manufacturer of each component would be able to state the recipe to which they work. (Even the Kraft liner probably contains a substantial amount of recycled fibre from whatever source).

Therefore a corrugated board converter should be able to calculate their relative proportions in the final board.

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However, the calculation would only be accurate for a particular combination of supply of each of the three components. If the converter takes 186 g/m<sup>2</sup> Kraft from more than one supplier for example, each supplier may run a different recipe and so a different figure would result for the “post-consumer” waste content.

In a typical converter with two suppliers (or more) of each of four grammages for six different types of liners and fluting materials the possible permutations are huge.

It is also possible that a mill that ostensibly only recycles fibre, making the 190 g/m<sup>2</sup> Test liner in the above example, could find that it is not able to claim its material is “100% recycled fibre”. If some of its fibre source is obtained from a corrugator converter, those fibres may have to be excluded from the post consumer recycled content calculation.

**Pragmatic Approach to Calculating the Total Recycled Fibre Content**

Many corrugated converters adopt a pragmatic approach to the subject, using typically quoted factors to categorise a finished board. Such factors, applied to the example above would give:

<b>Board Component Grammages</b>	<b>Percentage Recycled Fibre</b>	<b>Weight of Recycled Fibre</b>
186 g/m <sup>2</sup> Kraft Liner	20	37
105 g/m <sup>2</sup> Waste Based fluting “B” Flute	100	140*
190 g/m <sup>2</sup> Test Liner	100	190
516 g/m <sup>2</sup> Total Combined Board	71**	367
* “B” Flute Draw Factor Assumed : 140 = 105 x 1.33 ** (367 x100) ÷ 516 = 71%		