



What is Quality Recovered Paper?

‘Quality recovered paper’ is used paper and board which has been collected from the waste stream and can be used, without further sorting, in the papermaking process to make new paper and board products. This is best achieved by segregating the used paper at the source of its production in order to minimise contamination during the recovery process.

Contaminants include:

- plastics;
- glass;
- burnt paper;
- cans and metals;
- grease, oil and dirt;
- food debris and other organic matter;
- rain and moisture;
- papers not suitable for recycling.

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Why Does Quality Count?

There are four main reasons why the quality of recovered paper is important:

1. Impact on machinery

Paper machines are large, complex and expensive pieces of machinery, costing in the region of £300 million each.

Running at 40mph to 60mph, foreign material such as glass or glue can have serious implications on the wear and tear of a machine, and in some cases can cause a complete shut down. It has been estimated that a complete shut down of a paper machine can cost a company up to £60,000 per hour.



2. Impact on the customer

Using good quality recovered paper ensures that the end paper and board product is also of good quality. Paper and board made from recovered paper must match the physical, performance and visual characteristics of comparable products made from virgin fibre. A product made from contaminated paper may compromise product quality in terms of strength, print quality, food safety or visual presentation, and may not be acceptable for the end customer.

Poor quality recovered paper increases the chances of entire batches of finished

paper and board being rejected by the customer that in turn may raise the production costs of the final product and impact on its competitiveness. If this were to happen too frequently, recycling would no longer be an economical option and the future of secondary reprocessing would be threatened.

3. Environmental impact

If a batch of recovered paper is deemed to be of too poor a quality, reprocessors may have no alternative but to send it back to the producer for further sorting, or send it to be landfilled or incinerated. This is especially damaging given the resources and energy required to collect and sort the material in the first place.

If poor quality material manages to get into the papermaking process, it can have a negative impact on the efficiency of the machines or require increased chemical additions to overcome the problems. Both of these scenarios can lead directly to higher carbon emissions from the paper mill itself and from the chemical industry.

Whereas recycling paper stores carbon in a solid form, landfilling and incineration causes the paper to break down and release carbon gases into the atmosphere. This has an adverse effect on our environment, and exacerbates global warming.

In 2006, the Waste and Resource Action Programme (WRAP) produced a report, titled *“Environmental Benefits of Recycling”*, which provided a comprehensive review of international life cycle analysis (LCA). This demonstrated the huge benefits of recycling over both incineration and

landfill, concluding that the UK's current recycling of those materials (including paper and board) saves between 10 - 15 million tonnes of CO₂ equivalents each year compared to the current mix of landfill and incineration with energy recovery.



A further report released in 2010 'Environmental Benefits of Recycling – 2010 Update' looked at new LCA's since 2006. This report reinforced the key conclusion of the first report that recycling of paper and cardboard, for most indicators assessed, gives more environmental benefits than other waste management options.

4. Economic impact

Currently, much of the poorly sorted paper recovered from the UK waste stream is exported to destinations such as India, Indonesia and China. There, labour costs are lower and reprocessors can afford to sort the batch of recovered paper by hand. However, no mill in the world can make paper from plastics, metals or glass, and this system simply creates a new waste stream outside of the UK that must still be managed in an environmentally sound manner. It is still UK waste but is no longer under the "duty of care" of the UK, and this can be seen as contrary to the overall principle of recycling.

Figures for 2013 showed that export markets remain key to the future of recovered paper and board collection in the UK, even during times of economic turbulence. Development of overseas markets must continue if more waste paper and board is to be driven out of the UK waste stream, in line with EU and UK waste strategies. CPI has doubts as to the long term sustainability of these markets.

Choosing the right collection system

The level of contamination can largely depend upon the type of collection method used:

Single Stream (co-mingled)

Contamination can be particularly prevalent in "single stream" (co-mingled) collection schemes. This is where all recyclables - paper, glass, cans, plastic etc - are stored together in one container and collected, mixed, in the same vehicle before being sorted out again at a Materials Recovery Facility (MRF). This is particularly common with newer Local Authority kerbside collection schemes. It is thought that the amount of material rejected at the MRF due to contamination is upwards of 10% and this does not take account of

the potential for further material to be rejected at the reprocessor due to output contamination.

"Segregated" or Kerbside sort

"Segregated" collection is a system where recyclables are sorted into different compartments of a collection vehicle depending on material (paper, glass, cans, plastic etc), thereby removing the need for sorting at a MRF. Segregated collections tend to produce cleaner, less contaminated recyclates, with a typical contamination level of <1%¹.

"Two-Stream" co-mingled

A third method, "twin stream" or "dual stream", sees the collection of material in two batches: typically with paper and card being segregated from other recyclables at the point of collection. In this way, paper can be kept clean and free of contaminants whilst the remaining recyclables are sent to a MRF for resorting; a much simpler task without paper and card.

Drawing on recent developments, the EU's revised Waste Framework Directive expresses a preference for separate collection of recycling over co-mingled collections as the means most likely to achieve the purpose of the Directive. It states that "an establishment or undertaking which collects waste paper, metal, plastic or glass must, from 1st January 2015, take all such measures to ensure separate collection of that waste" where "technically, environmentally and economically practicable" (TEEP) and "appropriate to meet the necessary quality standards for the relevant recycling sectors".

Where there is no choice but to opt for a co-mingled collection system, CPI would recommend the following actions be taken in an attempt to keep contamination to a minimum:

- put your paper and cardboard into a carrier bag to keep it clean and free from other contaminants;
- ensure your tins and jars are both clean and dry before placing them in your recycling container;
- ensure the lid of your recycling container closes tightly before placing it outside for collection, to prevent rain and damp from penetrating the container and being absorbed by the paper;



- don't include paper or cardboard that is highly contaminated with food residues, such as greasy pizza boxes or fish and chip wrappers, into your recycling container;
- don't include pieces of broken glass, such as a jar that has been dropped.

¹ *Choosing the right collection system*, WRAP 2009
http://www.wrap.org.uk/sites/files/wrap/Choosing_the_right_recycling_collection_system.pdf

PAS 105 2005

The Waste and Resources Action Programme (WRAP), together with other members of the secondary raw material supply chain, has developed a Publicly Available Specification (PAS) in an effort to improve recovered paper quality from the domestic waste stream.

PAS 105 makes recommendations for, and gives guidance on, good practice for the collection, handling and processing of recovered paper intended for recycling within UK end markets. It is applicable to paper collected by local authorities, local authority contractors, community groups and charities from households and other sources that generate similar material to households.



It is imperative that quality is built into the process now, to ensure that the material is recovered in such a way that provides the best economic and environmental option for the entire recycling chain. Significant carbon reduction can be achieved by recycling the material instead of landfilling or incinerating it, but only if the material is of a quality that can allow efficient reprocessing.

Where can I get more information?

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