

Healthy Printing Charter

1. Introduction

Printing has a tremendous history, and a great potential future with innovations in packaging and 3D printing. The industry is also improving environmental & social performance of its products. Experience from that history suggests that healthier printing increases resource productivity by improving recyclability as well as increasing the use of recycled feedstock, and supports optimal conditions for a healthier economy.

Healthy printing improvements vary between products and regions, so it makes sense to share and scale up best practices. The following Healthy Printing Charter is designed to do that by supporting knowledge transfer and scale up of methods for printing that are *healthy for people, the economy and the environment*.

2. Charter Context, Scope

A healthy printed product that combines paper, additives, inks and printing processes is not yet available, or is only in niche markets. In that context, signatories to this Charter are not expected to start mass-producing a total product, but instead recognise this as a goal to work towards. However, individual components like inks are available and could be used as starting points.

In that context, the Charter applies to printed paper, paperboard and cardboard products & by-products, and to plastics where they are used as coatings, or where plastics and paper are laminated. It is also intended as a guide for printing on other substrates. In future it may include 3D printing with paper & cellulose.

3. Charter Purpose

The Charter is a first step to scaling up best practices by establishing a transparent, measurable and reliable guide for stakeholders to act, for example by having access to information on those practices and a clearer pathway to adopting them.

Purposes of the Charter are;

- A. Actively support beneficial impacts instead of just minimizing negative impacts. For example improving the quality of recycled products instead of just reducing the impacts of printing.
- B. Describe the qualities of products to scale up quantifiably.
- C. Provide a process for creating roadmaps with measurable transparent goals, so stakeholders throughout the cycle share plans and timelines.

4. Intentions

You don't have to be perfect to sign the charter! Measurable improvement towards those parameters is the main aim.

The following intentions will apply at different levels to different stakeholders in the chain. For example tracking and tracing are only technically feasible by certain players, but a customer for printed products might still ask the supplier if the sources of a product could be tracked. Thus, by stating these intentions the signatories might not be obliged to implement the activities themselves, but rather to ask their partners if they have implemented them.

Signatories subscribe to the following declarations and activities.

4.1. Charter Aims

Support production of high quality printed products that society values, while returning to ecosystems the resources required to continuously regenerate these versatile materials. To do this the signatories subscribe to the following principles;

- Working towards healthy printed products by developing or optimising criteria for best practices, design & purchasing through stakeholders networks.
- Working towards every ingredient and material in the printed paper cycle becoming a beneficial biological or technical resource for other processes.

4.2. Biocompatibility as a Quality Innovation

Charter signatories consider biocompatible printed products as a quality innovation that improves competitiveness of the industry by expanding the uses of products, enhancing customer trust, reducing liability risks and the requirement for regulation, and supporting natural processes that produce raw materials.

4.3. Transparency

To establish credibility and marketable claims, the intentions and activities will be communicated transparently to the public by each Charter signatory.

4.4. Encourage co-operation among participants

Encourage co-operation among participants throughout the printing & paper industry cycle; foresters, paper manufacturers and printing ink manufacturers, diverse suppliers, research institutes, printers, chemicals manufacturers, auxiliary chemicals providers, consultants, designers, retailers, customers and recyclers, as well as NGOs and regulators who are involved with the industry.

4.4.1. Involving Stakeholders

Eco-labels for sustainability of production or material sources are a start, but this Charter aims at something more. Charter signatories will involve their stakeholders actively by telling a story about the product they are using and how its qualities are being improved according to an organized programme of goals, milestones, and timeframes.

4.4.2. Tracking & Tracing

Charter signatories acknowledge that dedicated collection and recovery systems for optimized paper products will help to keep the quality of the resource high. The aim is to achieve this by piloting high value tracking & tracing to determine the business case. The technical and financial structure for this will take time and involve multiple players, but there are opportunities & technologies to start developing the process.

4.5. Set Measurable Goals

4.5.1. Verified progress

Purchasers and designers will encourage their suppliers or customers to use printed materials that use inks and coatings that have made measurable progress towards healthy printing according to a transparent organised programme.

4.5.2. Production and purchasing

Supplier signatories will aim to produce, and customer signatories will aim to purchase, printed products that have 100% defined ingredients that are biocompatible and can be safely composted, used in other products, or burned without toxic substance-removing filters according to transparent criteria. The qualitative and quantitative criteria for those requirements will be set by the signatory members and the network coordinator together.

4.5.3. Preferred ingredients

Signatories will utilize where available, preferred ingredients or “positive lists” that are designed to support healthy printed products. In this way, companies can be frontrunners in their markets while accelerating progress of the industry.

4.6. Preferred Purchasing

Preference will be given by purchasers to suppliers and manufacturers who demonstrate capacities for achieving the goals described previously, and in a cost-competitive way.

5. Signatory to Healthy Printing Charter

Company Name:

Address:

Email:

Date:

Authorised Signature:

Annex 1: Terminology. Speaking the same language.

In the circular economy and Cradle to Cradle the same terms often have different meanings for stakeholders. The following definitions are used here, in alphabetical order;

1.1. Bio-Compatible vs. Compostable

The term “compostable” is often used for printed paper and plastics, but it is not standardized.

- Regulatory and corporate definitions of “compostable” differ. Regulatory definitions of compostable often allow a percentage of materials that are not validated as safe for living systems (e.g. European Standard EN 13432).
- Paper or plastic might be compostable but the inks used for printing on it might not be.
- Paper or plastic might be compostable under laboratory conditions but not in household composts. For example, there are new testing methods for household compostability¹.
- The term „compostable“ might suggest that paper or plastic should be used once then thrown into the compost, whereas it is preferable to re-use paper fibres or plastic components repeatedly before they are composted.
- Compostable is not to be confused with biobased. Many biobased products are not designed to be compostable.

For those reasons, the Charter focuses on quality assurance so paper and plastics could be used repeatedly in a cascade to maximise fibre and polymer re-use. In order to do this, the Charter supports the use of chemicals in printing and paper that are proven to be compatible with biological systems i.e. biocompatible.

1.2. “Cascade”

Paper fibres cannot be recycled at the same level of quality using current technology. They can only be downcycled in a controlled cascade, where the fibres are used for as long as possible at the highest level of quality, then gradually downcycled for other uses.

Cascade example; from high grade office paper to high grade office paper again, or to lower grade office paper to packaging to cardboard, after which it safely enters biological systems.

Cascades are designed to solve the following problems in the paper cycle;

- Paper fibres can only be reprocessed into new products a limited number of times, as each time they get damaged and eventually wear out. There is no recycling of paper at the same level of quality; instead a constant supply of primary raw materials is needed to replace unusable fibres.
- There is a large outflow of by-products from paper production. This flow often has no

¹ <http://www.okcompost.be/en/recognising-ok-environment-logos/ok-compost-amp-ok-compost-home/>

alternate use because it is composed of many compounds, some of which are harmful if they get into natural ecosystems.

- Soil and nutrients used to grow wood for paper are being used far faster than they are replaced. Grasses and agricultural wastes from faster-growing feedstock are substitutes for wood, but care must be taken that they do not compete with food production. Erosion and overproduction are degrading soil while much of the biomass grown is ultimately incinerated or becomes contaminated with compounds so it cannot be returned to forestry. Technological solutions are possible, like improving the materials health of products so their residues could be used for soil manufacturing, but these require collective action by various players along the paper chain, as well as support from regulatory agencies.
- Traditionally, the timeframe required to grow fibre for paper has often been much longer than the timeframe to use and destroy paper, although in some cases this is changing with new sources. Some paper is only used once or twice then destroyed after only a few hours, weeks or months, while it often takes years to grow fibres to replace it.
- Other high quality paper is mixed with lower quality products, resulting in rapid downgrading e.g. printing paper becomes toilet paper then is disposed of, or white fibre is used in packaging products and thus lost to high end paper production.

Those accelerate demand for raw materials, which puts additional pressure on habitats.

As well, some chemicals, like solvents and others, used in paper production, printing and recycling are not compatible with biological systems, so solutions like paper mulching or using the ash from burned paper cannot contribute to regenerating the topsoil to grow trees and other biomass. This results in continual loss of biological resources and degradation of soil quality.

1.3. Healthy Printing

The term “healthy” is interpreted many ways, so the Charter provides specific parameters. In many cases healthy printing is a goal, not a fact. The criteria for reaching the goal are;

- The product can be safely reprocessed according to measurable criteria and its by-products are safe for use in other products, as well as composting and returning to the soil. Those uses lead to a healthier economy by reducing reprocessing costs and improving resource productivity.
- Sludge generated during reprocessing is a safe resource for other uses. This also improves the economic viability of sludge as a resource.
- Water quality standards are not jeopardised and wastewater treatment during recycling is not hampered. This also reduces the cost of cleaning wastewater used in reprocessing.
- Products go beyond regulatory compliance, are safe to use and re-use according to the highest standards, and are not knowingly formulated to contaminate people, food, air, water or soil.

1.4. Paper

The term “paper” is usually applied to processed products that often contain a range of chemicals, including plastics, to improve performance. The term is used here to refer to the raw paper feedstock before enhancements are added, as well as the finished coated or optimised product. “Paper products” might also refer to printed tissue paper, paper board and cardboard, as well as paper coverings on e.g. wallboard.

1.5. Recycled paper

The term “recycled” paper is used frequently, but paper is actually downcycled. Fibre is damaged during processing and some of those processes produce toxic by-products. For example, high-grade coated paper or paper that is laminated are rarely recycled back into the same grade. As well, usually only the fibres in paper are reprocessed, with the rest of the paper becoming sludge which is used for other products or incinerated. As a result, the term “recycled” is only generic and not intended to describe the quality of the paper or processes.