Recyclability of paper and paper products.
The Aticelca standard 501-17

Massimo Ramunni
Aticelca
WHY

Comieco and Innovhub were the first to highlight a growing need to have a tool to provide objective and measurable elements to eco-design.

This first driver was followed by a growing request to demonstrate compliance to EN13430.

In a later stage it comes the request to better inform the consumer.
HOW AND WHEN

A technical standard was considered the best way to provide a tool addressing those issues.

Aticelca, Comieco, Assocarta, Assografici, Innovhub and Lucense established a drafting team, followed by open consultations.

The first standard was issued in 2011, followed by small amendments in 2013.

Practice and Ecopaperloop project in the meantime provided new experiences.

Major revision in 2017 edition, providing a better alignment with the practice in industrial plants, introduce a differentiation between plastics and flakes and a new icon.
WHAT

The technical standard reproduces at laboratory scale what happens at industrial scale when a paper mill recycle the paper for recycling. Pulping, fibre cleaning and sheet formation are performed.

The following parameters are measured:

- Coarse rejects
- Flake content
- Macrostickies area
- Sheet formation and adhesiveness
- Optical inhomogeneities
- Ash content (optional)

Results are scaled in 4 levels of recyclability: **A+**, **A**, **B**, **C** (and not recyclable)
FEW PICTURES
FEW DEFINITIONS

Paper and board for recycling: definition form 643, includes both paper material and paper products.

Definition of recyclability: when the fibre content of paper and paper products can be used to produce, in an efficient and effective way (on a technological and an economical point of view) using commonly technologies, new paper having a quality suitable for the market.

Paper material: sheets or reel of paper (>50% cellulose fibre).

Paper product: finished products as boxes, books, napkins, etc (>50% paper material).
Laboratory report must clearly specify the sample (e.g. used or unused). Ash content and macrostickies > 2000 µm are optional. If flakes contain micro-plastics it counts as coarse rejects. Optical inhomogeneity is based on comparison with standards. Homogeneous colored paper level is minimum 2.

<table>
<thead>
<tr>
<th></th>
<th>Recyclable with paper</th>
<th>Not recyclable with paper</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Level A+</td>
<td>Level A</td>
</tr>
<tr>
<td><strong>Coarse rejects ( % )</strong></td>
<td>&lt; 1.5</td>
<td>1.5 – 10.0</td>
</tr>
<tr>
<td><strong>Macrostikies area ϕ &lt; 2000 µm. (mm²/kg)</strong></td>
<td>&lt; 2.500</td>
<td>2.500 - 10.000</td>
</tr>
<tr>
<td><strong>Flakes (%)</strong></td>
<td>&lt; 5.0</td>
<td>5.0 – 15.0</td>
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<tr>
<td><strong>Adhesiveness</strong></td>
<td>Not detectable</td>
<td>Not detectable</td>
</tr>
<tr>
<td><strong>Optical inhomogeneity</strong></td>
<td>Level 1</td>
<td>Level 2</td>
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</tbody>
</table>
POSSIBLE USES and ICONS

The laboratory report shows the level of recyclability with paper.

Results can be used for eco-design, support the compliance with EN 13430, support self-declaration or declaration using Aticelca icons.

Declaration of recyclability must be always accompanied by the level.
THANKS

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