## **TECHNICAL SPECIFICATION**



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# c r Graphic technology and deinked pulp — Guidance for assessing the deinking performance of printed paper products

e g, luatio. nprimé Technologie graphique et pâte désencrée — Lignes directrices pour l'évaluation de la performance de désencrage des produits en papier imprimé



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### Contents

Page

| Fore  | word   | iv                              |
|-------|--|---------------------------------|
| Intro | oduction   | v                               |
| 1     | Scope  | 1                               |
| 2     | Normative references   | 1                               |
| 3     | Terms and definitions3.1Terms related to material3.2Terms relating to paper recycling and deinking3.3Terms relating to quality requirements  | 1<br>1<br>2<br>2                |
| 4     | <ul> <li>How deinkability contributes to recyclability in support of the circular economy.</li> <li>4.1 What is circular economy? The importance of recyclability.</li> <li>4.2 Specific recommendations for printing.</li> <li>4.3 Specifics recommendations for converting.</li> </ul> | 3<br>3<br>4<br>5                |
| 5     | Relevant deinking processes5.1General5.2Pulping5.3Flotation5.4Washing5.5Dispersing5.6Bleaching   | 5<br>5<br>6<br>6<br>6<br>6<br>7 |
| 6     | Deinking performance6.1Principles for assessment of deinking performance of printed products6.2General experience  | <b>7</b><br>7<br>7              |
| 7     | Quality characteristics of industrial deinked pulps7.1General7.2Pulp Brightness7.3Pulp Colour7.4Dirt Particles   | 9<br>9<br>9<br>9<br>9           |
| 8     | Possible usages of industrial deinked pulps (based on <u>Clause 7</u> characteristics)   |                                 |
| 9     | Reporting  |                                 |
| Ann   | ex A Deinking methods  |                                 |
| Bibl  | iography   |                                 |

#### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see <a href="https://www.iso.org/directives">www.iso.org/directives</a>).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see <a href="https://www.iso.org/patents">www.iso.org/patents</a>).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see <a href="https://www.iso.org/iso/foreword.html">www.iso.org/iso/foreword.html</a>.

This document was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*, and ISO/TC 130, *Graphic Technology*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at <u>www.iso.org/members.html</u>.

#### Introduction

Printed graphic paper products play a key role in society. They are conveyers of information through newspapers and magazines and of culture through books. They therefore contribute to promote democratic debate and culture but also education and social inclusion-

Paper products are good examples for the circular economy since they are recycled after use already to a high extent, higher than any other post-consumer material. The recycling of paper products is beneficial because it allows the fibre to be used several times. However, a good balance between virgin and recycled fibres is necessary to compensate for losses of material within the paper loop and to avoid any forest depletion.

Within the paper value chain there are two main material loops – graphic products and packaging products. Optimum circularity is given if graphic paper products can be kept within the graphic loop. This document describes the common recycling processes for graphic paper for recycling and addresses the influencing factors from the product design. Further influencing factors – which are out of this document's scope – are collection and handling of used paper products.

Common recycling processes for graphic paper for recycling include deinking, the removal of ink from the pulp. The majority of paper for recycling that are deinked originates from households and is therefore a blend of various print products made with different printing and finishing technologies as well as a variety of paper types. The common deinking processes therefore have to be capable to treat this blend of paper products for producing quality pulp in an ecological and economical way.

This document mainly addresses stakeholders in the value chain of printing in order to make them aware about the life of their products after intended use and how they can contribute to the functioning of the cycle.

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# Graphic technology and deinked pulp — Guidance for assessing the deinking performance of printed paper products

#### 1 Scope

This document provides guidance for representatives of the paper value chain for the design of printed paper products, with a view to deinkability contributing to recyclability in support of the circular economy.

It describes relevant deinking processes, and the deinking performance of printed paper products produced with different printing, finishing and converting technologies in those deinking processes.

It provides a list of relevant quality characteristics of industrial deinked pulps and a list of their possible usages based on those characteristics.

This document does not include guidance for paper-based products which are not intended to be deinked.

#### 2 Normative references

There are no normative references in this document.

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <a href="https://www.iso.org/obp">https://www.iso.org/obp</a>
- IEC Electropedia: available at http://www.electropedia.org/

#### 3.1 Terms related to material

### 3.1.1 recycled paper

paper incorporating fibres obtained from paper recovered after use

[SOURCE: ISO 5127, 3.3.5.2.10]

#### 3.1.2 pulp

fibrous material, generally of vegetable origin, made ready for use in further manufacturing processes

[SOURCE: ISO 4046-2, 2.46]

#### 3.1.3 deinked pulp DIP

*pulp* (<u>3.1.2</u>) made from paper and board for recycling from which inks and other contaminants have been removed