

## **Introduction**

The intention to develop this method was the need to have a gravimetric verification for the results of the visual entry inspection according to INGEDE Methods 7 and 8. This INGEDE Method 14 can also serve as a gravimetric inspection method for itself, not only in connection with INGEDE Methods 7 and 8.

## **1 Scope**

This INGEDE method describes a procedure to gravimetrically determine the composition of recovered paper for deinking. It mainly applies to recovered paper grade 1.11 according to EN 643. To be more specific and informative, the allocation criteria may be further differentiated as it is possible in the case of visual inspection.

## **2 Principle**

A sample of a recovered paper is separated manually into different fractions and their portions are determined by weight.

## **3 Equipment and auxiliaries**

Containers for sampling

Bins for separating

Scale - weighing capacity high enough to weigh the complete sample, accuracy 0.1% of the sample weight as minimum requirement

Optional: Core drilling device

## **4 Procedure**

### **4.1 Sampling**

In general, the weight of the sample should not be inferior to 30 kg, i.e. 0,15 per cent of a delivery of 20 tons. The largest feasible sample size should be chosen. When using a core drilling device the sample size is usually much smaller. In that case the user has to make sure that the size of the sample is representative.

#### **4.1.1 Sampling from unbaled recovered paper**

A wheel loader which is particularly suited for sampling picks a very large sample from the recovered paper pile after unloading and empties it into a stable sample container. The volume of the sample container limits the size of the sample taken to about 30 – 50 kg.

#### **4.1.2 Sampling from baled recovered paper**

For the sampling the bales have to be dewired. At least 2-3 bales must be chosen at random; however they should be representative for the total load, especially if the load is inhomogeneous.

Option 1: The bales have to be divided manually into several sheaves. Now samples can be taken as big parts of those sheaves. The samples have to be taken at least from five places of each bale.

Option 2: The bales have to be loosened and mixed with the help of a wheel loader. Now a sample can be taken with a wheel loader in the same way as from unbaled material.

Option 3: Drilling

Contrary to option 1 and 2 the bales do not have to be opened and the sample size is given by the drilling system.. However several drillings should be carried out to get a representative sample of the investigated bale.

## **4.2 Recovered paper composition**

The determination of the composition can be made in individual detailing. The minimal requirement is a splitting into accepted papers and unwanted materials. It is up to the user of this method to decide about the degree of a further detailing. A more specified classification can be made according to the guideline below, but can be even in more detail, e. g. in stapled and glued magazines:

### Accepted paper

- Newspapers

- Magazines

- Other accepted papers

  - Catalogues

  - Flyers

  - Office papers

  - ...

### Total unwanted material

#### Unwanted papers:

- Unbleached papers and boards

- Dyed papers

- Papers not suitable for deinking

- Laminated papers

#### Non-paper components:

##### Light non-paper components:

  - CD's

  - Plastic bags

  - Hard Plastics

  - Synthetic materials

  - Synthetic papers

  - Textiles

##### Heavy non-paper components:

  - Glass

  - Metal

  - Wood

  - Sand and building materials

### **4.3 Assessment of the various components**

The sample is subsequently sorted according to the various components and applicable allocation criteria as described in chapter 4.2. Finally, the individual fractions are being weighted. The final results are expressed as percentages related to the total sample weight.

Beyond the determination of the composition other observations like moisture, age, odour, mould, rotting, dusting or the occurrence of dangerous waste should be noted in the report.

Note: If a visual inspection was made before, the gravimetric determination of the composition can be made by the same staff or by somebody else.

## **5 Report**

The inspection report should comprise the following data:

Clear identification of delivery:

Log number / weight number / order number

Date and time of delivery

Supplier company

Recovered paper grade according to delivery documents

Kind of delivery (loose or bales)

Optional:

Recovered paper grade according to inspection

Sorting place / point of collection / source

Shipping company

Licence plate number / wagon number

Name / signature of inspector

Analytical result:

Sum of unwanted material

Noticeable defects according to age / moisture

Optional:

More differentiation see 4.2

Comments

In cases of refused deliveries, photographs showing the evidence provide a helpful tool.

## **6 References**

### **6.1 Cited Standards and methods**

EN 643 – European List of Standard Grades of Recovered Paper and Board

INGEDE Method 7 – Visual inspection for recovered paper for deinking – Unbaled delivery

INGEDE Method 8 – Entry inspection of baled recovered paper for deinking

### **6.2 Literature and other related documents**

European Declaration on Paper Recycling 2006 - 2010;

[www.paperrecovery.org/publications/erpc\\_publications.asp](http://www.paperrecovery.org/publications/erpc_publications.asp)

Guidelines” Responsible Management of Recovered Paper”;

[www.paperrecovery.org/publications/erpc\\_publications\\_positions.asp?folderid=513#](http://www.paperrecovery.org/publications/erpc_publications_positions.asp?folderid=513#):

Guidelines on responsible sourcing and quality control

Guidelines for Responsible Sourcing and Supply of Recovered Paper

Recovered Paper Quality Control, Guidelines

Best Practices for the Global Inspection of Recovered Paper

Best Practices: Recovered Paper Baling Conditions

Guidelines for paper mills for the control of moisture content in recovered paper

Guidelines for paper mills for the control of the content of unusable materials in recovered paper

### **6.3 Sources**

The original version of this method was a part of INGEDE Method 7, edition December 1999. Since both the visual and the gravimetric inspection were part of INGEDE Method 7, it was not clear which inspection procedure was used when referring to INGEDE Method 7. Therefore the INGEDE Working Group Recovered Paper Quality decided to split the method into two, leaving the visual inspection as INGEDE Method 7 and creating INGEDE Method 14 for the gravimetric verification and inspection.

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