

## **Introduction**

INGEDE has set up several methods for the entry inspection of paper for recycling. A unique procedure is INGEDE Method 7, in which loose paper for recycling is assessed visually and the composition as well as the content of unwanted material is calculated from the visual result. INGEDE Method 14 serves as gravimetric verification or as a stand-alone method for gravimetric inspection. This INGEDE Method 8 refers in large parts to these two methods and describes only parameters specific to bales and sampling from bales.

## **1 Scope**

This INGEDE method describes a procedure how to select and how to open bales of deinking grades and how to make bale-specific assessments. The further inspection has to be done by applying INGEDE Methods 7 or 14.

## **2 Terms and definitions**

This method does not contain any specific terminology.

## **3 Principle**

Unless otherwise stated, the following descriptions refer to the inspection of one bale.

Depending on the quality feature to be analysed, a sufficient number of bales has to be selected at random from a particular truck delivery to be inspected. For waggon deliveries the number of bales should be in proportion to the tonnages. The bales are to be unloaded in a way that five sides per bale are visible and accessible.

Assessment of the baling quality is done by inspection of unopened bales. Since their composition can appear significantly different between the outer surface and the interior, the quality inspection uses the material inside the bales by opening or drilling.

## **4 Equipment and auxiliaries**

Core drilling device, if applicable.

## **5 Procedure**

To perform INGEDE Method 7 and/or 14 at bales some preparation has to be done:

### **5.1 Selection of bales**

The bales which will be inspected have to be selected randomly.

For procedures of selection please refer to Annex 1 of this method.

## **5.2 Bale opening**

### **5.2.1 Bale-opening method I**

The bale to be assessed is opened and split up so as to obtain several clods and gain access to the inner parts of the bale.

### **5.2.2 Bale-opening method II**

The bale to be assessed is opened and the material evenly spread so as to obtain a covered surface of at least 30 m<sup>2</sup> of roughly the same layer thickness.

## **5.3 Sampling**

### **5.3.1 Sampling from opened bale**

The bale is to be sampled at various points with individual clods being used as samples or by taken a sufficient amount of paper randomly from the spread surface, most suitable by a bucket loader.

### **5.3.2 Sampling from closed bale (e. g. Core drill method)**

The bale to be sampled is being punctured with a core drill in the direction of compression. Depending on the type of core drill used (diameter and length of boring rods), a sufficient sample size may be obtained with a single boring operation. If, however, the core drill measures only half the length of the bale, two borings – at two diametrically opposed points on the right and left – in the direction of compression are required. The core drill is to be operated according to applicable operating instructions.

Core drill sampling usually does not affect stackability of the bales.

## **5.4 Inspection site and conditions for inspection**

Please refer to chapter 5.1 and its sub-chapters in INGEDE Method 7.

## **5.5 Condition at the time of delivery**

An assessment of the general condition of delivered paper for recycling requires close-up inspection from all angles of the bale to be sampled. The following assessment criteria are to be considered:

- Stackability
- Compliance with dimensions
- Compression quality (no voids, “same” consistency)
- Compliance with wiring directives
- Size of pieces (in the case of shredded material)

### **5.6 Odour, mould and rotting**

Please refer to INGEDE Method 7, chapter 5.3

### **5.7 Composition**

If the visual inspection is to be performed by looking at the gaps between clods, the inspection surface should be 30 m<sup>2</sup> or more. This means that at least 10 gaps have to be inspected on both sides which usually require more than one bale.

For assessing the composition, please refer to INGEDE Method 7, chapter 5.4

### **5.8 Moisture**

Please refer to INGEDE Method 7, chapter 5.5

It is to be pointed out in this context that due to atmospheric influences and paper for recycling storage both prior and subsequent to baling, the moisture content in the bale core may differ from that on the bale surface.

### **5.9 Age**

Please refer to INGEDE Method 7, chapter 5.6

## **6 Report**

The main report is the inspection according to either INGEDE Method 7 or 14. In addition, the procedure of sampling from bales has to be stated.

## **7 References**

### **7.1 Cited Standards and methods**

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

INGEDE Method 14 – Gravimetric determination of recovered paper composition

### **7.2 Literature and other related documents**

Responsible Management of Recovered Paper – Guidelines on “responsible sourcing and quality control, published by CEPI, some of the documents together with ERPA and FEAD

### **7.3 Sources**

This method was established in June 1999 for the first time.

**ANNEX 1**

**Procedure for bale selection**

One method of random bale selection is commonly known as the “lottery method”: the bales in the delivery vehicle are assigned a specific position number. Thus, e. g., all bales are (mentally) numbered consecutively – beginning with 1 in the first row below – in opposite direction of motion. Subsequently, ticket numbers are selected at random by means of an electronic (e. g. computer) or mechanical (e. g. ticket box, dice) random sequence generator. The bale whose position number turns out to be identical with the number of the ticket drawn is the one to be inspected. Depending on varying on-site conditions such as, e. g., different means of transport (train or truck), this method has to be modified accordingly.

In the course of a method to inspect paper for recycling of grades 1.02 and 1.04, PTS developed a procedure for bale selection. The method can be downloaded from:

[http://www.rohstoff-altpapier.de/pdf/VERFAHRENSANWEISUNG\\_EK\\_05\\_2.pdf](http://www.rohstoff-altpapier.de/pdf/VERFAHRENSANWEISUNG_EK_05_2.pdf).

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