

Harmonised European laboratory test method to produce parameters enabling the assessment of the recyclability of paper and board products in standard paper and board recycling mills

Short title: Cepi recyclability laboratory test method Version 1, December 2020

0. INTRODUCTION

The paper and paper board value chain is an exemplar for circularity, displaying very high recycling rates. Moreover, technical innovation is creating new products from paper and board and other cellulose fibre-based materials that are increasingly replacing other traditional packaging materials.

To maintain and further increase the sustainability and circularity of the paper and board value chain and to help EU Member States and other European countries meet high recycling targets¹, it is important to ensure paper and board-based materials and other cellulose fibre-based products (e.g. moulded fibre products) are recyclable by the paper industry. The paper manufacturing and converting industry has issued joint guidance on paper-based packaging recyclability² at European and national level. To confirm recyclability, it is necessary to define a harmonized test method as a basis for assessing the general recyclability of these materials and products.

The harmonised test method emulates the most common phases of the industrial processes to measure the main parameters of recyclability of paper and board-based materials and other cellulose fibre based products based upon current knowledge and technology.

This makes it possible to:

- supplement the evaluation of recyclability required by EN 13430 with regard to paper and board-based materials and other cellulose fibre-based products that are sent for recycling in the paper industry.

- guide eco-design, in terms of recyclability, of paper and board-based materials and other cellulose fibre-based products that are currently in use, as well as new materials currently being developed and of additives used in the converting phase that can affect the recyclability of the final product;

- support declarations related to the recyclability of materials or products based on the grading systems developed by third-party organizations.

1. SCOPE AND FIELD OF APPLICATION

This document describes a method for determining, at a laboratory scale, the key parameters for evaluating the level of recyclability of paper and board-based materials and other cellulose fibre-based products, e.g. moulded fibre products, emulating the relevant phases of standard paper and board recycling mills without

¹ E.g. directives 2018/851/EU, 2018/852/EU set high recycling targets for municipal waste and paper-based packaging (85% by 2025, 90% by 2030)

Cepi, FEFCO, Citpa, ACE: Paper-based packaging recyclability guidelines. 2019.
Confederation of Paper Industries: *Paper and Board Packaging Recyclability Guidelines*, Revision One, Published January 2020

deinking technology³ or other special features to recycle paper for the purposes of producing new paper and board.

The method defined in this document enables analysis of both the process parameters (coarse reject, flake content, dissolved or colloidal solidscontent and adhesive particles with a diameter less than 2 mm) and the quality parameters of the product obtained with the recycled fibres (sheet formation, interfering materials e.g. stickies and visual appearance).

This document considers the minimum characteristics of paper and board products that can be generally recycled and therefore it does not take into consideration additional specifications necessary to further valorise the paper and board products using de-inking technologies. Nor does it include parameters of recyclability in mills with specialised processing technology.

2. NORMATIVE REFERENCES

This document incorporates, by way of dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed below. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated into it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

EN 643:2014	Paper and board - European list of standard grades of paper and board for recycling
ISO 5 263-1	Pulps - Laboratory wet disintegration - Part 1: Disintegration of chemical pulps
ISO 5 269-2	Pulps - Preparation of laboratory sheets for physical testing - Part 2: Rapid-Köthen method
ISO 1762	Paper, board, pulps and cellulose nanomaterials — Determination of residue (ash content) on ignition at 525 °C
ISO 15 360-2	Recycled pulps — Estimation of Stickies and Plastics — Part 2: Image analysis method
ISO 21 993	Paper and pulp — Deinkability test for printed paper products
UNI 11 743	Paper and board - Determination of parameters of recyclability of cellulose-based materials and products
ISO 638	Paper, board and pulps — Determination of dry matter content — Oven-drying method
ISO 4119	Pulps – Determination of stock concentration
ISO 4046	Paper, board, pulps and related terms – Vocabulary – Part 1:

³ EPRC: Assessment of printed product recyclability: Deinkability score User's manual, <u>www.paperforrecycling.eu</u>

EN 13430	Packaging – Requirements for packaging recoverable by material recycling
ISO 21993	Paper and pulp: Deinkability test for printed paper products
ISO 4119	Determination of stock concentration of pulps

Tappi ANSI T275 method on the use of Somerville

3. TERMS AND DEFINITIONS

While "paper" is defined by ISO 4046, for the purpose of this standard, the following terms and definitions apply (note: agreed scope: paper and board-based materials and other cellulose fibre-based products (e.g. moulded fibre products)

3.1. Paper and board: a web comprising substantially (at least 50%) of cellulosic fibres forming hydrogen bridge bonds, which may contain fillers and coatings. Moulded fibres are also included in this definition

3.2. Cellulose fibre-based products: Finished objects (such as packaging, printed materials, articles for domestic use, etc.) comprised of over 50% (in weight) of paper and board.

3.3. Paper and board for recycling: Natural fibre-based paper and board suitable for recycling and consisting of:

- paper and board in any shape
- products made predominately from paper and board, which may include other constituents that cannot be removed by dry sorting, such as coatings, laminates, spiral bindings, etc.

[EN 643]

3.4. Use of paper and board for recycling: This refers to the processes used in the recycling of paper and board in the paper industry. These processes include mainly the pulping of the paper and board for recycling, the separation of non-cellulose components, and the cleansing of the recovered pulp.. Different types of equipment are used depending on the type of paper and board to be recycled and the end product required.

3.5. Recyclability: The capacity of the material or product to be processed effectively from a technological and economic point of view in order to recover the cellulose fibres it contains and to produce new paper and board, employing the technologies predominantly used today in the paper industry to process paper for recycling.

4. PRINCIPLE

The recyclability of materials or products made predominately from paper and board is determined through a laboratory procedure emulating the relevant industrial phases in standard paper and board recycling mills dedicated to the recycling of paper and board . In particular, this method defines the parameters to measure in order to verify recyclability through:

- Ease at which the fibres can be separated in standard process or equipment.
- The potential to form sheets out of the recovered fibres without significant disruption.
- The visual appearance when formed into sheets.
- The level of coarse and fine rejects.
- The level of fragmentation of disrupting materials (adhesives, metals, plastic film). The level of or colloidal solids below 10 microns resulting from non-paper components in the tested sample.

A block diagram showing the different phases of the method is shown in annex A.

5. APPARATUS

- 5.1 Forced air oven able to maintain the required temperatures that are accurate to within ± 2 °C.
- 5.2 Analytical balance, accurate to within \leq 0.01 g.
- 5.3 Pulper, compliant with UNI EN ISO 5263-1 with sufficient power to process the quantities indicated in the method.
- 5.4 Fractionator, equipped with a screenplate with 5 mm diameter holes, a plate with 0.15mm wide slots.
- 5.5 Rapid-Köthen sheet former, in compliance with UNI EN ISO 5269-2.
- 5.6 Image analysis system comprised of:
 - scanner in order to capture the images, equipped with a minimal optical resolution of 2000 dpi;
 - software for the analysis of the area and size distribution of the adhesive particles (macrostickies), in compliance with ISO 15360-2⁴.
- 5.7 Thickener equipped with a 200 mm mesh wire. (as illustrated in annex C)

4The PTS DOMAS or Techpap SIMPALAB software or equivalent is considered suitable.

6. PREPARATION OF SAMPLES

The quantity of material or product must be sufficient to carry out all the measurements indicated by the method. An indicative quantity is 250 g air-dry weight.

Determine the dry content of the product or material in compliance with EN ISO638.

Weigh at least two aliquots of air-dried material or product, with a precision of 0.01 g, each corresponding approximately to 50 g dry weight.

If the sample is made up of products that weigh less than 50 g, weigh an additional fraction of product or one or more additional products in order to obtain a total aliquot weight for the test equal to 50 g dry weight.

If it is necessary to cut a fraction of product as described above or the sample is made up of a product or material that weighs more than 50 g, careful attention must be paid to ensure the correct and proportional inclusion of the parts containing elements different from the base product or material (for example, labels, seals, hot-melt glue, metallisation, paint). Any relevant information allowing a correct and proportional sampling must be present in the technical data sheet provided with the sample. The technical data sheet must contain the minimum content of information indicated in the Annex E.

In order to perform this operation accurately, cut the parts of product or material containing said elements and use them proportionally.

Cut the sample thus obtained into pieces $3 \text{ cm x} 3 \text{ cm} (\pm 0.5 \text{ cm})$ in size.

In order to avoid any problems with the functioning of the laboratory pulper, the nonpaper materials that can be easily separated, such as metal parts and rigid plastic material, can be removed and weighed separately.

The weight of these components must be added to the reject measured in the screening phase and the sum total constitutes the coarse reject of the process.

All sample quantities indicated hereinafter refer to the calculated dry weight of matter dried in an oven at (105 ± 2) °C.

If the paper and board material or product has been produced less than 15 day before, the sample has to be stored for the remaining days to reach 15 days from the date of production or it has to be aged at $60^{\circ} \pm 1$ for 72 hours as per the standard Ingede 11 before continuing with the testing procedure.

7. PROCEDURE

The method comprises the following phases:

- pulping;
- pulp dilution;
- measurement of the coarse reject;
- calculation of the content of dissolved and colloidal solids below 10 microns;

- first adhesiveness test and evaluation of optical inhomogeneity
- measurement of the flakes and thickening
- measurement of the adhesive particles (macrostickies)
- second adhesiveness test and evaluation of optical inhomogeneity

7.1 Pulping

This phase entails pulping the material and preparation of at least two pulp samples for the subsequent analyses.

Pulp a 50 g sample using a machine compliant with UNI EN ISO 5263-1, using mains water at a temperature of around 40 ± 1 °C and the pH of 7 \pm 1.

Add the material to the pulper and pour in the aforementioned mains water, without pre-wetting or soaking the sample prior to pulping.

Pulp the sample for 10 minutes (30 000 revolutions) at a consistency of 2.5%, corresponding to 50 g of material in a total volume of 2 litres.

If the sample contains materials that are not easily pulpable requiring greater mechanical force that is incompatible with the machine, the material may be divided into two samples of 25 g each and pulped separately in a total volume of 2 litres for 10 minutes for each test.

On completion of the two tests, combine all the pulp obtained into a single sample and recover all of the pulp from the pulper with the help of mains water.

In the case of a product or material whose cellulose components are resistant to pulping and the outcome of the test is coarse reject of over 40%, a second measurement of the coarse reject may be performed under the same test conditions but for an overall duration of 20 minutes. In this case, the results of the measurement taken after 10 minutes and of that taken after the following step of other 10 minutes (20 minutes in total) must both be included in the Test Report.

7.2 Pulp dilution

This phase entails dilution of the pulp samples.

Transfer the pulp sample to a standardized homogenizer and dilute with mains water at ambient temperature until it reaches a volume of 5 litres, corresponding to a pulp consistency of 1%.

7.3 Measurement of the coarse reject

This phase entails determining the coarse reject starting from the diluted pulp.

Proceed with the coarse screening using the fractionator equipped with a plate with 5 mm diameter holes (see paragraph 5.4)

The required characteristics of the plate with 5 mm diameter holes are set out in annex B.

Perform the coarse screening for 5 minutes with a flow of mains water at 8,6 litres/minute.

Recover in a specific container the accept of the coarse screening and dilute the volume to 50 litres to be used for the subsequent measurement of the flakes and adhesive particles (macrostickies) and to determine their consistency as per ISO 4119.

On completion of the test, recover all the rejects present on the plate in a specific container and wash the plate with a sufficient amount of mains water to ensure it is completely clean, making sure that any fragments trapped in the holes are also recovered.

Filter the rejects using a rapid paper filter previously calibrated in the oven at 105 ± 2) °C, using a Büchner filter.

Recover the filter with the reject and dry all in the oven at (105 ± 2) °C until constant weight is obtained.

Calculate the dry weight of the coarse reject, net of the weight of the paper filter, and express the result as a percentage of the coarse reject with respect to the dry weight of the starting sample, rounding the result to the first decimal place.

7.4 Calculation of the content of soluble and colloidal solids below 10 microns

Measure two replicate of the consistency as per ISO 4119 with a filter having a porosity of $10 \pm 2 \,\mu\text{m}$ using 1000 ml of the accept from the coarse screening phase (chapter 7.3) and calculate the average.

Calculate the dry weight of the overall solid accept based on the average consistency and as a proportion between 1000 ml and the overall volume of the accept.

Calculate the dissolved and colloidal solids (<10 μ m) as a difference of the weight of the dry sample minus the weight of the solid accept minus the coarse rejects and expressed the result as percentage of the dry content of the sample.

Given:

Csa = average consistency of the coarse screening accept

Vs = volume used for the measure of the consistency (1000 ml)

Vsa = overall volume of the coarse screening accept

Ws = dry weight of the sample as obtained in the procedure described in chapter 6

Wcr = dry weight of the coarse rejects as obtained in the procedure described in chapter 7.3

Wsa = dry weight of the solid accept

Wds = dry weight of dissolved substances

Wsa = Csa *(Vs/Vsa)* Ws (values expressed as g, dry content)

Wds = Ws - Wsa – Wcr (values expressed as g, dry content)

7.5 First adhesiveness test and evaluation of optical inhomogeneity

This phase entails checking the adhesiveness and visual appearance of the sheets produced starting from the accepted fraction obtained in the test.

Having homogenized the accepted fraction after coarse screening and having determined the fibre consistency, take an amount sufficient to prepare two 60 g/m2 sheets (corresponding to 1.8 g in dry weight for each sheet).

Dry the sheet in the Rapid-Köthen sheet former (paragraph 5.5) and transfer it, without removing the support and cover, to the oven at a temperature of (130 ± 2) °C.

Place the sheet between two metal plates at the same temperature, applying a pressure of 1.18 kPa (3.7 kg) on the entire surface of the sheet for 2 minutes. Then remove the sheet with the support and cover from the oven and leave it to cool for 10 minutes in a desiccator.

Separate the sheet from the support and the cover and assess any damage or breakages to the sheet, which are indicative of the presence of adhesives.

Express the result by assigning a rating based on the following scale:

- adhesives absent: the sheet can be separated completely from the support and cover without any damage or breakages. Traces of fibres on the support and/or on the cover are permitted. Fragments of paper on the support and/or on the cover are not permitted;

- adhesives present: the sheet does not conform to the definition of adhesives absent.

Visually assess the quantity and type of optical inhomogeneity present on both sides of the sheets.

If there is any optical inhomogeneity, assign a rating through comparison with the references provided in annex D and based on the following scale:

- level 1: weak or absent (on a white or light brown base);

- level 2: medium (on a white or light brown base);
- level 3: high (on a white or light brown base).

Sheets with strong or complete homogeneity but which are intensely coloured in a uniform manner are to be rated at level 2.

7.6 Measurement of the flakes

This phase entails determining the content of the flakes present in the pulp accepted after coarse screening.

Perform a screening test using a plate with 0.15 mm wide slots and 20 g dry weight of pulp, screening for 20 minutes with a flow of mains water at 8,6 litres/minute using the fractionator referred to in paragraph 5.4.

On completion of the test, recover all the flakes present on the plate in a specific container and wash the plate with a sufficient amount of mains water to ensure that any fragments trapped in the holes are also recovered.

Filter the flakes using a rapid paper filter previously calibrated in the oven at 105 ± 2) °C, using a Büchner filter.

Recover the filter with the flakes and dry all in the oven at (105 ± 2) °C until a constant weight is obtained.

Measure the dry weight of the flakes, net of the weight of the paper filter, and calculate the percentage with respect to the dry weight of the accepted pulp aliquot used for the test.

Recover the first 40 litres of the accept of the flakes measurements for the subsequent measurement of the second adhesive test and evaluation of optical inhomogeneity.

To reduce the volume of the 40 litres, a thickening may be performed by using a plate with a mesh of 200 using the thickener referred to in paragraph 5.7. Unclog the mesh manually during the thickening step, if needed, in order to prevent overflow.

The required characteristics of the thickener are set out in annex C.

On completion of the test, recover all the fibres present on the wire in a specific container and wash the wire with a sufficient amount of mains water to ensure that any fragments trapped in the mesh are also recovered.

Recover the pulp from the thickener in a specific container diluting it in 10 litre of water be used for the subsequent measurement of the second adhesive test and evaluation of optical inhomogeneity.

7.7 Measurement of the adhesive particles (macrostickies)

This phase entails evaluating the quantity of adhesive particles (so-called macrostickies) present in the accepted fraction following the coarse screening phase. This phase is not required if the technical data sheet states that there are no adhesive substances in the paper and board material or product.

Perform the test in accordance with ISO 15360-2 with the following specifications:

use a plate with 0.15 mm wide slots;

- use 5 g dry weight of pulp; if a high number of adhesive particles (macrostickies) is identified, in order to avoid any problems with the image analysis, the amount of pulp may be reduced to 2,5 g

- perform the screening for 10 minutes with a flow of water at 8,6 litres/minute using the fractionator as referred to in paragraph 5.4.

Produce test pieces for measurement of the adhesive particles (macrostickies) in compliance with ISO 15360-2.

Measure the test pieces obtained using the image analysis system, setting the dimensional limits of the particle classes at a minimum of 0.1 mm and a maximum of 2 mm in equivalent diameter.

Measure the area of the adhesive particles (macrostickies) less than 2 mm in equivalent diameter and express the image analysis results in mm² of the adhesive particle (macrostickies) area per kg of sample, as-is, rounding the result to the nearest ten.

Repeat the same operation with at least a second pulp sample.

If the material is not sufficient to perform the test, perform a new pulping, pulp dilution and coarse rejects screen steps (chapter 7.1, 7.2 and 7.3) in order to recover sufficient accept.

Calculate the average, the minimum and the maximum values of the area of the adhesive particles (macrostickies) measured in the different repetitions, rounding the result to the nearest ten.

7.8 Second adhesive test and evaluation of optical inhomogeneity

This phase entails checking the adhesiveness and visual appearance of the sheets produced starting from the accepted fraction of the flakes measurement.

Having homogenized the accepted fraction obtained from the test to determine the adhesive particle (macrostickies) content and having determined the fibre

consistency, take an amount sufficient to prepare two 60 g/m2 sheets (corresponding to 1.8 g in dry weight for each sheet).

Dry the sheet in the Rapid-Köthen sheet former (paragraph 5.5) and transfer it, without removing the support and cover, to the oven at a temperature of (130 ± 2) °C.

Place the sheet between two metal plates at the same temperature, applying a pressure of 1.18 kPa (3.7 kg) on the entire surface of the sheet for 2 minutes. Then remove the sheet with the support and cover from the oven and leave it to cool for 10 minutes in a desiccator.

Separate the sheet from the support and the cover and assess any damage or breakages to the sheet, which are indicative of the presence of adhesives.

Express the result by assigning a rating based on the following scale:

- adhesives absent: the sheet can be separated completely from the support and cover without any damage or breakages. Traces of fibres on the support and/or on the cover are permitted. Fragments of paper on the support and/or on the cover are not permitted;

- adhesives present: the sheet does not conform to the definition of adhesives absent.

Visually assess the quantity and type of optical inhomogeneity present on both sides of the sheets.

If there is any optical inhomogeneity, assign a rating through comparison with the references provided in annex C and based on the following scale:

- level 1: weak or absent (on a white or light brown base);
- level 2: medium (on a white or light brown base);
- level 3: high (on a white or light brown base).

The sheets with weak or absent optical inhomogeneity but which are intensely coloured in a uniform manner are to be rated at level 2.

8. TEST REPORT

The test report must include at least the following information:

- a) reference to this standard;
- b) a description of the cellulose-based material or product specifying the following:

- Reference of the tested sample (product name or number), reference to the technical data sheet, production date of sample
- A summary of the main information included on the sample data sheet (grammage, materials and shares in case of multilayer materials, adhesives, sealing, printing, metallisation, accessory components or other specific features useful to identify the sample);
- Specific sample preparation, if any (e.g. emptying, removal of manually separable accessories intended to be removed before disposal)
- Finished product or intermediate (component/ constituent)
 - i. Semi-finished **sheets** of packaging material / substrate (paper, cardboard, solid board, corrugated board)
 - ii. Semi-finished **sheets** of packaging material / substrate with "upgrading" (polymer/metal coating, print, varnish)
 - iii. Finished product - intermediate, not yet ready to be used
 - iv. Finished product – ready to be used
 - v. Finished product used
- c) the type of software used for image analysis;
- d) any photographic documentation of the material or product if it is not possible to give a precise description as indicated in point b);
- e) the results of the test expressed in compliance with the criteria established respectively in paragraphs:
 - 7.3 (coarse reject, expressed as a percentage),
 - 7.4 (dissolved and colloidal solids (<10 μm), expressed as a percentage)
 - 7.5 (first adhesiveness, expressed as "absent", "partly present" or "present" and optical inhomogeneity, expressed with a level rating),
 - 7.6 (fibre flakes, expressed as a percentage, description of fibres/non-fibres and fragmentation),
 - 7.7 (if performed, area of the adhesive particles with a diameter less than 2000µm, expressed in mm²/kg, if not performed, an indication that it is not performed) and
 - 7.8 (second adhesiveness, expressed as "absent", "partly present" or "present" and optical inhomogeneity, expressed with a level rating).
 - Indication whether flake is composed of fibre only or whether other non-paper components are present
- f) date and place of the test;
- g) any deviation from the specified test procedure
- h) In the event that it is not possible to perform all steps of the test method in accordance with this standard or it is not possible to determine one or more measurement parameters due to the nature and/or characteristics of the sample material or product, the circumstance must be reported by the laboratory in the test report.

Examples:

- a) Pulping resistance prevents the pulper from working or there is a risk of damage to the equipment;
- b) the presence of dense flakes or foams prevents the transfer of the accept to the next stage;
- (c) the presence of metal particles or wet resistant resins distorts the assessment of macrostickies.

The test report may also include the following information:

- i) an indication of the adhesive particles (macrostickies) content expressed as a total area (including those greater than 2 mm equivalent diameter), expressed as mm² of the macrostickies' area per kg of the sample as-is, in compliance with the ISO 15360-2 standard;
- j) an indication of the ash content of the paper product or material determined in compliance with the ISO 1762 standard;
- k) the results of the test expressed in compliance with the criteria established respectively in paragraphs 7.5 and 7.8 (adhesiveness, expressed as "absent", "partly present" or "present" and optical inhomogeneity, expressed with a level rating of an additional adhesiveness and optical inhomogeneity) performed on the accept of coarse screen phase.
- I) any specific comments, such as:
 - specific observations, e.g. changes in consistency after pulping, long drainage time during sheet formation, foam formation
- m) further photographic documentation regarding the results, see in point f)

ANNEXES:

A) Flowchart



HARMONISED EUROPEAN LABORATORY TEST METHOD TO PRODUCE PARAMETERS ENABLING THE ASSESSMENT OF THE RECYCLABILITY OF PAPER AND BOARD PRODUCTS IN STANDARD PAPER AND BOARD RECYCLING MILLS

VERSION 1 December 2020



B) Description of the plate for evaluation of the coarse reject

The plate for the evaluation of the course reject must have the following characteristics:

- holes with a diameter of 5 mm;
- the overall area containing the holes must be 300 mm x 250 mm

- the holes are arranged in 6 columns, with each column occupying an area of 45 mm x 250 mm and with 6 mm of space between each column;

- each column must comprise 33 lines of holes;

- each line must contain 4 holes of a 5 mm diameter and the space between the lines must be 7.5 mm (the centre distance of the holes);

- the space between the holes along each line must be 10 mm (centre distance of the holes).

-An example of such a plate is shown in Figure B.1.

Figure B.1. plate for evaluation of the coarse reject



002					00000000000000000000000000000000000000	0 0 0 0 0 0
	45	45	45	45	6 <u>45</u>	45



Source: Aticelca

C) Description of the Thickener

Tank equipped with a 200 mesh wire on its bottom allowing the pulp to be thickened by natural gravity. The diameter of the thickener should be of enough dimension (approximately 50-75 cm) to avoid plugging the mesh during utilisation. It is possible to unclog the mesh manually during the thickening step in order to prevent overflow.

An example of such an equipment is shown in Figure C.1.





Source: Centre Technique du Papier



Figure 2.C.

Source: Centre Technique du Papier

D) References for the evaluation of optical inhomogeneities

Optical inhomogeneity: level 1 on a white base:



Optical inhomogeneity: level 2 on a white base:



Optical inhomogeneity: level 3 on a white base:



Optical inhomogeneity: level 1 on a light brown base:



Optical inhomogeneity: level 2 on a light brown base:



Optical inhomogeneity: level 3 on a light brown base:



Optical inhomogeneity: level 2 on a coloured base:



Source: Aticelca

MINIMUM REQUIREMENT FOR TECHNICAL DATA SHEET TO BE PROVIDED TO THE LABORATORY

	SECTION A - GENERAL DATA			UNIT			
A1	1 Company name						
A2	Product name			text			
A3	Description of the material/product and its function			text			
A4	Is it a base paper material or is it a finished product?						
	SECTION B - PRODUCT DETAILS	Fill section B only if it is a product					
B1	Dimensions of the product	Width and tolerance		mm			
B2	Dimensions of the product	Lenght and tolerance		mm			
B3	Dimensions of the product	Height and tolerance		mm			
B4	Weight of the product (emptied if it is a packaging) and tolerance			g			
B5	it a used product (e.g. is it a packaging already filled and then emptied)?						
		Fill section C if it is a material or if it is a product. Duplicate this section if					
	SECTION C - PAPER BASED MATERIAL DATA	the product is composed of more than one paper based material					
C1	Composition and characteristics of the paper based material	Paper and board	Grammage and tolerance	g/m2			
C2	Composition and characteristics of the paper based material	Paper and board	Thickness and tolerance	μm			
C3	Composition and characteristics of the paper based material	Paper and board	Presence of a coating	yes/no			
C4	Composition and characteristics of the paper based material	Paper and board	Presence of fillers	yes/no			
C5	Composition and characteristics of the paper based material	Paper and board	Presence of wet strenght polymers	yes/no			
C6	Composition and characteristics of the paper based material	Paper and board	Presence of artificial fibres	yes/no			
C7	Composition and characteristics of the paper based material	Paper and board	Is it printed, varnished, lacquered, etc.?	yes/no			
C8	Composition and characteristics of the paper based material	Non-paper layer, if any (e.g. plastic, aluminium, etc.)	Description of the material (e.g. PE, PLA, etc.)	text			
C9	Composition and characteristics of the paper based material	Non-paper layer, if any (e.g. plastic, aluminium, etc.)	Grammage and tolerance	g/m2			
C10	Composition and characteristics of the paper based material	Non-paper layer, if any (e.g. plastic, aluminium, etc.)	Thickness and tolerance	μm			
C11	Composition and characteristics of the paper based material	Other non-paper layer, if any (e.g. plastic, aluminium, etc.)	Description of the material	text			
C12	Composition and characteristics of the paper based material	Other non-paper layer, if any (e.g. plastic, aluminium, etc.)	Grammage and tolerance	g/m2			
C13	Composition and characteristics of the paper based material	Other non-paper layer, if any (e.g. plastic, aluminium, etc.)	Thickness and tolerance	μm			
C14	Composition and characteristics of the paper based material	Overall paper based material, including other material layers	Grammage	g/m2			
C15	Composition and characteristics of the paper based material	Overall paper based material, including other material layers	Thickness	μm			
	1						
		Fill section D only if it is a material or a product. Duplicate this section if					
	SECTION D - GLUE	the product includes more than one glue					
D1	Presence of glue, if any	y Describe the type of glue		text			
D2	Presence of glue, if any	Describe the use of the glue		text			
D3	Presence of glue, if any	Weight and tolerance of the glue		g			
		Fill section E only if it is a product. Duplicate this section if the product					
	SECTION E - NON-PAPER BASED COMPONENTS	includes more than one non-paper based material					
E1	Other non-paper components (e.g. staples, labels, handles, etc.)	Describe the component		text			
E2	Other non-paper components (e.g. staples, labels, handles, etc.)	Weight and tolerance of the component		g			
E3	Is the non-paper component easily removable from the product?						
	SECTION F - OTHER REMARKS						
F1	Other remarks			text			
	SECTION G - DATE OF PRODUCTION						
G1	Date of production of the sample provided to the laboratory			dd/mm/yyyy			