Cepi ContainerBoard (CCB)

European Federation of Corrugated Board Manufacturers (FEFCO)

GUIDELINES

Reel Identification and Finishing

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1 Introduction

The first draft of this document **Reel Identification and Finishing** was published as part of the Corrugator Efficiency Working Group established in early 2000. This second issue of the document is a revision to take into account the changes in the Corrugating industry over the last 17 years.

This document is the result of collaboration between Paper, Board and Core manufactures.

The document takes into account the ever increasing requirement to reduce waste in time and paper by revising the manner reels are identified, built, finished and labelled.

Notable changes to the document are requirements and recommendations regarding:

- Requests for moisture details on reel labels
- The marking of paper joins on reel ends
- A requirement that reel cores should be capable of repeat mounting without damage
- A requirement that cores are one piece only
- New dimensions for standard core sizes to reflect current industry requirements
- New core alignment requirements
- Guidelines for the positioning of paper maker joins and reel tension
- Transit damage limitations and rectification procedure

In conjunction with this document, it is the intention of FEFCO and CCB to work jointly on a code of practice document detailing best practice for the handling and mounting of reels on to corrugators.

2 Labelling of reels

2.1 Reel identification

Identification of the reel is the main function of the label.

Each mill has a unique number for each reel to allow retrieval of all the product data at any time. For clear identification of the reels it is vital to have and utilize a uniform bar code system, which provides consistency between the coding and the information.

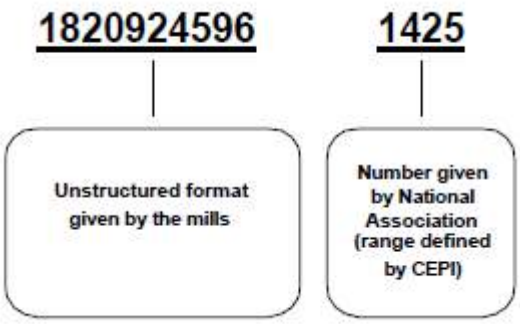
The reel number should always be available as barcode and text format.

Unit Identifier Bar code

There current version of the Unit Identifier bar code normally used within Europe is a 14 digit length numeric code. This type of code can be scanned and recognized by modern bar code readers. Its implementation is recommended in order to allow standardization within the industry. The utilization of the 14 digits version assists all users who are wishing to read bar codes at long distances using automatic reading equipment.

Structure of the 14 digit numeric Bar code

- .10 digit reel number assigned by the mill.
- 4 digit mill number assigned by the National Associations (Some countries with limited resources rely on CEPI).



The symbology of the 14 digit bar code must be Code **128C** to European Standard EN 799.

The label must include the reel number in a text form and at least 1 unit identifier standard bar code printed horizontally or optional vertically.

To facilitate the handling of the reels, it is considered as useful if the bar code is available in peel-off mode.

For the control of the quality grade of a printed bar code it is recommended to refer to the Cen/Ansi test standard EN 1635.

2.2 Paper & Reel information

For an optimal management of the paper reels in the paper mill as well by the customer, the list of items presented below provides recommendations for the information to be printed on the label or directly on the reel.

Paper information

- Paper type
    - o Beside the paper mill trade name, it is recommended to place the international paper grade name, where available, as stated in the CCB “European list of corrugated base papers”
    - o Printed on reel label
    - o Printed directly on reel end

- Grammage
    - o Printed on reel label
    - o Printed directly on reel end

Reel information

- Width
    - o Printed on reel label
    - o Printed directly on reel end

- Reel diameter
    - o Optional: 1 printed on reel label

- Internal core diameter
    - o Optional: printed on reel label only when different than the standard agreed of 100 mm

- Outer core diameter
    - o Optional: 1 printed on reel label

- Topside indication
    - o Optional: 1 printed on reel label

- Unwind direction
    - o 1 printed directly on reel end
    - o Optional: 1 printed on reel label

- Reel weight
    - o Printed on reel label

- Reel length (measured or calculated over reel weight)
    - o Optional: 1 printed on reel label

- Reference to production period (preferably production date)
    - o Printed on reel label

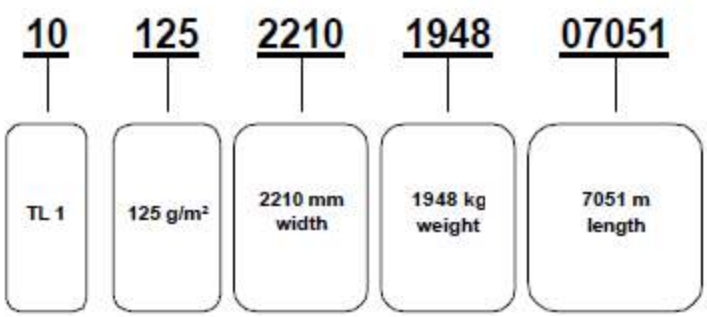
- Moisture content
    - o Only on specific agreement between producer and user
    - o When agreed, this value should identify the average moisture content of the reel
    - o Optional: 1 printed on reel label

2.3 Combined Paper & Reel information

The Unit Identifier is not designed for describing products. There is a specific requirement for extra product information and this is met by an additional 18 digit bar code as specified in the CCB standard.

Structure of the 18 digit numeric bar code

- Digit 1-2: paper type (CCB code)
- Digit 3-5: grammage
- Digit 6-9: reel width
- Digit 10-13: reel weight
- Digit 14-18: reel length



In this particular example:

A reel of Testliner 1, 125 g/m², 2210 mm width, 1948 kg weight and 7051 m of paper length.

The symbology of the 18 digit bar code must be Code **128C** to European Standard EN 799.

It is recommended that the label includes the paper & reel information in text form and at least 1 CCB standard bar code printed horizontally or, optional, vertically.

To facilitate the handling of the reels it may be useful if the bar code is available in peel-off mode.

For the control of the quality grade of a printed bar code it is recommended to refer to the Cen/Ansi test standard EN 1635.

2.4 Customer specific information

In principle, each label should contain the basic information to identify a reel and provide the user with all the necessary information to handle the paper reels.

Addition of specific information should be limited to precise requirements from users/customers or general information that can provide an added value during transport (e.g. port of destination for export orders).

If there are more codes used than the recommended bar codes, they should not prevent proper reading at the customer.

2.5 Summary of label information

It is recommended that each reel should be delivered with at least 1 reel label containing the following information:

- Grade name
- Substance [g/m²]

- Reel width [mm]
- Reel weight [kg]
- Paper length [m]
- Production date [dd-mm-yyyy] or [yyyy-mm-dd]
- Unwinding direction
- Reel ID (reel number), including 4 digit CEPI mill code
- Bar codes for reel ID and paper data (corresponding to CCB requirements)
- Bar code standard type 128C according European Standard EN 799
- Customer name and specific information on reel label, if possible

The following additional information could also be added, as this would assist the operator when handling and processing the reels:

- Internal core diameter (only when different from the normal 100 mm)
- Outer core diameter
- Reel diameter
- Topside indication
- Moisture content, if requested
- Extra CEPI unit identifier bar codes (128C)
- Extra CCB standard bar codes (128C)

To facilitate the handling of the reels it may be useful if the extra bar codes in peel-off mode are available.

2.6 Positioning of the label and other reel marking

Positioning of the label

It is recommended that each reel should be delivered with at least 1 reel label containing as a minimum all the information as stated in the § 2.5 “Summary of label information“.

The label should be positioned on the reel belly.

Preferably the label should be positioned on the top part of the reel, so that it is readable when the reel is standing.

Other reel marking

For enhanced identification of the reels it is recommended to print some information directly on reel end. This will be beneficial for reels not completely utilized, stored in the warehouse waiting for the next utilization.

This extra marking on reel end should be limited to following information:

- Reel number
- Paper type
- Grammage
- Width
- Unwind direction
- Joint position, as a minimum on one reel end

2.7 Recommended font and size

Paper label

The following directions are provided in relation to a label size of 297 x 420 mm (A3 format). The recommended font and size aim to provide good readability and clearness of the label.

The font recommended is Arial Narrow.

- Reel number = Arial Narrow 124
- Paper type = Arial Narrow 124
- Grammage = Arial Narrow 124
- Width = Arial Narrow 124
- Reel weight = Arial Narrow 100
- Reel length = Arial Narrow 100
- Production period = Arial Narrow 40
- 1 CEPI unit identifier bar code (128C) printed
    - o vertically approx. 100 x 20/25 mm (including numbers)
    - o horizontally approx. 100 x 20/25 mm (including numbers)
- 1 CCB standard bar code (128C) printed
    - o vertically approx. 125 x 20/25 mm (including numbers)
    - o horizontally approx. 125 x 20/25 mm (including numbers)

For the additional information:

- Internal core diameter = Arial Narrow 20
- Outer core diameter = Arial Narrow 20
- Reel diameter = Arial Narrow 20
- Moisture content = Arial Narrow 56
- Extra Cepi unit identifier bar codes (128C)
    - o vertically approx. 50 x 10/15 mm (including numbers)
    - o horizontally approx. 50 x 10/15 mm (including numbers)
- Extra CCB standard bar codes (128C)
    - o vertically approx. 50 x 10/15 mm (including numbers)
    - o horizontally approx. 50 x 10/15 mm (including numbers)

Deviations from the above recommendations are allowed as far as the readability and the clearness of the label is not compromised. In case the label has a size different than A3 standard, the proportion of the fonts should be respected as well.

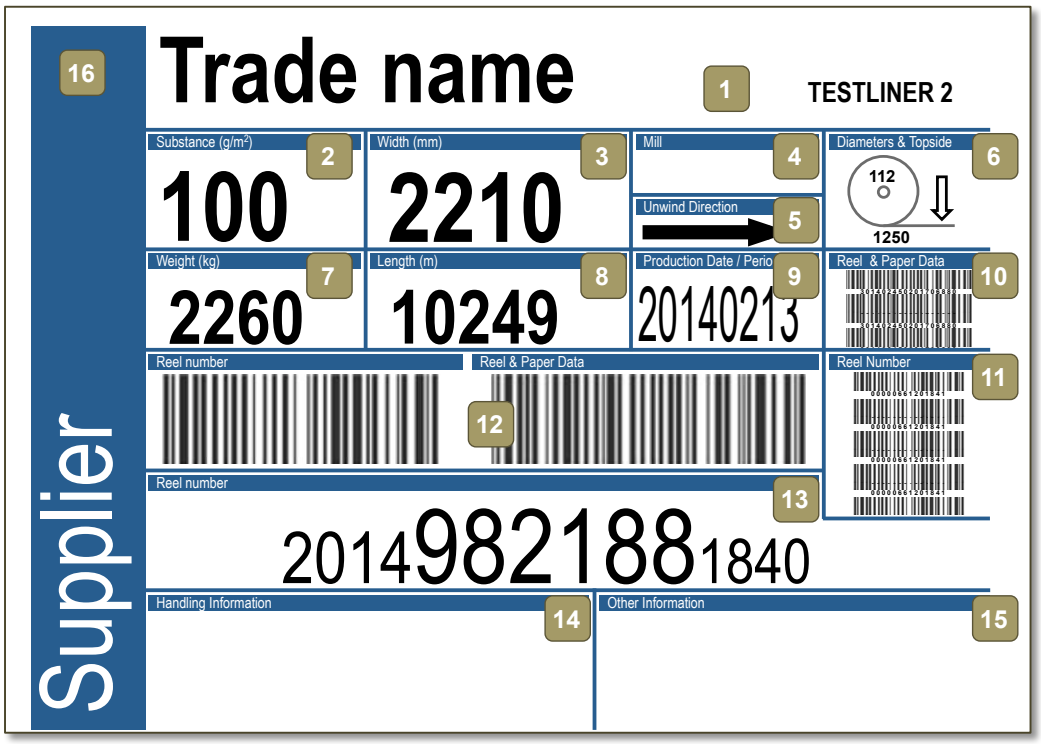
Direct printing on reel end (optional)

The direct printing on reel end can be replaced by a label placed on the reel end itself. The direct printing solution is preferred in order to avoid glue from the label sticking between paper layers of the reel.
This extra label should contain the same information as the direct printing on reel end:

- Reel number
- Paper type
- Grammage
- Width
- Unwind direction
- Joint position, as a minimum on one reel end.

2.8 Label layout example

Providing the clear readability and the completeness of the content of the label remain the responsibility of the producer. In case where the label needs to be renewed and, in general, to provide some help for the future development, here an ideal layout is proposed:



1. Trade name & international paper grade name
2. Basis weight (nominal)
3. Reel width
4. Mill name
5. Unwind direction
6. Outer core diameter
   + reel diameter
   + topside indicator
7. Reel weight
8. Paper web length
9. Production date
10. Barcode 18 digits (eventually Peel-off)
11. Barcode 14 digits (eventually Peel-off)
12. Big version of the horizontal barcodes (eventually to be printed also vertically)
13. Reel number
14. Special handling information
15. Other information
16. Name of the supplier; could be placed either horizontally on the top part or vertically on the left side

3 Core requirements

3.1 Quality and strength

The cores used in the reels should be of adequate quality. There are number of factors, which can result in crushed cores and reaming out, such as reel winding tension, excessive clamp truck pressures or the influence of corrugator (reel stand or chucks).
A common work is currently ongoing between FEFCO, CCB and core producers in order to better understand the phenomenon and to try to prevent it with common agreed characteristics.

The core should be one piece. Split cores are not accepted.

3.2 Dimensions and positioning

Cores should have an inner diameter of 100 millimetres with a tolerance +3/-0 mm.

The outer diameter should be 120 mm with a tolerance of +0/-8 mm, unless otherwise agreed between the supplier and customer.
It is recommended to have the outer diameter of the core printed on the reel label to allow proper setting of the splicing operation.

For core alignment, there can be a tolerance of +2/-3 mm on each side. However, the intention remains to work for the reduction of misalignment (for instance to reach a tolerance of +0/-1 mm).

4 Reel finishing, storage, traceability

4.1 Reel width and diameter

The reel width tolerance is +/-3 mm. The typical reel diameter is max 1450mm, unless something else has been agreed between the supplier and the customer.

4.2 Joins and winding

No joins should be closer than 100 mm from the core or the beginning of the reel. Ideally splice position to be included on reel label. Joint position marked, as a minimum on one reel end. The number of joins should be max 2.

Paper should be attached to core by tape or glue, preferably not tacked. The first meters at the core are also considered as packaging to a max diameter of 120mm.

Winding should be tight and, even, Schmidt hardness should not vary by more than 10 across the reel width.

As for the reel body and reel end, the outer layers should be fixed with glue and/or tape, plain flat reel end surface and no telescoping.

4.3 Damage definition and tolerances

The top 5 laps shall be considered to be transit packaging.

Reels should be delivered clean, free from dirt and contamination (with respect to food packaging applications) and with no edge or belly damage. Any damage or dirt/ contamination on reels must be recorded at the time of delivery.

A transit damage is defined as such: reel belly, less than A4 size on top laps of transit packaging, taped at point of dispatch. When the damage is greater than A4 or deeper than transit packaging, the reel should be reworked prior to transit and re-labelled with new weight.

4.4 Storage and best before

Reels should be stored in a clean and dry storage, with a stable atmosphere and minimum humidity variation. Variation in relative humidity can cause creases, warp at splice or cracking at conversion.

Paper in storage after delivery, longer than 1 year should be considered outside manufacturers specification warranty.

4.5 Traceability

To improve the traceability of the product origin, it is highly recommended to keep the reel label until the end of the utilization-life of each single reel.