



FEFCO

GROUPEMENT ONDULÉ

**EUROPEAN CONTAINERBOARD
ORGANISATION**

GUIDELINES

Reel Identification and Finishing

- June 2003 -

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1 Introduction

The Corrugator Efficiency Working Group was formed early 2000 as a consequence of the Group discussions at the Technical Seminar in Nice a year before.

The idea was that raw materials, especially paper, have a big impact on our overall corrugator performance. It was agreed to initiate a process of continuous discussions in a small expert group of paper manufacturers and box makers to aim at following objectives:

1. run the project in co-operation with the suppliers
2. improve corrugator efficiency
3. reduce waste at the corrugator
4. issue guidelines that could be the starting point for a Fefco Boxmaker's standard.

The first guideline is **Reel Identification and Finishing**. The document includes guidelines for reel labelling to support the easy identification of paper reels and to allow more efficient warehousing of paper stocks. Recommendations on cores are also included.

This is the first of several recommendations which provide an easy understanding and a better cooperation between boxmakers and their suppliers.

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 utilise a uniform bar code system, which provides consistency between the coding and the information.

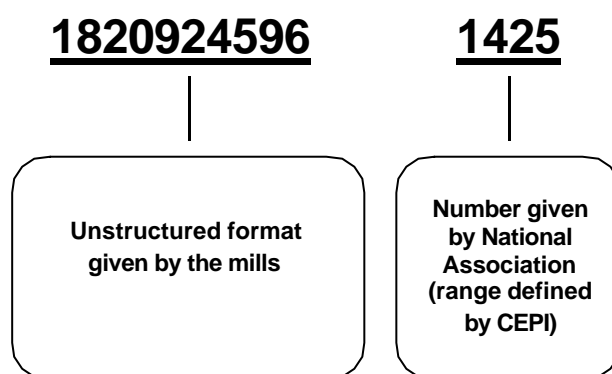
The reel number should always be available as barcode and text format.

Unit Identifier Bar code

There are 2 version of the Unit Identifier bar code normally used within Europe, 16 digit and 14 digit. Both versions can be scanned and recognised by modern bar code readers. The 14 digit version is recommended in order to standardise within the industry. The utilisation 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 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 14 digit reel number is preferred over the 16 digit reel number because it takes less space and it is easier to read.

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 text form and at least 1 unit identifier standard bar code printed horizontally and optional vertically.

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

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

Paper information

- Paper type
 - Beside the paper mill trade name it is recommended to place the international paper grade name where available as stated in the Groupment Ondulé “List of European grades of corrugated papers”
 - Printed on reel label
 - Printed directly on reel end
- Grammage
 - Printed on reel label
 - Printed directly on reel end

Reel information

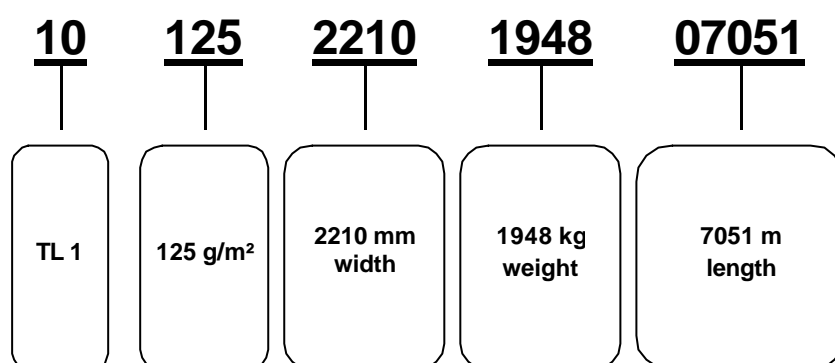
- Width
 - Printed on reel label
 - Printed directly on reel end
- Reel diameter
 - (Optional: 1 printed on reel label)
- Internal core diameter
 - (Optional: 1 printed on reel label)
 - Only when different than the standard agreed of 10 cm
- External core diameter
 - (Optional: 1 printed on reel label)
- Topside indication
 - (Optional: 1 printed on reel label)
- Unwind direction
 - 1 printed directly on reel end
 - (Optional: 1 printed on reel label)
- Reel weight
 - Printed on reel label
- Reel length (measured or calculated over reel weight)
 - (Optional: 1 printed on reel label)
- Reference to production period (preferably production date)
 - Printed on reel label
- Moisture content
 - Only on specific agreement between producer and user
 - When agreed, this value should identify the average moisture content of the reel
 - (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 Groupement Ondulé standard.

Structure of the 18 digit bar code

- Digit 1-2: paper type (Groupement Ondulé 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 Groupement Ondulé standard bar code printed horizontally and optional vertically.

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

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 or general information that can provide an added value during transport (e.g. port of destination for export orders).

If there are more 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 1 reel label containing the following information:

- Reel number
- Paper type
- Grammage
- Width
- Unwind direction
- Reel weight
- Reference to production period (preferably production date)
- 1 CEPI unit identifier bar code (128C) printed horizontally and optional vertically
- 1 Groupement Ondulé standard bar code (128C) printed horizontally and optional vertically

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 10 cm)
- External core diameter
- Reel diameter
- Reel length
- Topside indication
- Moisture content
- Extra CEPI unit identifier bar codes (128C)
- Extra Groupement Ondulé 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 on the reel and other reel marking

It is recommended that each reel should be delivered with 1 reel label containing at minimum with all the information as stated in the paragraph "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.

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

Recommended font and size

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.

Deviations from the following 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.

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
 - vertically approx. 100 x 20/25 mm (including numbers)
 - horizontally approx. 100 x 20/25 mm (including numbers)

- 1 Groupement Ondulé standard bar code (128C) printed
 - vertically aprox. 125 x 20/25 mm (including numbers)
 - horizontally aprox. 125 x 20/25 mm (including numbers)

For the additional information:

- Internal core diameter = Arial Narrow 20
- External core diameter = Arial Narrow 20
- Reel diameter = Arial Narrow 20
- Moisture content = Arial Narrow 56

- Extra CEPI unit identifier bar codes (128C)
 - vertically aprox. 50 x 10/15 mm (including numbers)
 - horizontally aprox. 50 x 10/15 mm (including numbers)

- Extra Groupement Ondulé standard bar codes (128C)
 - vertically aprox. 50 x 10/15 mm (including numbers)
 - horizontally aprox. 50 x 10/15 mm (including numbers)

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:

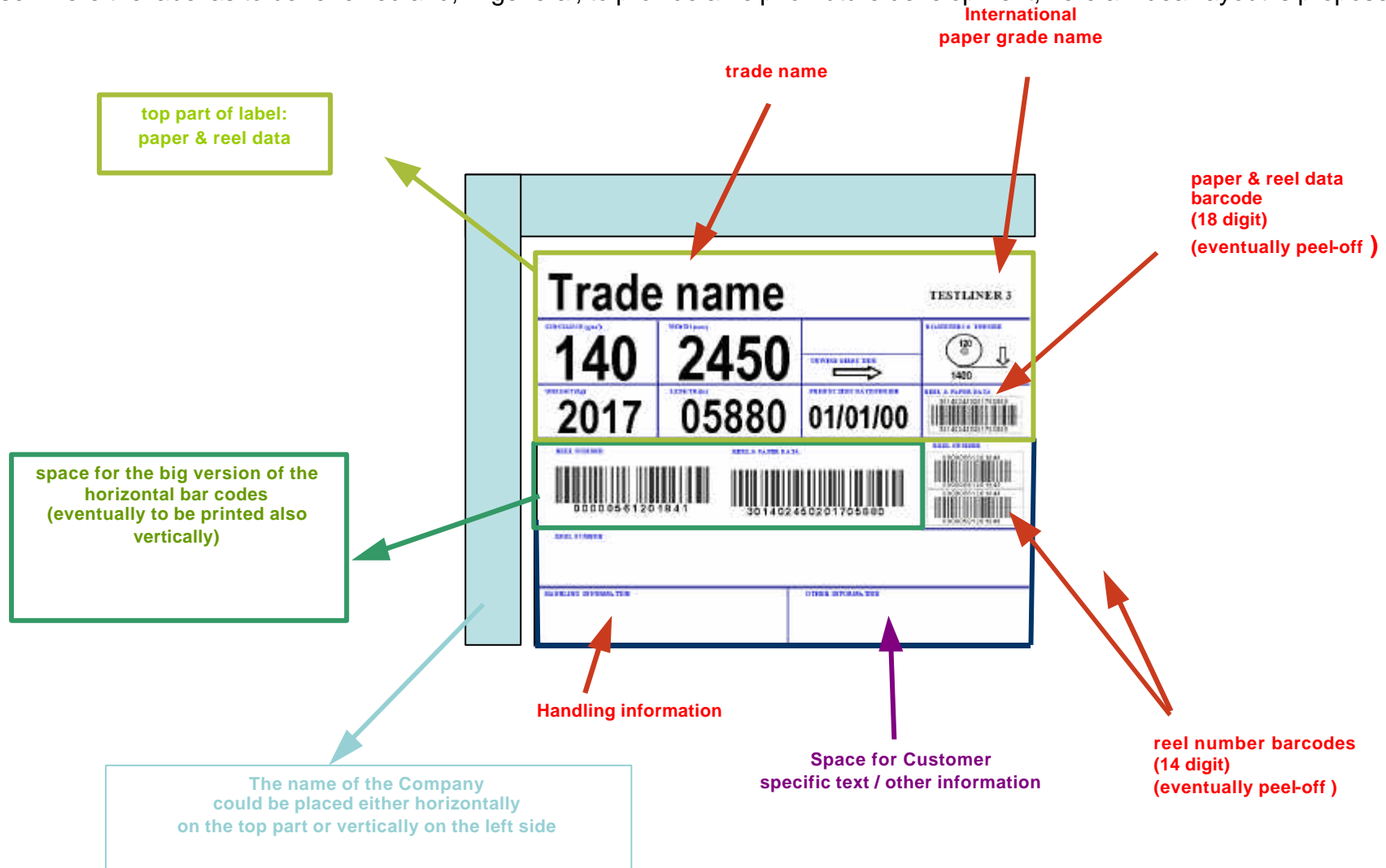
- Reel number
- Paper type
- Grammage
- Width
- Unwind direction

IMPORTANT NOTE

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

2.7 Label layout example

Provide the clear readability and the completeness of the content, the design of the label remain a right of the producer. In case where the label as to be renewed and, in general, to provide a help for future development, here an ideal layout is proposed:



3 Core requirements

3.1 Quality and strength

The cores used in the reels should be of adequate quality and allow the reel to be introduced to the reel stand several times, without “reaming out”.

There are a number of factors which can result in crushed cores, such as reel winding tension and excessive clamp truck pressures. Past experience has indicated that if the core has a minimum flat crush of 8 kN/m core length then the core itself can normally be eliminated from the investigation. Test method ISO 11093-9.

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

3.2 Dimensions and positioning

Cores should have an inside diameter between 99,5 (minimum) and 102,5 (maximum) millimetres for corrugator chucks with 100 mm diameter. It is recommended to have the outside diameter of the core printed on the reel label to allow proper setting of the splicing operation.

The core should not stick out more than 2 millimetres out of the reel end. The core should not be more than 10 millimetres short of the reel end.