



**UPDATES  
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19.1 Section 5

13.1 Section 3.1.2

26.6 Sections 3.1.3 and 5

16.5 3.1.2 EAN code

2.5 3.1.4 removed

25.4 1.4. Minimum size of the  
combined markings

16.4 3.1.2. Re-using  
bar codes

**FEEDBACK:**  
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# **MARKING PET BOTTLES**

During the registration of new recyclable PET deposit bottles, PALPA will inspect and accept the properties and markings of both the bottles and the packaging material. All properties must meet the recyclable plastic bottle system requirements.

## **1. SHAPE OF THE RECYCLABLE PLASTIC BOTTLES**

Reverse vending machines identify the bottles registered in the recyclable plastic bottle system by the bar codes printed on the label. The identification process becomes faster and more reliable with the shape recognition of the recyclable plastic bottles. These identification techniques require the bottles to meet certain requirements concerning their shape and rotating properties.

The bottles will be identified on the feeding line of the reverse vending machine where they are first stopped and then rotated a few times. Recyclable plastic bottles must be cylindrical on both sides of the center of gravity to make rotation even and identification reliable. Although round bottles and bottles with long necks might rotate well, they rock so much that they cannot be identified.

Other bottle shapes may be registered in the recyclable plastic bottles system, after individual consideration, if they function in all the different reverse vending machines on the market and meet the other requirements set on recyclable plastic bottles.

## **2. DIMENSIONS OF RECYCLABLE PLASTIC BOTTLES**

The mechanical handling and identification of bottles by the reverse vending machines set the following restrictions on the size of the recyclable plastic bottles:

	Min.	Max.
Outer diameter of the bottle	50 mm	120 mm
Total height of the bottle (incl. cap)	130 mm	380 mm



## 3. RECYCLABLE PLASTIC BOTTLE MARKINGS

### 3.1. COMPULSORY MARKINGS

#### 3.1.1 RECYCLE LOGO

The recyclable plastic bottle or the label must include a packaging material marking that is in accordance with the Finnish Government decision 817. The triangular arrow-marking of the PET raw material (as seen in this picture) must be at least 5 mm high.



Min.  
height 5 mm

#### 3.1.2 EAN CODE

Reverse vending machines identify recyclable plastic bottles by their bar code. An EAN-13 bar code, which will be described later, must be printed on the bottle label. In case the label or the printed area is very small, an EAN-8 code can be printed on the label. However, the EAN-8 must always be applied for separately from GS1 ([www.gs1.fi](http://www.gs1.fi)).

### USING THE EAN CODE OF RECYCLABLE BEVERAGE PACKAGES

- All recyclable plastic bottles registered in the system must be marked with an EAN code that is only used in Finland. The code can be applied for in the home country of the deposit payer, which means that it can begin with other digits than 64.
- The applicant must guarantee in the registration form that the bar code in question is not currently used or will not later on be used in any other country.
- PALPA recommends that a new EAN code should always be used with recyclable beverage packages.
- The EAN code that has previously been used on a recyclable plastic package must not be used again on other products.
- The EAN code that has been used on another product must not be re-used on a recyclable beverage package before at least five (5) years have passed since the previous use.
- If the material, colour or the shape of the recyclable plastic bottle changes, a new EAN code must be applied for the product. Furthermore, a change in the label or the cap material requires a new EAN code. If just the label printing changes, a new EAN code is not necessary but new model bottles must be sent to PALPA and reverse vending machine manufacturers for testing.

The majority of the recyclable beverage packages are returned in reverse vending machines that read the EAN code automatically. Because of this, the printing quality, measurements, colour contrast, and EAN code placement must be paid extra special attention. In addition to the requirements described later, the bar codes must also meet all the requirements set by GS1 (see [www.gs1.fi](http://www.gs1.fi)).

Throughout the lifespan of the product, the deposit payer is responsible for making sure that the reverse vending machines can identify the EAN code when the packages are released on the market.

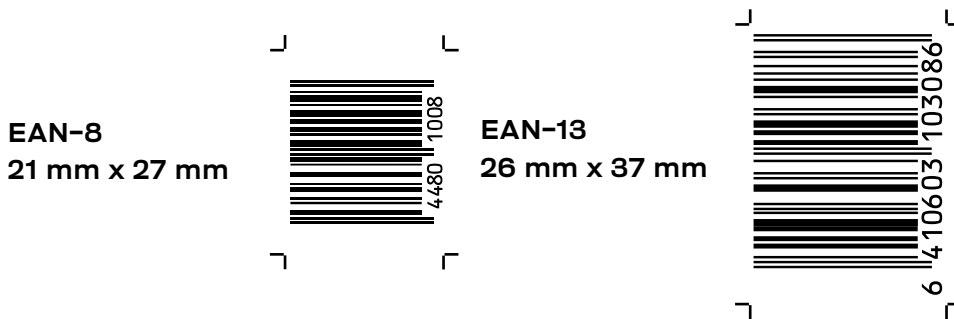
## BAR CODE QUALITY AND COLOUR

After printing, the bar code must meet at least the grade **B of the ANSI quality** requirements. It is important to define the printing quality in the label supply contract and check it upon delivery.

The lines of the bar code must be printed in black on a white background. In special cases, PALPA can separately accept other colour combinations defined by GS1.

In addition to the printing quality of the bar code, attention should also be paid to the properties of the printed surface (gloss, transparency, etc.) as well as how readable the bar code is after wear and tear (rubbing, dampness, etc.)

## BAR CODE SIZE



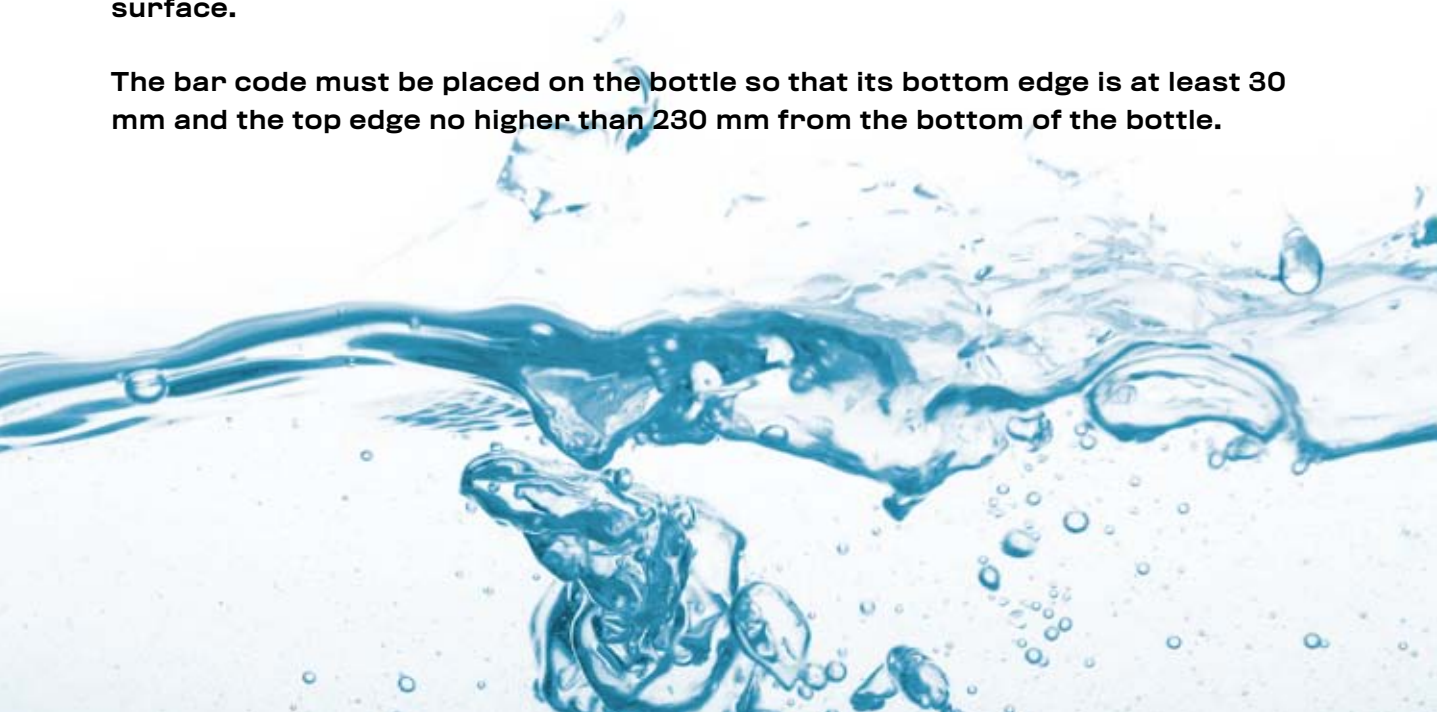
This is only an example. To see the real one, check [www.gs1.fi](http://www.gs1.fi)

The scale of magnification of the EAN-13 and EAN-8 bar codes must be at least 0.8. There must be appr. 3 mm wide white quiet zone at the beginning and the end of the bar code.

## BAR CODE ROTATION AND PLACEMENT

The bar code must always be placed in the vertical position (so called ladder position) so that the lines are horizontal when the bottle stands upright on a surface.

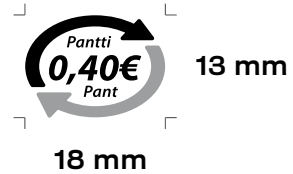
The bar code must be placed on the bottle so that its bottom edge is at least 30 mm and the top edge no higher than 230 mm from the bottom of the bottle.



### 3.1.3 DEPOSIT SYMBOL

A visual deposit symbol is used so that the consumer and the manual recycling points can see which bottles have a deposit.

The smallest acceptable size of the symbol is 18 x 13 mm (width x height). The symbol must be placed near the bar code. A good colour contrast is necessary, and the background can only consist of a single colour. Recommendable colour combinations are: black writing on a white background or white writing on a black background. Other combinations may be accepted at PALPA's discretion.



Mixed material marking must be used if the bottle contains materials that are not well suited for recycling or the cross section of the bottle is not round. More detailed instructions can be found in PALPA's current recyclable plastic bottle specifications. The minimum size of the mixed material marking is 22.0 x 24.5 mm (width x height).



## **3.2 RECOMMENDED MARKINGS**

### **3.2.1 MANUFACTURER AND MOULD NUMBER OF THE RECYCLABLE PLASTIC BOTTLE PREFORM**

The manufacturer ID of preform and the mould number of the recyclable plastic bottle are recommended to be marked on the bottleneck (between the screw-top thread and the neck ring). These markings make it substantially easier to spot the quality errors of various PET raw materials or the bottle preform. However, they are not required by the recyclable plastic bottle system.

### **3.2.2 MANUFACTURER AND MOULD NUMBER OF THE RECYCLABLE PLASTIC BOTTLE**

In addition to the PET raw material marking, the logo or name of the blower and the specific blow mould number are recommended to be marked on the bottle.

## **4. DEPOSIT VALUES**

The deposits defined in the beverage packaging regulation:

- |  |       |
|--|-------|
| • 0.35 l or less                       | €0.10 |
| • More than 0.35 l but less than 1.0 l | €0.20 |
| • 1.0 l or more                        | €0.40 |



## **5. ACCEPTING NEW PRODUCTS IN THE RECYCLING SYSTEM**

The deposit payer must register each product in the recycling system. The registration form must be filled out on PALPA's Extranet. The importers or manufacturers will receive the user rights there after registering their companies.

Authentic model bottles must be sent to PALPA and the reverse vending machine manufacturers for testing at least 1 month prior to the sales of the product. Two model bottles must be sent to PALPA and six model bottles to each manufacturer.

PALPA can pre-approve the bottle, cap, and the label. The final acceptance in the recycling system will be based on the registration form, authentic sample, and the tests performed by the reverse vending machine manufacturers. If the product cannot be accepted in the system, PALPA will inform the deposit payer in writing why the product could not be registered.

**Any changes in the package, labels or label printing must always be reported to PALPA.**

PALPA withholds the right to not register a product in the recyclable plastic bottle system if the product does not meet all the requirements.

After registration, PALPA will charge a code fee for updating the reverse vending machines according to a currently valid price list. The updating is done twice a month.





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