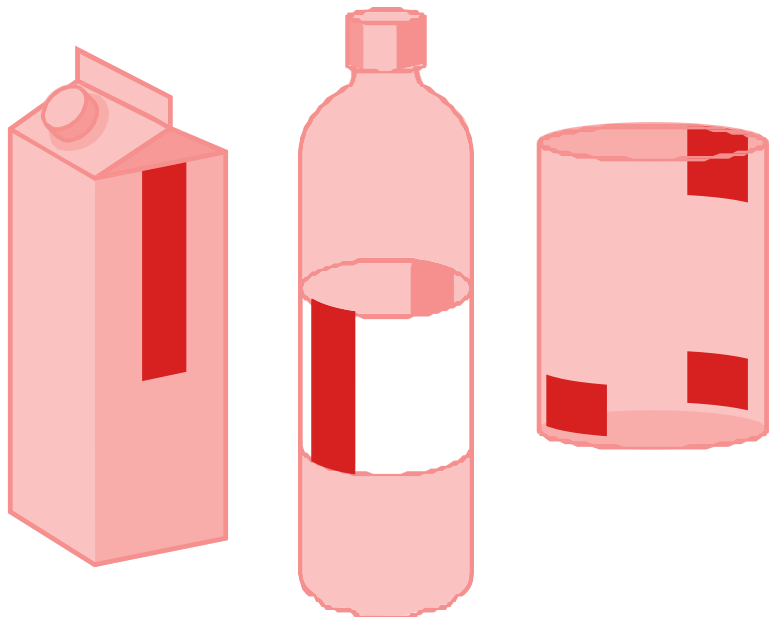


Packaging Guidelines

Primary Packaging

(Food / Near Food)



Background / problems

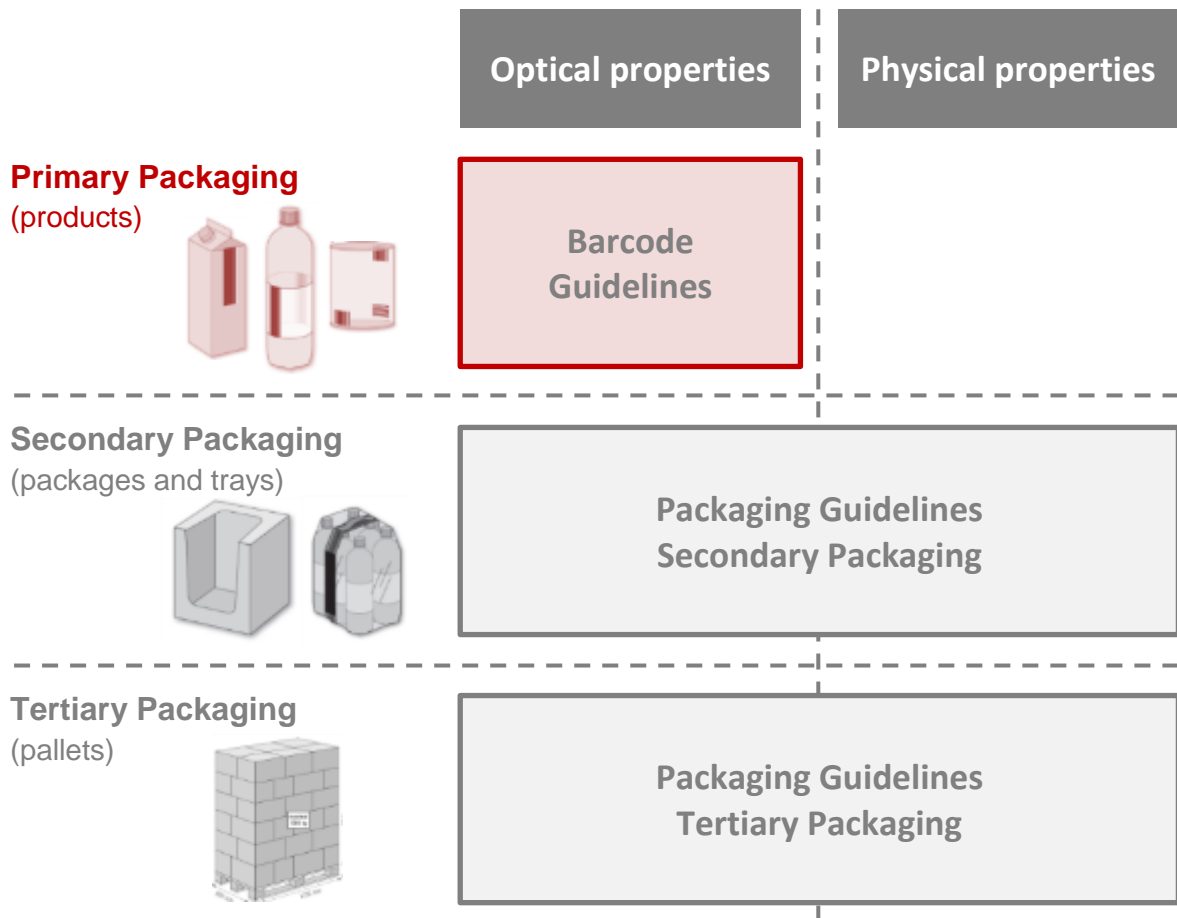
- The provision of a single GTIN in the form of a barcode (EAN code) is not enough on its own to guarantee that a product can be scanned. There is a great deal of potential for improving customer satisfaction and optimising costs
- Market observations prove the need for action relating to barcodes concerning, for example:
 - Products which are difficult to scan or cannot be scanned because the barcode is too small, is in the incorrect place or is truncated
 - Barcodes which have become creased during the vacuum packaging procedure (e.g. on packaging for fresh meat)
 - Reflective backgrounds which make it more difficult to scan products (e.g. on tubes and crisp packets)
 - Environmental conditions which impact the ability to scan the barcodes (e.g. frozen products)
- These cause dissatisfaction for both customers and employees (checkout) and overall costs are high due to delays at the checkout

Basic understanding of the guidelines

- These guidelines apply to food- / near food products
- It covers the general principles which need to be taken into consideration in order to achieve optimal scannability for the different types of packaging
- These guidelines form the basis of the respective style guides for own brands and the packaging specifications
- The style guides for own brands and the packaging specifications have incorporated the design and labelling requirements in these guidelines into the design layouts
- These design layouts offer specific guidance for applying barcodes when designing own brand products
- The existing requirements (e.g. QA) must still be followed and applied

Definitions and scope

- These guidelines govern all the optical properties of primary packaging which are relevant for scanning (the actual packaging of the product)
- The packaging guidelines for secondary and tertiary packaging govern all the optical and physical properties of secondary packaging (packages and trays) and tertiary packaging (pallets) which are relevant for the optimal flow of goods



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1 Basic requirements for barcodes

- **Number**
There should be a barcode on each side of the product in order to achieve the maximum scan rates. However, the following applies:
 - Barcodes can be omitted on the visible sides used to position the product
 - The specific guidelines are available in the respective style guides for own brand products and product specifications

The number of barcodes is more important than the size of the barcodes (see sections on “size / dimensions” and “design / content”)

- **Orientation**
In principle, there are three different arrangements for applying the barcodes to the product packaging


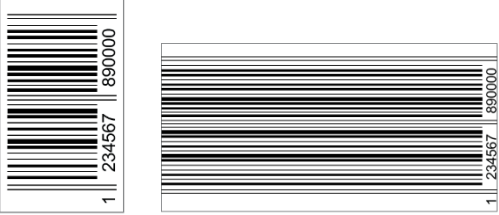
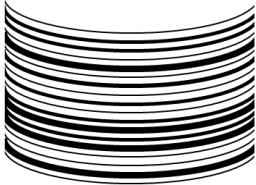
Arrangement	Examples / description
Picket fence	<ul style="list-style-type: none"> • The barcode is in a horizontal position with the individual bars running vertically next to each other • The width of the picket fence does not have to be greater than the height! <div style="display: flex; justify-content: space-around; align-items: center;">  </div>
Ladder	<ul style="list-style-type: none"> • The barcode is in a vertical position with the individual bars running horizontally next to each other • The height of the ladder does not have to be greater than the width! <div style="display: flex; justify-content: space-around; align-items: center;">  </div>
Ribbon type / continuous code	<ul style="list-style-type: none"> • The barcode is in a horizontal position and wraps around the whole product covering up to 360° <div style="text-align: center;">  </div>

Table 1: Barcode arrangement

- Size / dimensions
 - Format barcodes in SC2 if possible, as this is the ideal size for readability
 - If it is not possible to use the SC2 barcode size, a smaller barcode may be used in exceptional cases (SC1 or SC0)
 - The following table indicates the nominal sizes for each of the barcode formats (according to GS1):

Format	SC2	SC1	SC0
EAN-13			
Nominal size (incl. quiet zones)	37.29 x 26.26 mm	33.56 x 23.63 mm	30.5 x 21.48 mm
EAN-8			
Nominal size (incl. quiet zones)	26.73 x 21.64 mm	24.06 x 19.48 mm	21.87 x 17.70 mm

Table 2: Barcode formats ¹

- It may be possible to reduce the height (see design / content section) rather than reducing the overall size of a larger barcode (scaling)

¹ Source: GTIN/GLN Handbook – Globale Identifikationssysteme für Artikel und Lokationen (Global Identification Systems for Products and Locations), GS1 Germany

- The number of barcodes is more important than the size of the barcode. In this situation, a diagonal arrangement is preferable (see figure 1)



Figure 1: Diagonal arrangement

- The barcodes should NOT be arranged diagonally on larger packaging (from 40 cm edge length) because there is a risk of double scanning (see figure 2)



Figure 2: Recommended positioning of barcodes for large items

- Design / content
 - During the product design process, it will be necessary to decide whether to use an 8-digit or a 13-digit GTIN due to the space available for printing (see figure 3)

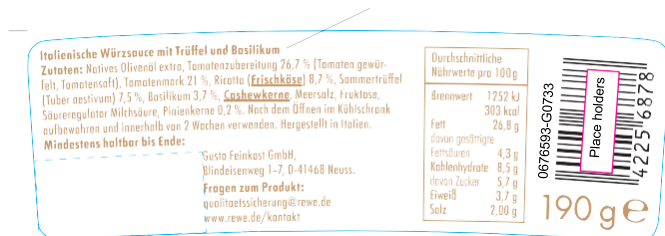
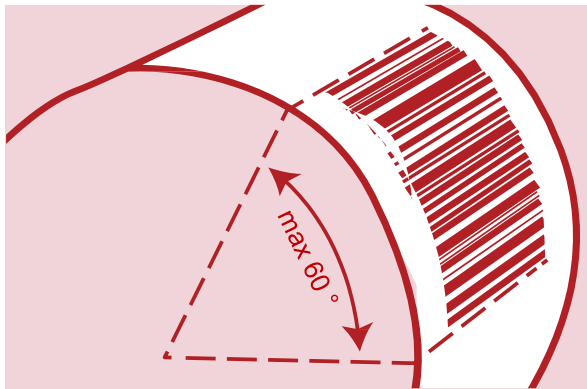


Figure 3: 8-digit GTIN for own brand products (example)

- Only one barcode per package is required with an 8 or 13-digit number sequence plus the national product number (NAN) and the product management supplier code. These need not be positioned below the barcode. They can also be displayed either to the right or left, along the upright edge (maintain the quiet zone).
 - The additional barcodes do not require a number sequence.
 - These additional barcodes can be truncated by up to 1/3 in exceptional cases, for example, when placed at the front.
 - If the barcode is truncated, the printing quality must be sufficient (sufficient barcode verification results must be guaranteed, see “print quality”)
 - The barcode with the GTIN, the national product number (NAN) and the inventory control vendor number are to be printed on the back of the primary packaging.

- In principle, SC2 barcodes (not truncated) are the ideal size and preferable to all smaller barcodes
 - A truncated SC2 size barcode is preferable to an SC1 size barcode
 - Similarly, a truncated SC1 size barcode is preferable to an SC0 size barcode which has not been truncated
 - It generally applies that: the smaller the barcode size, the greater the requirements in terms of print quality (sufficient barcode verification results must always be guaranteed, see section on "print quality")
- Quiet zones above and below picket fence codes (or to the left and right of ladder barcodes) can be omitted but the quiet zones to the left and the right of picket fence barcodes (and above or below ladder barcodes) must be retained.
- Colour / contrast
 - A full tone colour must be used for the barcode (black or pantone spot colour)
 - Suitable colours for the bars: e.g. black, dark green or dark blue
 - White is the preferred background Alternatives must comply with the GS1 requirements (e.g., light blue, beige, orange, pink or red)
- Print quality
 - The better the print quality, the faster and more accurately the barcode will be read
 - REWE requirements for the verification results: The minimum level of quality is grade 3 (ANSI grade B) or above according to CEN / ANSI ISO / IEC 15416 (similar to a GS1 recommendation)
- Positioning
 - The positioning of the barcode ensures that each item can be fed across the scanner as required and at least one barcode will be read during the process
 - Barcodes should always be located in a position which is as firm as possible
 - Products with a clearly defined base should have the barcode at the bottom
 - If the characteristics of a product (weight, volume and handling) mean that it is not suitable for scanning on a conveyor belt at the checkout, the relevant alternatives for the checkout procedure must be ensured
 - In general, it should be ensured that barcodes are arranged diagonally - especially if it has not been possible to apply a barcode to all sides (exception: large packaging, see section on size / dimensions)
 - The ideal positioning of the barcode will depend on the type of packaging used for the item in each case. Section 2 contains the requirements for each type of packaging
 - Packaging that has not been explicitly outlined in Section 2 is to be designed so that it is as close as possible to the packaging types and is ideal for scanning
 - Barcodes may not be positioned over perforations, seams, edges, die-cuts, ridges, folds, flaps, overlaps or rough textures
 - The following always applies to cylindrical items (tubs, cans or bottles etc.):
 - The angle created along the external edges of a picket fence barcode may not exceed 60° (see figure)
 - If the barcode is wider, a ladder barcode must be used (see guidelines on round packaging types in Section 2)



Source: GS 1 Austria -
Strichcodequalität (barcode
qualität)

Figure 4: Restrictions for picket fence barcodes on round shapes

- If space for an additional barcode on the available sides of the packaging is restricted, the following elements of labelling may not be omitted in favour of the barcode:
 - Any information required by law (e.g., item name, filling capacity, BBD information, the distributor, health marks, ingredients and the additional nutritional table etc.)
 - Warehousing & storage advice as well as instructions for preparation and use
 - Added value symbols and logos: Protected geographical information, MSC, ProPlanet, Bio-Siegel, the TÜV stamp (Technical Inspection Association) and AISE pictograms etc.
 - The nutritional plus box (Ernährungsplus) and the “no additives” box etc.
 - Product added value (e.g. pictograms or claims)
 - Information on provenance for organic labels (e.g. Naturland, REWE Bio, REWE Regional or Naturgut)
 - Texts which are a fixed component of the brand communication
- The following packaging components must be omitted or reduced in favour of an additional barcode:
 - Marketing texts and other claims (filler text, e.g. tips & tricks)
 - Repetition of the own brand logo
 - Repetition of the product name
 - Repetition of the product image

2 Detailed requirements for each type of packaging (represented through illustrations)

Please note: Ideal solutions for barcodes always incorporate a minimum solution

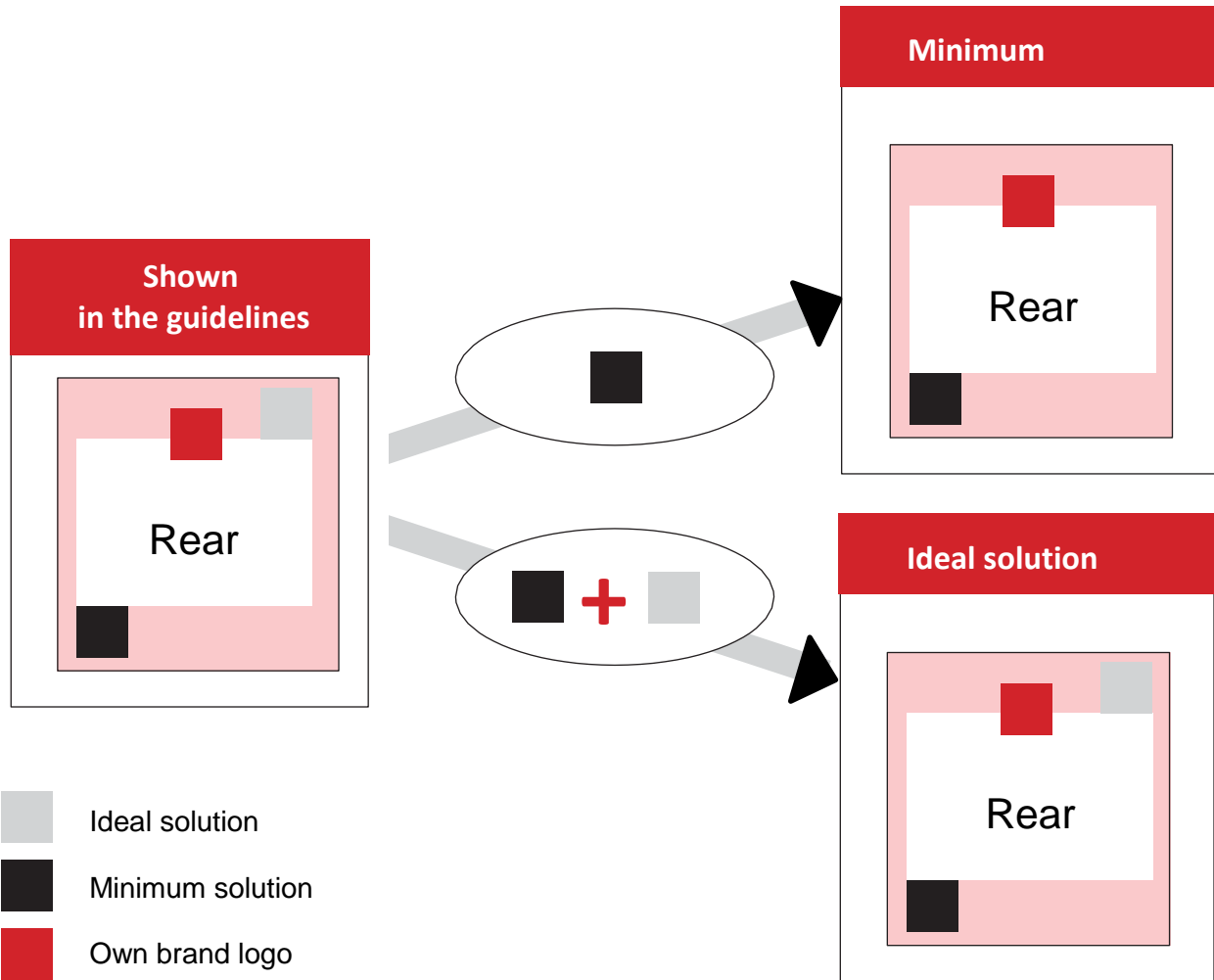
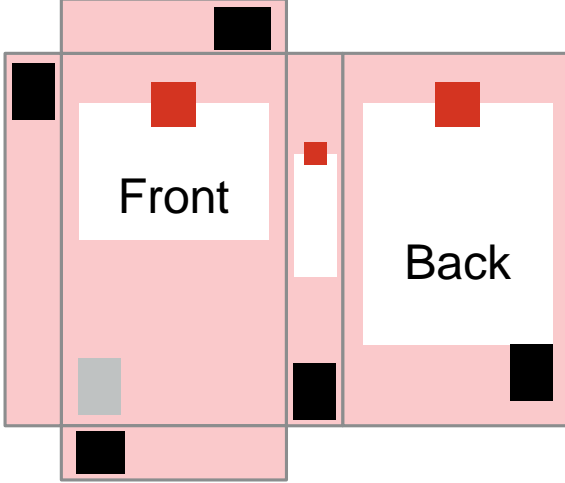
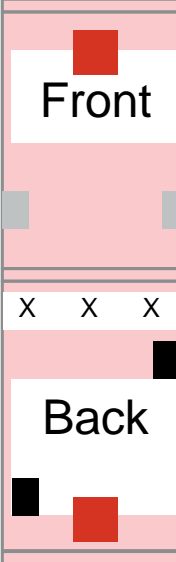
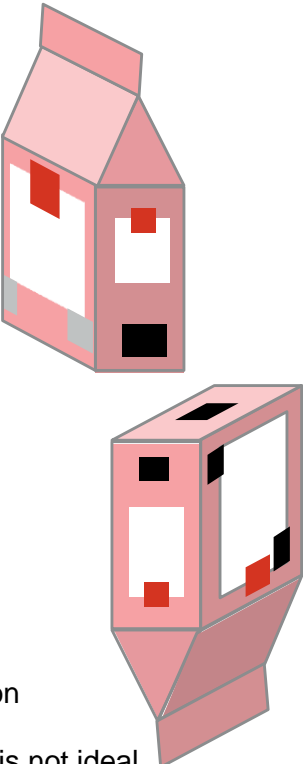
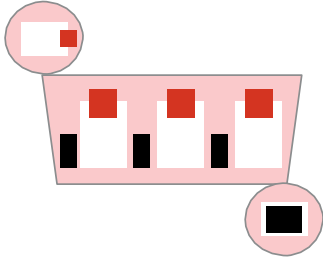
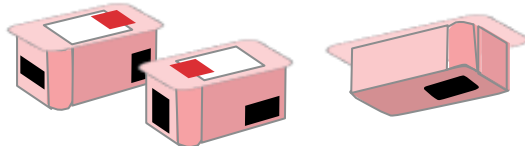

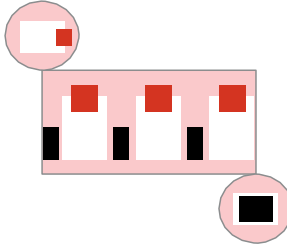
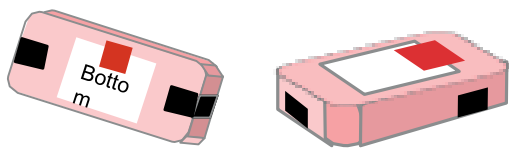

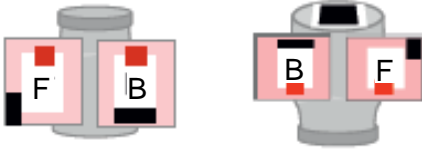
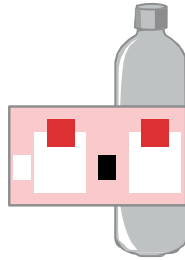
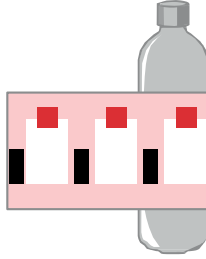
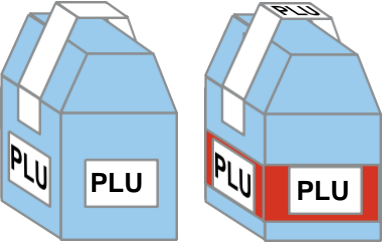
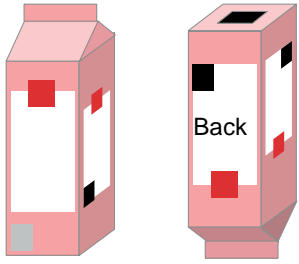


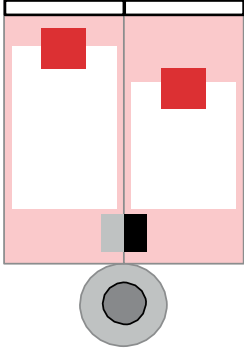
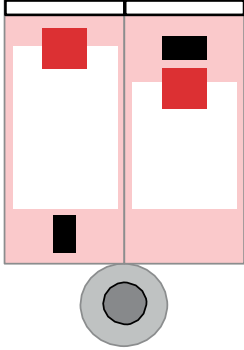


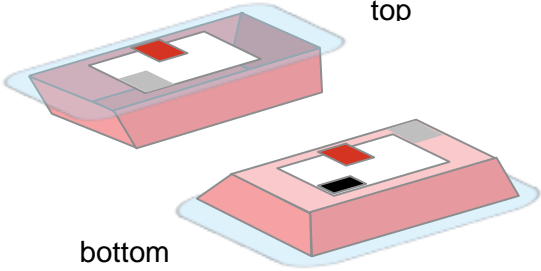
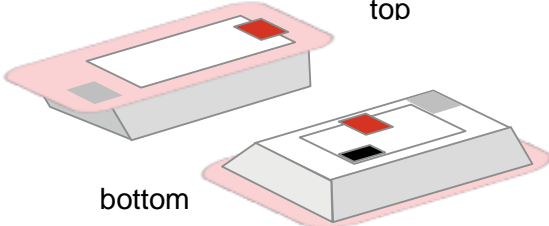


Figure 5: Ideal vs. minimum solution for barcodes

Collapsible boxes / rectangular packaging	Sachets / bags
 <p data-bbox="199 929 494 1041"> Ideal solution Minimum solution </p>	<div style="display: flex; justify-content: space-around;"> <div data-bbox="853 392 1045 1041"> <p data-bbox="853 392 965 425">a) Bags</p>  <p data-bbox="853 1064 1141 1243"> Ideal solution Minimum solution X The positioning is not ideal </p> </div> <div data-bbox="1117 392 1444 1232"> <p data-bbox="1157 392 1444 425">b) Stand-up sachets</p>  </div> </div>
<ul style="list-style-type: none"> ▪ In principle: each side should have a barcode ▪ Barcodes on the 4 narrow side panels and set as far apart as possible ▪ If it is not possible to have a barcode on the side panels due to space or the visual appearance: the barcodes should be located at the back or on the base and set as far apart as possible 	<p>a) Bags:</p> <ul style="list-style-type: none"> ▪ two barcodes arranged diagonally at the top and bottom ▪ Barcodes should always be arranged horizontally and in a location which is as firm as possible (e.g. on the lower third of the item) ▪ Positioning at edges / near weld seams should always be avoided (see illustration of “positioning is not ideal”) <p>b) Stand-up sachets:</p> <ul style="list-style-type: none"> ▪ generally the same as bags (see above) ▪ In addition: If possible, position 2 barcodes over the entire width of both of the narrow side panels (alternative: position barcodes on the sides, in the middle) ▪ An additional barcode is to be located on the base

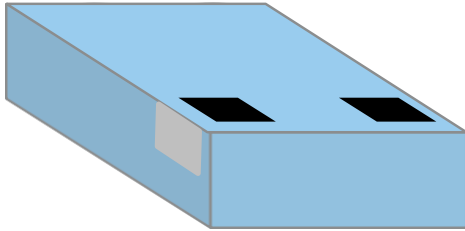
Tubs	Tins / canned foods
<p>a) Round tubs:</p>  <p>b) Rectangular tubs / bowls:</p>  <p> Minimum solution</p>	<p>a) Round tins:</p>  <p>b) Flat tinned foods:</p> 
<p>a) Round tubs:</p> <ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Position the barcode on the base - Picket fence barcodes may only be used if the angle created along the external edges does not exceed 60° ▪ Recommendation for large tubs: Three barcodes positioned on the side of the tub at equal intervals where possible <p>b) Rectangular tubs / bowls:</p> <ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Position the barcode on the base. - 4 barcodes opposite each other, as far apart as possible and located on the side panels 	<p>a) Round tins:</p> <ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Position the barcode on the base - Picket fence barcodes may only be used if the angle created along the external edges does not exceed 60° ▪ Recommendation for large tins: Three barcodes positioned on the side of the tin at equal intervals where possible <p>b) Flat tinned foods:</p> <ul style="list-style-type: none"> ▪ In principle: 4 barcodes opposite each other, as far apart as possible and located on the side panels

Jars	Bottles
<p>a) Wrap-around label:</p>  <p>b) Two labels:</p>  <p>■ Minimum solution</p>	<p>a) With deposit:</p>  <p>b) Without deposit:</p>  <p>■ Minimum solution</p>
<ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Position the barcode on the base, if possible - Picket fence barcodes may only be used if the angle created along the external edges does not exceed 60° <p>a) Wrap-around label (recommendation for large jars): Three barcodes positioned on the side of the jar at equal intervals where possible</p> <p>b) Two labels: A barcode on the back and on the front</p>	<p>a) With deposit:</p> <ul style="list-style-type: none"> ▪ A barcode positioned according to legal requirements (ladder barcode) ▪ The DPG (German Physical Society) deposit labelling is standardised and mandatory for those who participate in the system. Therefore it cannot be changed <p>b) Without deposit:</p> <ul style="list-style-type: none"> ▪ In principle: Picket fence barcodes may only be used if the angle created along the external edges does not exceed 60° ▪ Recommendation for large bottles: Three barcodes positioned on the side of the bottle at equal intervals, if possible

Outer packaging for drinks (multi-packs)	Drinks cartons
	 <p data-bbox="847 824 1145 936"> Ideal solution Minimum solution </p>
<ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Use the vertical PLU sleeve as a carrying strap - Place additional PLUs horizontally on each side of the packaging 	<ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - each side should have a barcode - If the barcodes are on the base, they should not be placed at the edges or near weld seams

Tubes		Packaging of fresh produce (e.g. cheese, sausage or fresh meat)
<p>Alternative 1:</p>  <p>Alternative 2:</p>  <p>  Ideal solution  Minimum solution </p>	<p>Adhesive label:</p>  <p>Printed plastic film:</p>  <p>  Ideal solution  Minimum solution </p>	
<ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Barcodes should not be placed close to the flange where the tube is folded - Picket fence barcodes may only be used if the angle created along the external edges does not exceed 60° (see Section B: positioning) ▪ Alternative 1 (ideal solution): Position the barcode in the lower area on the back (near lid) so that some cm can be seen on the front ▪ Alternative 2: A barcode both at the front and on the back and not positioned in the same area as the handle (i.e. arranged diagonally) 	<ul style="list-style-type: none"> ▪ In principle: <ul style="list-style-type: none"> - Barcode on the base - Positioning on a slippery surface - Labels added after vacuum packaging ▪ Alternatively: Barcodes can be arranged diagonally at the back as in "bags" 	

Large film packaging with edge length starting at 40 cm (e.g. toilet paper)



Avoid:



Positioning next to each other on the wide side



Diagonal arrangement



Ideal solution



Minimum solution

- **In principle:**
two barcodes, as large as possible and placed one above the other on the narrow side panel
- The following arrangements are to be avoided because there is a risk of double scanning (see figures)
 - Barcodes placed next to each other on the wide side panel
 - Diagonal arrangements for the barcodes

Legal notice

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