



# Coop Automation Guide for Packaging · Pallets · Master Data · EDI

## INTRODUCTION

Coop is constantly developing to meet future customer demands. Coop's latest investment is a new highly automated terminal in Eskilstuna, which is set to start operating in October 2023. At full capacity, the Eskilstuna terminal will replace existing terminals in Bro and Västerås by summer 2024. The Enköping terminal will not be affected.

The Eskilstuna terminal will be central to Coop's supply chain and will contribute to a faster, more efficient, and more sustainable supply chain.

Coop has long followed industry standards for packaging, pallets, master data, and EDI. To make it easier for suppliers to comply with our requirements, we have developed Coop Automation Guide. It includes industry standards and the automation requirements that Coop will require from suppliers. The aim is to provide support and understanding of the requirements for designing new packaging or adjusting existing ones, as well as instructions for pallet construction and related conditions. The guide also describes the requirements for master data quality and EDI.

As the capacity for manual handling will be severely limited in the new terminal, there is a risk that Coop will not be able to handle items that do not meet automation requirements. Therefore, Coop has communicated that by May 31, 2023 (deliveries to the Bro Terminal) and November 30, 2023 (deliveries to the Västerås Terminal), the suppliers' range of products must be automation-ready according to the guidelines in this guide.

Coop looks forward to collaborating with its suppliers to ensure high delivery quality throughout the supply chain.

General questions about the Eskilstuna terminal can be sent to: [cat@coop.se](mailto:cat@coop.se)

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# AUTOMATION-ADAPTED PACKAGING



The following text describes the industry's standard for packaging, Coop's future requirements, and how deviations can be handled to enable automated handling. The packaging should be designed to protect the consumer packaging throughout the logistics chain, including transportation, handling in the automated warehouse, and groupage with other goods during transport to the store.

The packaging should have optimized functionality and environmental benefits as much as possible. The packaging should be easily sorted and recycled, and different types of materials in the packaging should be easy to separate.

## Packaging dimensions

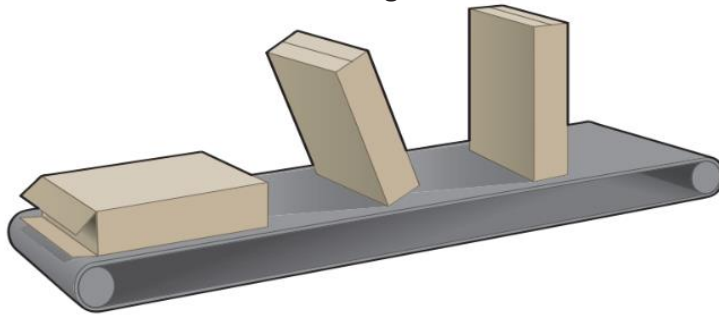
In order for packaging to be fully managed in the Automated Warehouse, its dimensions must be within the following limits:

	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)
Maximum dimension	440	400	600	25
Minimum dimension	45	150	150	0.5

The maximum weight for full handling through automation is 25 kg. For manual handling of packaging, the maximum weight of 15 kg remains according to Validoo. If the weight exceeds 15 kg, Coop needs to approve an exemption.

## Packaging ratio

The packaging shall have a stable design that minimizes the risk of tipping over during handling. The packages should have a maximum ratio of 1.2 for height to depth and a maximum ratio of 1.7 for height to width.



### Example:

Packaging dimensions  
(Height x Width x Depth):  
450 x 300 x 250 mm

### Ratio calculation:

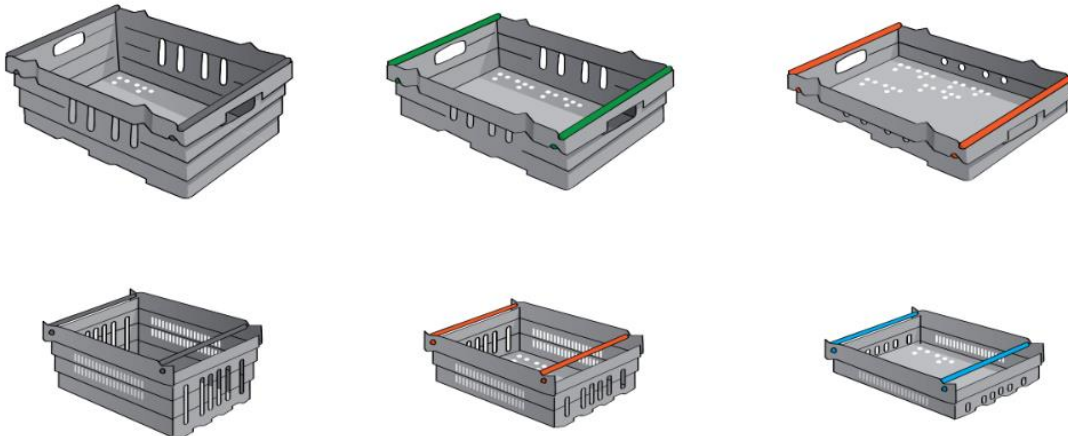
$$450/250 = 1.8$$

$$450/300 = 1.5$$

*This box has a ratio of 1.8 and 1.5 and is thus not automation adapted.*

## SRS trays

Svenska Retursystem provides six different modules of SRS trays that are used in the grocery industry. The loop position on the SRS tray must always be in a constant position at the item level. Specifically, the loop position must not vary from tray to tray but must always be delivered in the same position on the corresponding item.



*Examples of Svenska Retursystem's 6 different modules of SRS trays.*

## Labelling of packaging

GTINs and barcodes on packaging are crucial for achieving logistical efficiency throughout the supply chain. All packages must be labeled with a GS1 standard label for easy identification. It is important to note that display, whole pallet, and half pallet are considered outer packaging. The barcode in the label should be in the GS1-128 format.

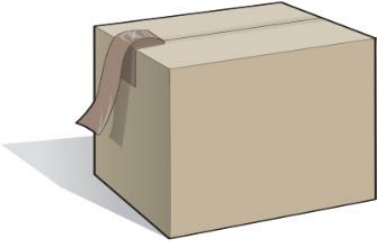
In addition, the packaging must be marked with the batch number and the best-before date if the consumer package has a best-before date. For packaging containing dangerous goods, applicable legal requirements for labeling must be followed."

The changes include minor modifications to sentence structure and wording to improve readability and clarity.

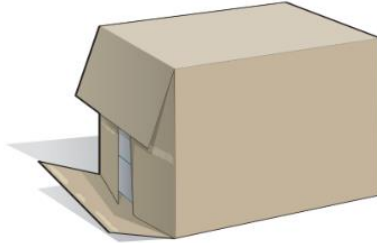
## Common packaging deviations and how they can be avoided

### Loose lids

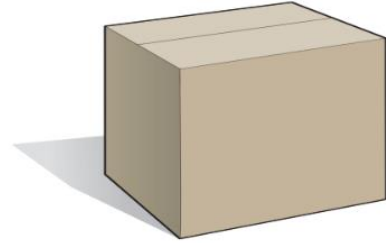
It is important to keep in mind that lids must always be attached with glue, tape or other form of locking. If the lid is loose, consumer packages may fall out and be damaged during handling. Tape ends must be well sealed against the carton and must not hang loose or stick out. Tape must also not be used to secure packaging on the pallet.



*Example of loosely hung tape where there is a risk of getting stuck on nearby cartons and being easily torn up when handling the packaging.*



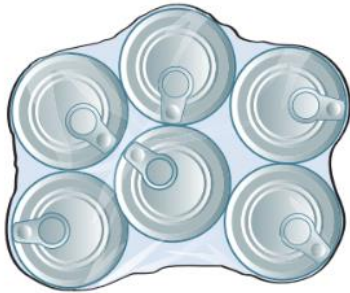
*Example of loose lid caused by glue coming unstuck.*



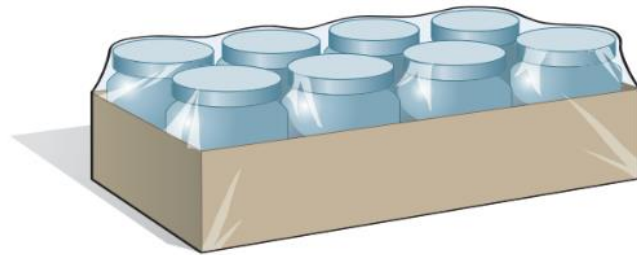
*A functional package for automation with closed lid*

### Uneven shrink filming

Shrink filming is intended to create stable and even packaging. Unstable and uneven shapes can impact the quality of the product and may cause damage. If the packaging is uneven, it can be resolved by placing a card tray underneath the consumer packages.



*Example of shrink film packaging with uneven and irregular shape.*



*By using a card tray and tight shrink film, the packaging has a stable and regular shape.*

### Excess shrink film

Excess shrink film, also known as a "beard", can pose a risk of the packaging getting caught and stuck during various processes.



*Example of packaging with a plastic "beard" that cannot be handled through Automation.*



### Uneven shape

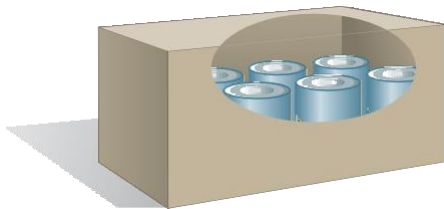
When developing consumer and outer packaging, it is important to use ideal modules. Keep in mind that the outer dimensions of the consumer package must fit into the inner dimensions of the packaging. Therefore, it is important to plan for stable and even packaging. Optimized packaging also has its size adapted to the dimensions of the load carrier.



*Example of unstable and uneven shape that in the worst case can damage the product.*

### Low filling level

Packaging should have as high a filling level as possible so that the consumer packages can provide stability and strength and reduce environmental impact. With a poor filling level, the packaging has poorer strength, which can lead to crushed and deformed packaging on the pallet.



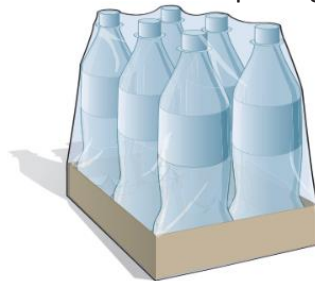
*Example of packaging with a low filling level.*

### Uneven bottom

The underside/bottom of the packaging shall be flat. An uneven underside/bottom can be solved by placing a card tray under the consumer packages.



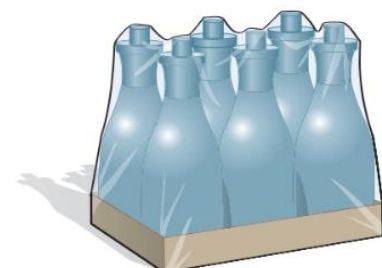
*Example of packaging with unevenness at the bottom.*



*An uneven underside can be solved by placing a card tray at the bottom.*

### Uneven top

In addition to a stable and even bottom, the packaging also needs an even top for efficient handling. A pointed top can make packaging unstable to pack on pallets to the store and increase the risk of damage to consumer packaging.



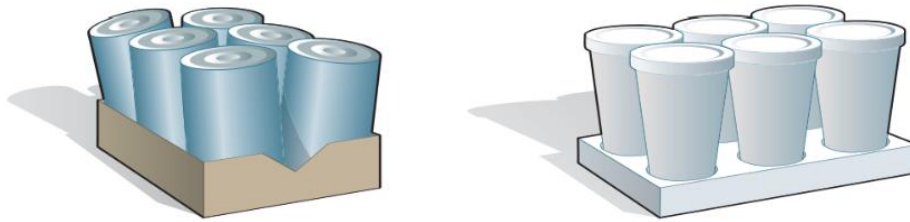
*Examples of packaging with uneven top.*



*An uneven top can be solved by placing a card tray over the consumer packages.*

### Trays without a lid or shrink film

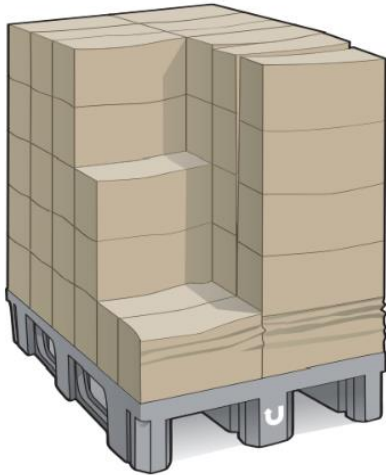
Trays without a lid or shrink film should have a tray edge equal to at least 50% of the height of the consumer package, but must be at least 45 mm. If the tray edge on the long or short side is too low, the consumer packaging risks falling out of the package.



*Examples of packaging without lids and shrink film where the consumer packaging is at risk of falling out.*

### Substandard corrugated board

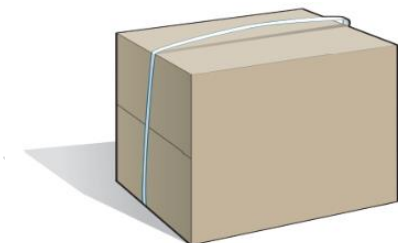
The quality of corrugated board used for packaging must be adapted to the shape and weight of the product to ensure that any tray is rigid and of good quality. Weak corrugated board quality can cause the packaging to deform at the bottom of the pallet or when stacked on top of each other. Both glue and corrugated board must withstand normal handling of the packaging. The most common problem with packaging defects is the glue becoming unstuck. It can be enough for just one glue point to fail during handling, causing the structure to rupture and resulting in damage to the consumer packaging.



*Examples of weak corrugated board quality where the packaging becomes compressed and irregularly shaped on the pallet.*

### Loose handles and straps

If straps are used, they must be placed tightly around the packaging without gaps. Protruding handles on the packaging must be avoided as far as possible.

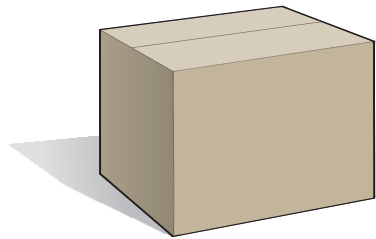


*Example of loose strap at risk of getting stuck when the packaging is handled.*

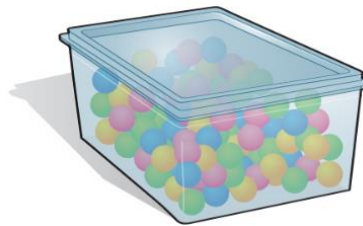


## Hard plastic

Hard plastic packaging often has a raised edge on the lid that makes packaging unstable when co-packing products for stores. This type of packaging material should preferably be avoided and replaced by packaging of corrugated board, where sealed plastic bags in the packaging can be used to protect the quality of the product.



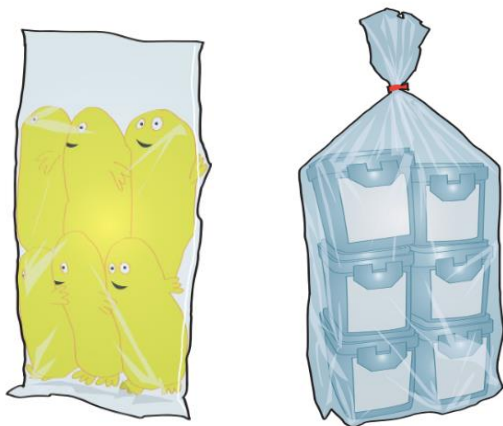
*By using sealed plastic bags in the corrugated board carton, the quality of the product is protected.*



*Example of hard plastic packaging with lid with a raised edge.*

## Bags and sacks

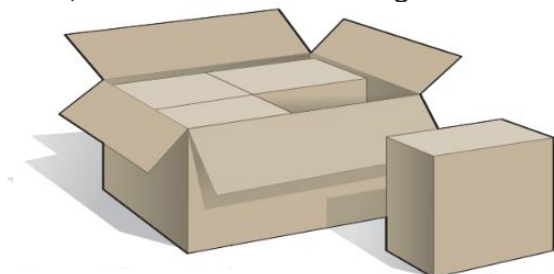
Packaging in the form of bags and sacks cannot be handled with automation. To enable automated handling, a bag can be placed in a carton. It is important to ensure as high a filling rate as possible in the carton. With a poor filling level, the packaging has poorer strength, which can lead to deformed packaging on the pallet.



*Example of bags and sacks that cannot be handled by automation.*

## Transport cartons

If a transport carton is used, manual handling is required to remove the packages. Transport cartons shall be avoided and are only accepted in exceptional cases. If a transport carton is used, it shall be entered through item information in Validoo and have its own GTIN.



*Example of transport carton*

**Want to know more about automation-friendly packaging?**  
For more information, see the ECR Packaging Guide [www.ecr.se/forpackningsguiden](http://www.ecr.se/forpackningsguiden)

# AUTOMATION-ADAPTED PALLETS

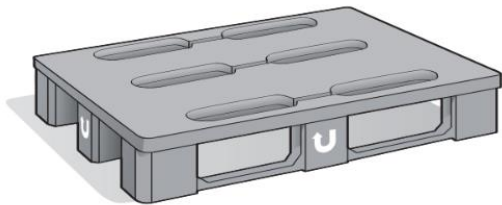
To achieve automated handling of pallets in our new terminal, they need to be stable, have the correct marking and appearance, and be delivered with quality assured load carriers. The following text describes industry standards and Coop's future requirements for pallets and how deviations can be handled to enable automated handling.

## Load carrier types

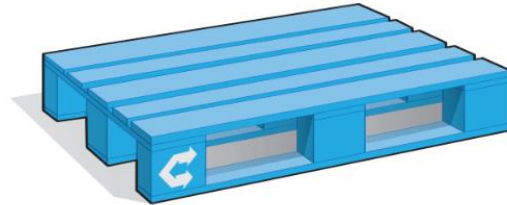
It is important that the pallet is flawless upon arrival at the automation, to minimize the risk of automation stops. The carriers must be whole, clean and must not be contaminated in such a way as to damage the goods or automation belts.

Coop therefore strives to ensure quality-assured arriving load carriers by having goods from suppliers delivered on the pallet types CHEP or SRS 800x1200 mm. A-rated EUR pallets are accepted with permission granted by Coop.

Automation only handles whole and half pallets. Third-sized pallets are only accepted in exceptional cases and with Coop's approval. Quarter pallets and disposable pallets are not accepted.



SRS 800x1200 mm



CHEP 800x1200 mm

## SRS

Plastic pallets from Svenska Retursystem. Svenska Retursystem has a user fee and daily rent on full-size pallet grey, and half-size pallet black has a deposit. Half-size pallet grey is registered and administered in the Svenska Retursystem web portal. The load carrier does not need to be inspected and there is no pallet replacement or pallet transfer system.

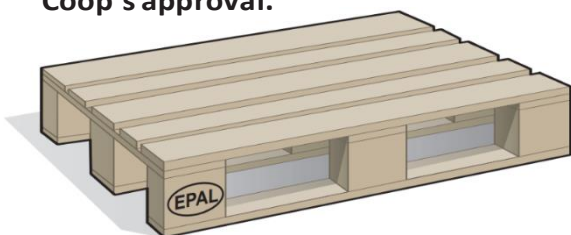
Read more at [www.svenskaretursystem.se](http://www.svenskaretursystem.se).

## CHEP

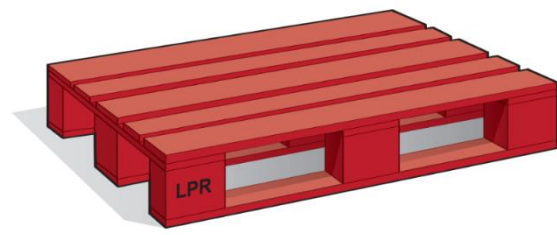
Pooling company providing characteristic blue wooden load carrier, which is available at a cost. The cost shall be included in the price of the goods. The load carrier does not need to be inspected and there is no pallet replacement or pallet transfer system.

Read more at [www.chep.se](http://www.chep.se).

**A-rated EUR pallets and LPR pallets are only accepted in exceptional cases and with Coop's approval.**



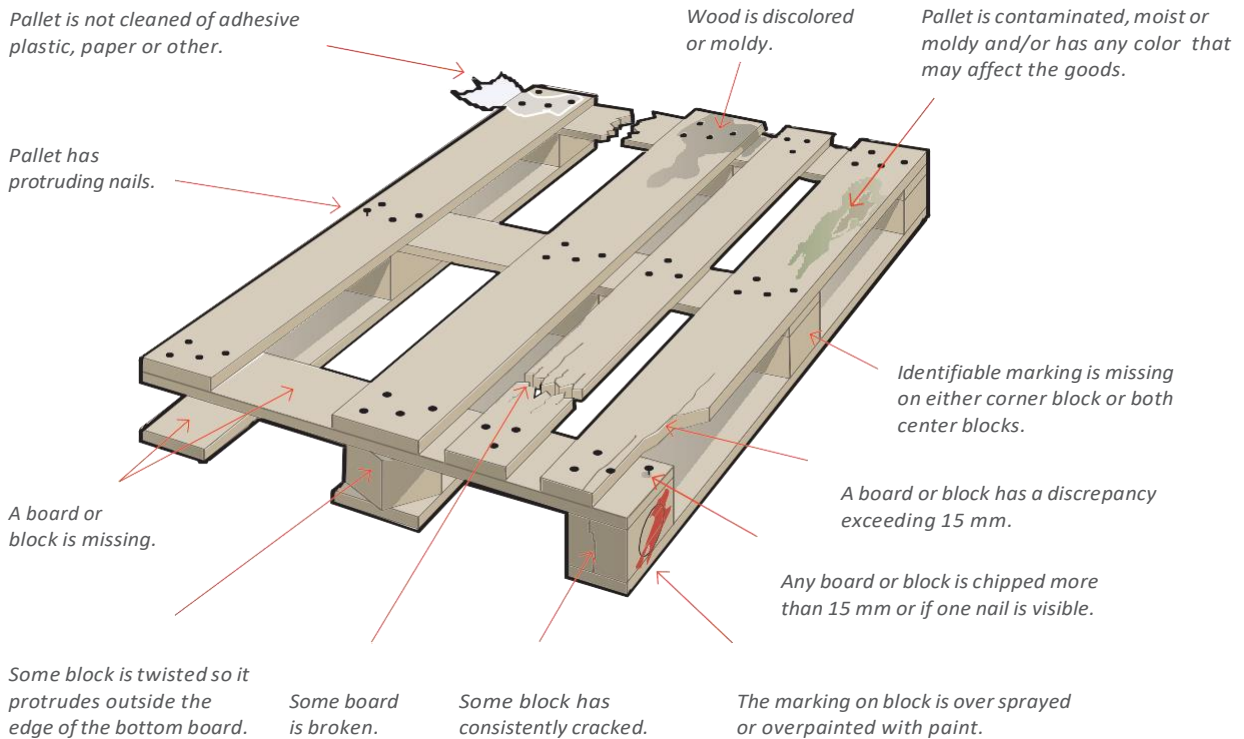
EUR 800x1200 mm



LPR 800x1200 mm

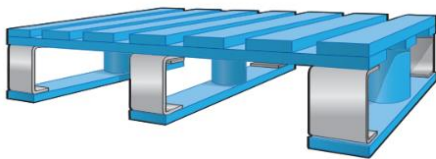
In order for the EUR pallet to be classified as approved, it must be manufactured according to UIC Code 435-2, Swedish standard (SS-EN 13698-1) or equivalent national standard. Read more at [www.dnvgl.se](http://www.dnvgl.se) and [www.sis.se](http://www.sis.se).

**A-rated EUR pallets and LPR pallets are only accepted in exceptional cases.**

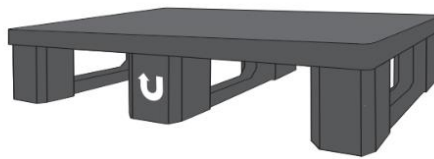


**Half pallets**

Half pallets 800 x 600 mm should always be delivered placed on a slave pallet (800 x 1200 mm) of type SRS or CHEP. If only one-half pallet is delivered, it shall be placed centrally on the slave pallet. The maximum height of the half pallet is 1250 mm including load carrier and slave pallet. With dispensation, pallets up to 1900 mm can be accepted. The total weight of a half pallet, including load carrier, must not exceed 500 kg.



*CHEP one-half pallet 800x600 mm*

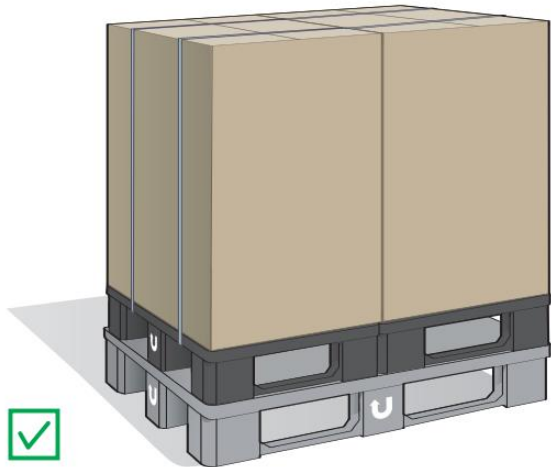


*SRS one-half pallet 800x600 mm*

Wooden half pallets (white) are classified as disposable pallets and, together with flex pallets, will be phased out and must be avoided.

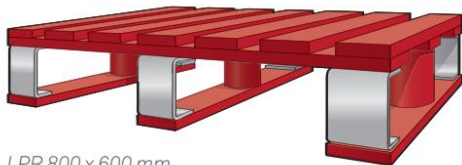
By using a corrugated cardboard hood on the half pallet, the pallet becomes more stable and less prone to tipping over. The hood must not be oversized so that it creates overhangs or reach down around the blocks of the pallet. Plastic straps used to secure the half pallet for transport must be anchored around the half-pallet and must not be anchored around the slave pallet.

A half pallet solution with an open bottom should be avoided as it raises the center of gravity of the pallet, creating instability and a risk of the half pallet tipping over.



*Example of half pallets with corrugated hood and they shall be anchored with plastic straps and placed on a slave pallet.*

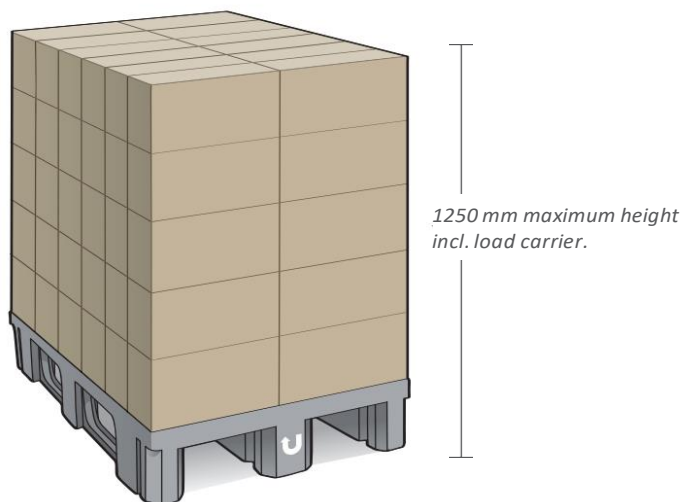
Pooling pallet LPR half pallet is accepted in exceptional cases.



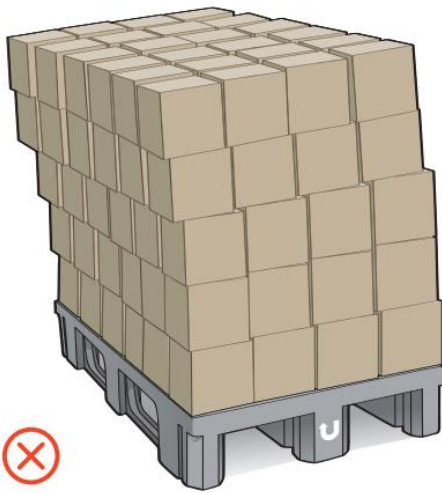
*LPR 800 x 600 mm*

### **Construction of pallets**

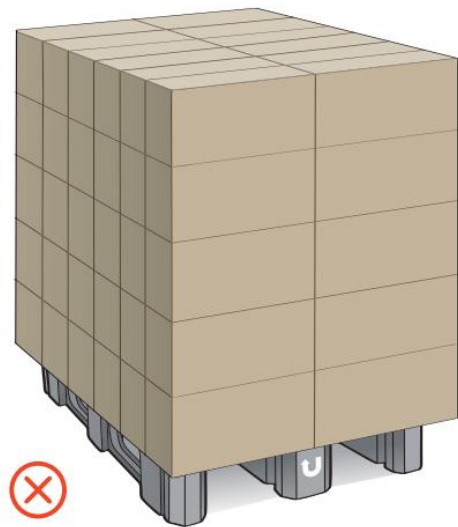
The total height, including the load carrier, must not exceed 1250 mm. However, with permission from Coop, pallets up to 1900 mm can be accepted. The total weight, including the load carrier, should not exceed 1000 kg.



The pallet shall be constructed **without overhang** and the packaging must not be placed outside the load carrier. If the pallet is not up to standard, it risks being rejected on the track system at the goods reception. Any faults must be corrected manually, which is not always possible and leads to inefficient and slow handling.

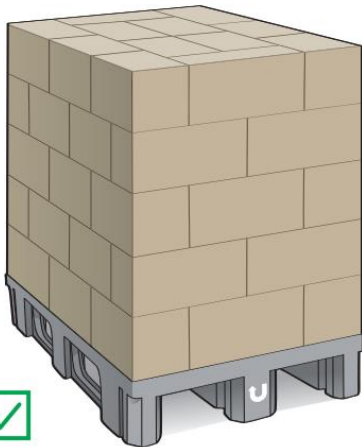


*Tower stacking of smaller outer packaging often results in unstable pallets with overhangs that easily collapse during handling and after removal of plastic.*



*Packaging that is not adapted to the pallet's size and creates overhangs.*

To create good stability and filling, packaging can be conveniently placed to bond the load on the pallet, which also minimizes the risk of overhang and instability.

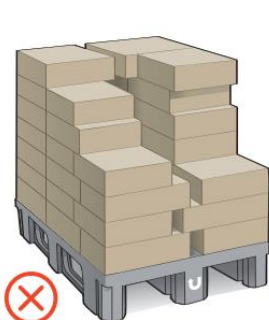


*Pallet with load laid with a bond.*

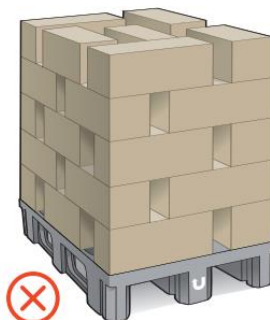
### Load on the pallet

In order for the load on the pallet to be handled with full automation, it must be placed on the pallet so that air pockets do not arise. It is important that the packaging reaches all the way from edge to edge of the carrier, i.e. 800x1200 mm. The dimensions of the packaging are recommended to be modular according to the dimensions of the pallet in order to achieve a high filling rate and efficient handling in the automation.

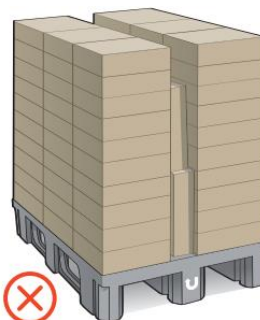
The load on the pallet should be smooth and regular. The packaging must not be turned so that the load becomes irregular. Each load shall contain the same number of packages. The maximum weight to handle a load item is 200 kg.



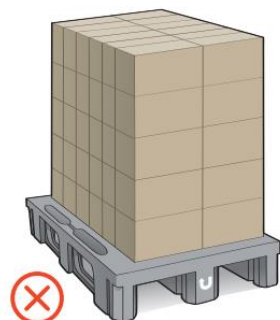
*Example of load with air pockets in the middle of the pallet, a so-called "chimney".*



*Examples of load with air pockets.*



*Example of turned packages that create an uneven load.*

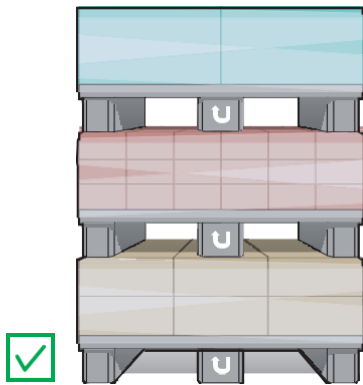


*Example of packaging that is not adapted to the pallet's size and creates a narrow load.*



### Load pallet

A load pallet may consist of several sorted load pallets, where each item is placed on its own pallet. It is recommended that each sorted load pallet is separately covered in plastic. If an ordered volume of an individual item represents more than 50% of a load, the item shall be delivered on its own pallet.



Example of sorted load pallets.

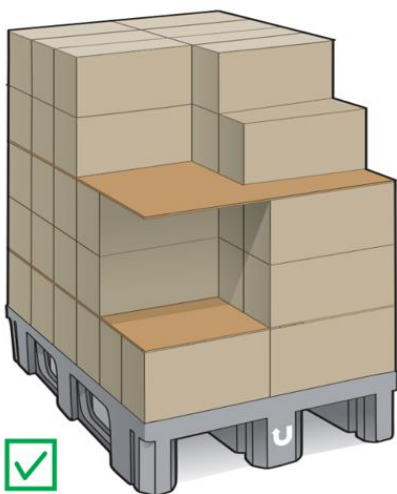
### Mixed pallet

A mixed pallet consists of a load carrier loaded with packages that have different item numbers and make up less than 50% of a load. This type of pallet requires manual sorting in the automation and should be avoided.

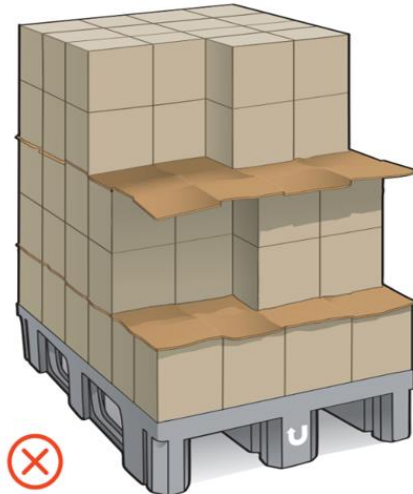
### Intermediate layers

Intermediate layers can be used to create stability in the pallet module. Tower stacking of smaller packages often results in unstable pallets that easily collapse during handling after the removal of plastic. Intermediate layers can then be used to stabilize the pallet.

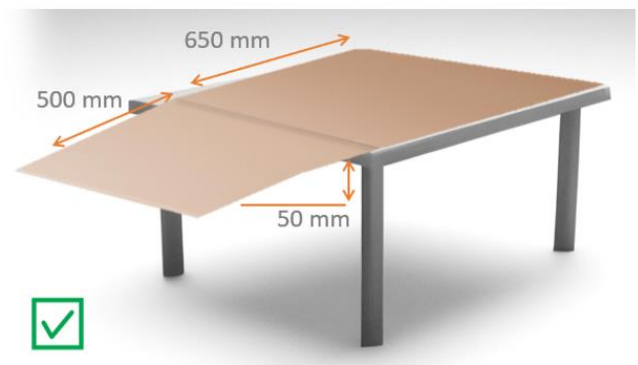
The intermediate layers should not exceed the dimensions of the load carrier (800 x 1200 mm). Multiple intermediate layers per load level are not allowed. The intermediate layers should be made of qualitatively robust paper or thinner cardboard, and should not be irregular, divided, perforated with holes, or patterned according to the weight of the goods.



Robust intermediate layers that stabilize the pallet



Example of perforated and protruding intermediate layers that can cause production stoppages



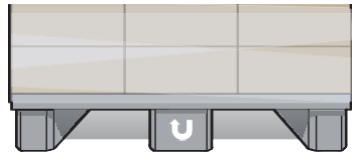
The stiffness of the intermediate layer must pass the following test: if the short edge of the intermediate layer hangs 500 mm from another flat surface (e.g. a table), the intermediate layer must not bend more than 50 mm, see illustration above.

### Plastic covering of pallets

Packages placed on pallets shall be secured with plastic. The plastic shall cover all packaging and also go down around the pallet, so that the packages are fixed on the pallet. The plastic must not cover the tunnels of the pallet and must not be so tight that the packages become deformed. Both whole and half pallets shall be plastic covered and this must be transparent.



The plastic must not be anchored around the feet of the pallet. Pallet tunnels covered in plastic cannot be handled in automation and will be rejected on the track system at the goods reception. Loose hanging plastic may cause production stoppages.



The plastic should go down around the pallet, but must not cover the pallet tunnels



Example of covered pallet tunnels and loose hanging plastic that may cause production stoppages

### Edge protection

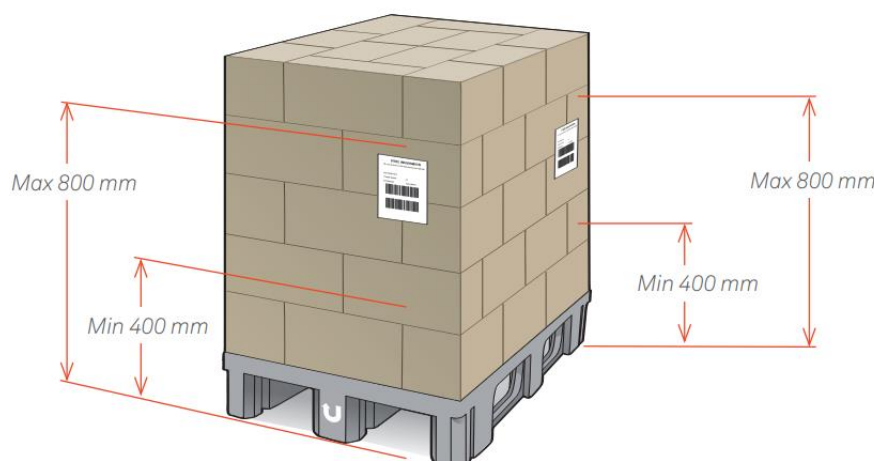
Avoid using edge protection in the form of corrugated board placed on the corners of the pallet, as these need to be manually removed to enable automated handling.

### Marking of pallets

Pallets delivered to Coop's Automated Terminal must be labelled with a GS1 pallet label according to standard. The pallet label is necessary to identify the handling of the pallet in the warehouse. When the information on the pallet label matches the physical item and when the supplier correctly labels the pallet, it enables automated handling. Pallets that are not labelled correctly with the GS1 label require manual handling, which increases the risk of production stoppages. The barcode in the pallet label must be in the GS1-128 format.

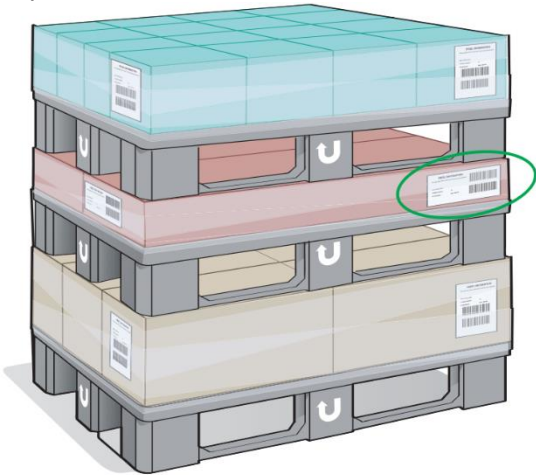
If the pallet contains packages of different best before dates, the worst best before date must be indicated on the pallet label.

Each pallet must be marked with two GS1 pallet labels, which should be placed on the pallet between 400 mm and 800 mm from floor level. They should be placed on a short side of the pallet and its right-hand long side, as seen from the short side with the pallet label. The label should be placed horizontally on the pallet, with horizontal bars and vertical barcodes, and should be placed on the outside of the plastic. If the pallets are delivered in pairs, the labels of both pallets must be positioned in the same direction. The label must be white with a black barcode and must be of sufficient quality to be readable with a scanner.



Label placing of GS1 label on the pallet

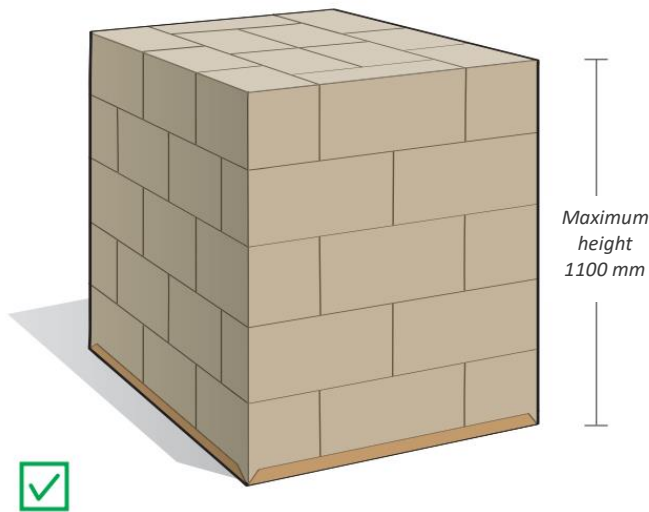
For low load pallets where horizontal pallet labels do not fit, a low pallet label can be used where the text fields are placed on the left and the barcodes on the right, see example in the picture below.



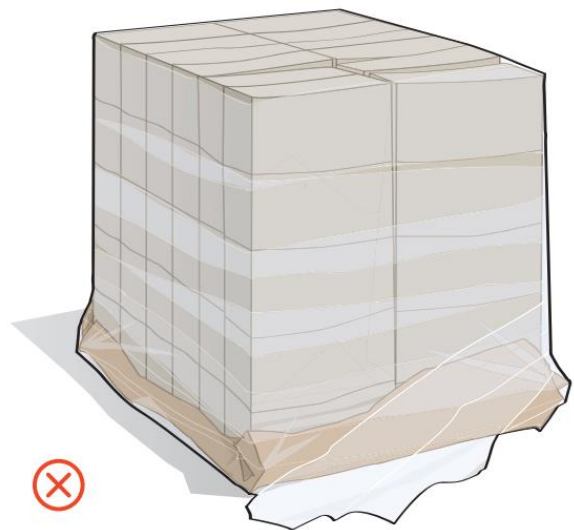
*Placing of GS1 pallet label on load pallets*

### **Slipsheets Container**

Packages in containers shall be loaded onto slipsheets of corrugated cardboard or pallets with a maximum height of 1100 mm in order to be placed on a load carrier when unloading. With dispensation, heights up to 1900 mm can be accepted (inc. load carrier). A slipsheet pallet must be secured with plastic and must be constructed without overhang so that the pallet can be placed level with the edges of the carrier, 800x1200 mm, i.e. the same requirements as for the use of pallets.

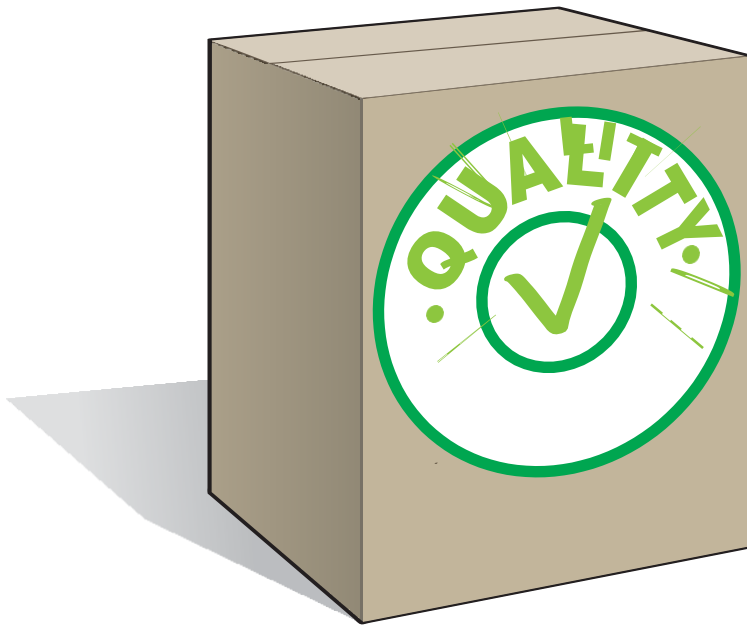


*Corrugated cardboard slipsheet without overhang and with packaging adapted to the dimensions of the pallet.*



*Example of slipsheet with overhang at the bottom and loosely hung plastic that can cause production stoppages.*

# QUALITY ASSURED ITEM MASTER DATA



An important piece of the puzzle for efficient and functional handling is quality-assured item information. The information is processed as a basis for decisions about new items and to enable the right handling of packaging and pallets in automation. GS1 item information is a standardized way to exchange information digitally about items, such as dimensions, weight, item number, brand and sustainability. Poor and incorrect data quality can cause production stoppages.

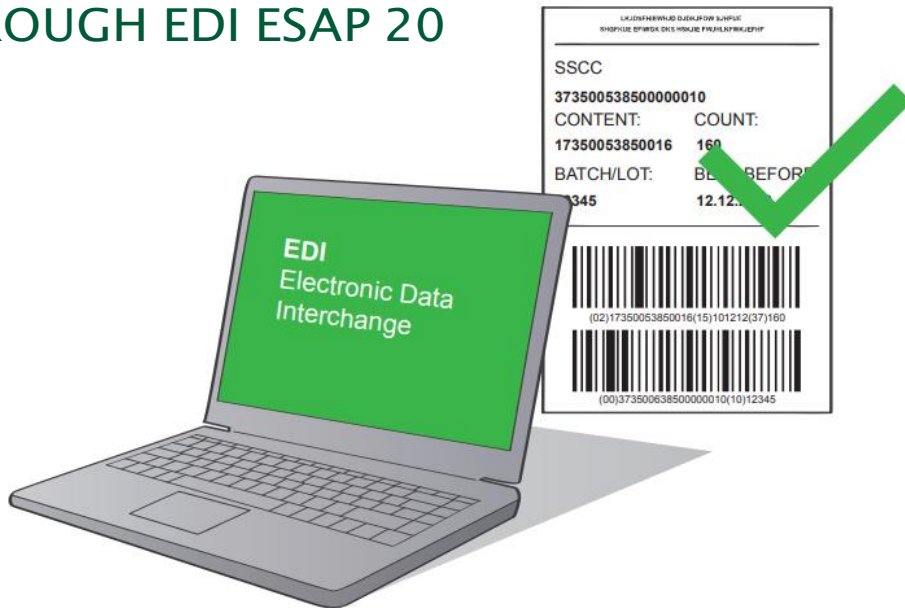
For the items that Coop brings into the product range, item information shall be shared via Validoo Item with Coop as the recipient according to the ECR time window. Quality assurance of the information shall also be carried out in accordance with the ECR time window in the Validoo Q lab. Quality assurance is usually done on consumer item and packaging and on the statutory food information. Changes to item information shall always be shared with Coop via Validoo Item and, if necessary, new quality assurance in Validoo Q-lab must also be carried out.

To support the processes in Automation, it is mandatory to provide accurate item information, including dimensions, weights, packaging types, and load carrier types. Additionally, pallets must be described correctly, including accurate information about packing patterns, stackability, and stacking height.

For some product groups, more information is required to ensure the handling of the product in automation, such as information on hazardous goods, chemical information, pharmaceutical information, temperature requirements or other circumstances that require abnormal handling in the warehouse. It is therefore important to quality assure the information provided.

For more information about what information can be exchanged, see GS1's guide to Item Information; the current version can be found at [www.gs1.se](http://www.gs1.se) and [www.validoo.se](http://www.validoo.se).

# COMMUNICATION AND DIGITALISATION THROUGH EDI ESAP 20



Coop requires communication via EDI. For suppliers who are not able to set up their own EDI connection, communication can take place via Coop EDI portal, which ensures that Coop's EDI requirements are met.

Incoming deliveries to the Eskilstuna terminal shall be notified via EDI ESAP 20. The ESAP20 message DESADV shall be sent to the receiving terminal when the goods leave the supplier's warehouse.

## The ESAP20 messages that Coop has as a minimum requirement in EDI communication with suppliers are:

- **Order**
  - Order acknowledgement
  - Order confirmation (being able to handle changes to orders)
- **Delivery notification**
- **Invoice** (possibility of also sending credit and additional invoice)
- **Control messages**

Suppliers who do not have EDI communication with Coop urgently need to establish this.

Coop collaborates with, among others:

Kofax/ Exder: [www.exder.se](http://www.exder.se)

EDI-Solutions: [www.edisolutions.se](http://www.edisolutions.se)

Read more [here](#) about Coop's EDI requirements. If you have questions about EDI and the set up with Coop, you are welcome to contact us by email through [esap20@coop.se](mailto:esap20@coop.se).

# REFERENCES

<b>CHEP</b>	<a href="http://www.chep.com">www.chep.com</a>
<b>GS1</b>	<a href="http://www.gs1.se">www.gs1.se</a>
<b>LPR</b>	<a href="http://www.lpr.eu">www.lpr.eu</a>
<b>Svenska Retursystem</b>	<a href="http://www.svenskaretursystem.se">www.svenskaretursystem.se</a>
<b>Validoo</b>	<a href="http://www.validoo.se">www.validoo.se</a>
<b>ECR Packaging Guide</b>	<a href="http://www.ecr.se/forpackningsguiden">www.ecr.se/forpackningsguiden</a>