Packaging-Guide

ECR SVERIGE
EFFICIENT CONSUMER RESPONSE

Version autumn 2018

ECR (Efficient Consumer Response) Europe was launched at the end of the 1990s. At that time, new discoveries in the field of product supply demonstrated that both retailers and suppliers could meet consumer needs better, faster and more efficiently by co-operating on common, competition-neutral industry issues.

Additional factors that contributed to the ECR movement gaining momentum were improvements in information technology, increasing competition, globalisation and the new larger European market, which made it possible to move goods and services more easily across national borders. Meanwhile, consumer demand developed and began to focus on more factors than ever before, such as a wider selection, better availability, better quality, increased freshness and improved product safety.

All these factors led to a fundamental change in industry practices. The traditional division between suppliers on one side and retailers on the other changed. ECR has contributed, and continues to contribute, to removing unnecessary costs

in the supply chain. This increases the benefit to consumers. The effects on the industry have been considerable, and the ECR working method continues to yield positive results.

ECR is about creating a holistic view of the entire value chain throughout the product path from suppliers, producers and retailers to the consumer. Generating benefits for the consumer is the

guiding principle of ECR. All work is aimed at increasing the efficiency of the flow of goods and information and adding value for the consumer.

ECR is divided into two main areas: Demand and Product Supply. The demand side deals with the introduction of new products and the discovery of more efficient promotions. Examples of product supply issues are demand-driven replenishment, including issues such as automated computer-based orders, and transportation optimisation.

ECR Europe was established in 1994. Two years later, ECR Sweden was established by DLF (Grocery Manufacturers of Sweden) and SvDH (Swedish Food and Beverage Retailers' Association).

The mission and objectives of ECR Sweden are:

- To spread knowledge about ECR to those involved in the Swedish FMCG (grocery) industry.

- To take the initiative and participate in business activities in ECR regions and to conduct investigations and projects when competition-neutral conditions exist.

- To conduct training sessions, seminars and con- ferences under the name ECR-FORUM across all organisational levels of companies in the industry.

For more information, please see
http://ecr-community.org/

Grocery Manufacturers of Sweden (DLF)

DLF Sweden is a trade association for companies that sell groceries to the retail sector, Restaurants & Industrial Catering in Sweden. DLF and its subsidiary DLF Service AB create conditions for a competitive grocery industry by providing businessrelevant knowledge, offering inspiring and stimulating meeting places and running efficient industry systems.
www.dlf.se

Swedish Food and Beverage Retailers Association (SvDH)

The Swedish Food Retailers Federation is the trade association for the grocery trade in Sweden. Member companies include Axfood AB, Bergendahls Food AB, Coop Sverige AB, ICA Sverige AB, Lidl Sverige KB and Livsmedelshandlarna.
The grocery trade is an important part of the entire grocery chain and the Swedish Food Retailers Federation ensures the industry takes active and shared responsibility for competition-neutral issues. Primarily together with DLF Sweden, the Swedish Food Retailers Federation owns a number of companies whose task is to optimize in the grocery industry. It is also a way for the industry to take responsibility for the recycling of packaging materials as well as food safety through increased traceability.
www.svdh.se

Preface

Why is an FMCG Packaging Guide necessary?
The flow of goods and information from producer to consumer has become increasingly complex, which affects those selling and supplying packaged products. Market players are faced with an increasing number of wishes and demands, while simultaneously creating more demands of their own. The FMCG Packaging Guide has been updated and adapted with a new modern design. This guide is intended to provide guidelines for the formulation and design of new packaging or for the adjustment of existing packaging, and is supplemented with tips and advice to ensure packaging is able to withstand handling throughout the entire supply chain without any deterioration at the retail or consumer level.

The main objectives of the packaging:
• To protect and seal the products.
• To carry the brand name.
• To convey information to the consumer.
• To enhance the efficiency of logistics management with bar code labelling in accordance with the GS1 standard.
• To facilitate physical handling and delivery optimisation by following the modular system.

It is important, from both an economic and a durability perspective, that packaging is not only able to withstand handling in traditional warehousing operations, but also that it is suitable for automated warehouses. Producing goods witch, due to their packaging results in waste in warehouses and during transportation is inefficient and has an unnecessary environmental impact. The Packaging Guide has already been adapted to ECR Europe's Blue Book "Shelf-ready Packaging".

The ECR 2012 edition is supplemented by Part II, **Restaurants and Industrial Catering** and part III, **Durable Packaging**. Part III provides guidelines as to how each package must be constructed or customised in order to prevent crushing during transportation and warehouse handling. It includes guidelines on how to test packaging in order to ensure it is able to withstand the physical environ- ment to which it will be exposed. It also includes guidelines on what is required of packaging to ensure that it can withstand handling in an automated process flow. In many respects, packaging in the industrial catering industry is similar to packaging in the FMCG industry. However, there are differences that must be addressed in order to create a compre- hensive common packaging guide. Above all, this concerns the appearance of orderable units and pallet construction, as well as the fact that different names are used to refer to package recipients. The FMCG industry regards the store, or possibly the consumer, as the final destination, while the restau- rant and industrial catering sector uses the term end-user (such as industrial kitchens, restaurants). This is described in part II.

Edition ECR – 2018 contains part IV Recyclable packaging. Part IV contains recommendations on how to increase the recyclability of your packaging. It provides you with a good, simple guide for producing packaging.

Contents

Introduction

Holistic view and consumer focus

The 2012 Packaging Guide highlights the general flow of goods from producer to consumer, the information in this flow, and the types of packaging on which the system is based:
- Consumer packaging
- Outer packaging
- Multi-unit packaging
- Pallets

Taking a broad holistic approach is a key factor in the development of new packaging and the review of existing packaging.

The customer must always be the focus. The customer is the same as the next link in the logistics chain, and the last link in the chain is the consumer. At the same time, all requirements and wishes from producer to final consumer must be weighed in and taken into account in the decisions made.

Packaging should be rational and efficient for transportation and handling. It should be informative and appealing in stores and it should be functional for the consumer. Packaging should protect and preserve the product on its way from producer to consumer. For some products, it may also contribute to extended durability. Packaging is also an important aid to handling that should work with pallets, in roller containers (roller cages, milk cages, rolling racks, etc) and on store shelves.
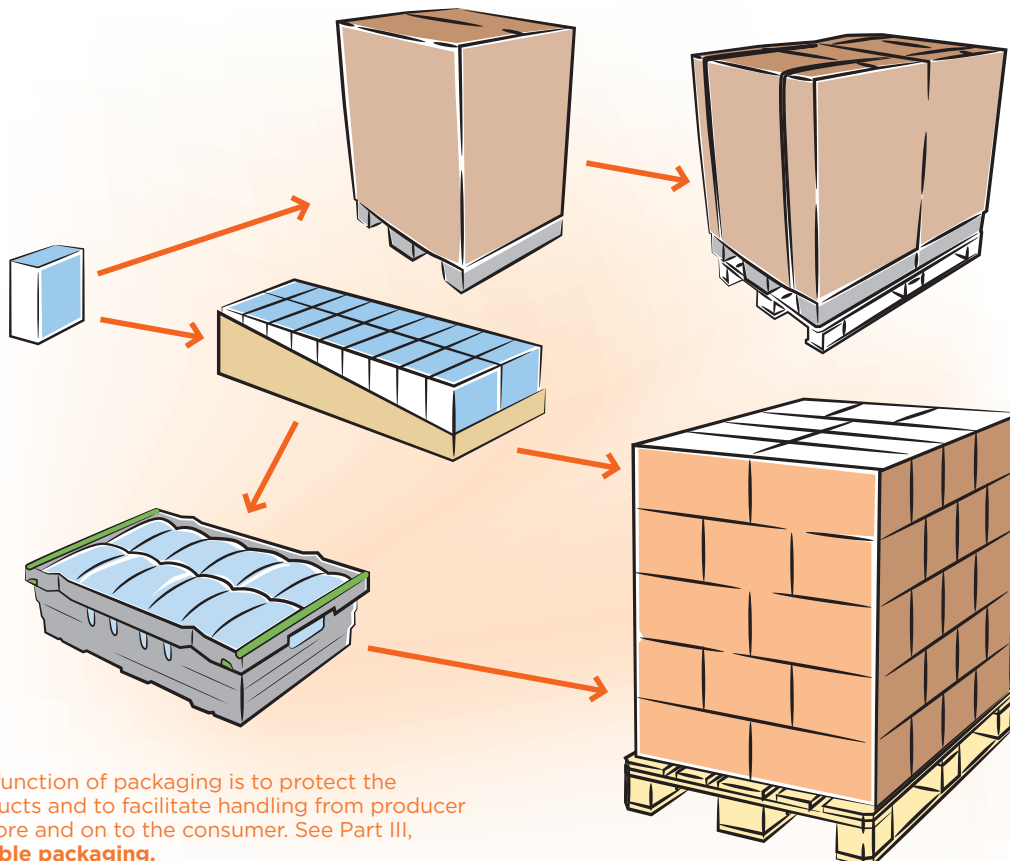
The function of packaging is to protect the products and to facilitate handling from producer to store and on to the consumer. See Part III, **Durable packaging.**

Guidelines

Standards for the flow of goods and information are published by ISO, International Standardisation Organisation and SIS, Swedish Standards Institute (**www.sis.se**), amongst others.

A basic 600x400 mm module has been prepared by SIS in cooperation with the FMCG industry. This module should guide the design of all types of packaging. It will then fit to the pallet, whether it has dimensions of 800x1200 mm or 1000x1200 mm. The latter exists in some European countries.

When developing new packages, there are a variety of factors to consider. Among the most important is that the size is consistent with the different types of packaging. Consumer packages should be designed so that the outer packaging and pallet generate a good degree of filling.

For the flow of information to work, there is a set of rules available from GS1 at **www.gs1.org** (or your national GS1 website). The GS1 item number (GTIN – Global Trade Item Number) and bar code should be on the consumer package and on outer packaging. Full-size pallets (display pallets) and, when appropriate, multi-unit packages should be labelled with GTIN for the top level as well as GTIN for the intermediate level belonging to the multi-unit package; see chapter one, **Item information**.

Pallets should be labelled with GS1 Logistic Labels (Pallet labels). These labels include information about the number of exterior packages and their GTIN. Different functions in the flow of goods and information, such as arrival inspection, can be made more efficient using scanning and/or sending messages via EDI.

There are also recommendations and industry agreements in place for item information **www.gs1.org** (or your national GS1 website), pallet height, etc.

Exception
Under certain circumstances, exceptions to the standard, industry agreements or similar may be justified. An example is where the savings or efficiency gains at any stage exceed the corresponding negative effects at other stages. Agreements may then be reached between the parties involved. Exceptions are negotiated between buyer and seller.

Limitations
The FMCG Packaging Guide addresses different kinds of packaging as a whole, in which consumer packaging is a part of the whole from producer to the store shelf, and store shelf to the checkout. It addresses the function of the packaging, not its environmental impact. The guide does not address consumer packaging from a strict consumer perspective, such as storage and how it is handled in the home.

Remember...

The flow of goods and information includes many stages and there are players at each stage with their own requirements for the packaging. These requirements vary depending on the product and the relevant stage of the chain. Keep in mind that as a producer, you must meet requirements set by all stakeholders in the logistics chain, not just the end consumer in the store. This is to ensure that the handling process is as efficient as possible, without generating waste in the form of time and broken packages.

The requirements of the parties involved may include the following:

The supplier

Consumer packaging and outer packaging should be easy to fill and seal. Packaging should be durable enough to with- stand physical handling in the warehouse and transportation environments. The package should be customised to carry its own weight and withstand double-stacking of pallets.
The package should be labelled in accordance with the GS1 standard. Remember that packaging must be recyclable and that information about this must be printed on the packaging. Inform the consumer how to sort the packaging waste. For more info on how to label your packaging, see: **www.ftiab.se**
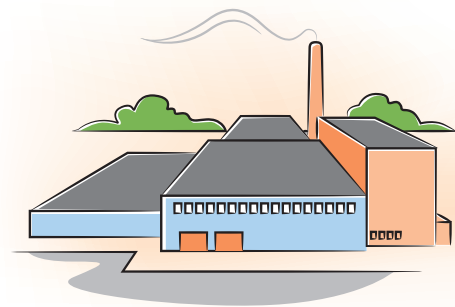
Transportation

Pallet overhang may cause damage to goods and should therefore be avoided (see chapter five, **The Modular System**). Clear labelling of pallets in accordance with the applicable regulations (GS1 standard) and any shipping labels. Two pallets, one on top of the other, with a maximum pallet height of 1250 mm per pallet, including the loading pallet, provide the best degree of filling and therefore lower transport costs and are better for the environment.

The distribution centre

Outer packaging and pallets must be easy to identify, both in plain text and with labelling in accordance with the GS1 standard. The bar code should be printed with clear contrasts so it can be read by a scanner. Various types of packaging should be able to be mixed in a roller container or on a loading pallet, without causing damage to goods. Outer packaging should be module-adapted to give the best degree of filling in the roller container or on the loading pallet and facilitate logistics handling. Remember to design outer packaging with holes punched at the short ends, if possible, to facilitate ergonomic handling. The maximum weight of 15 kg applies to outer packages, which are handled manually in the Swedish FMCG industry. Exceptions may be negotiated between buyer and seller.
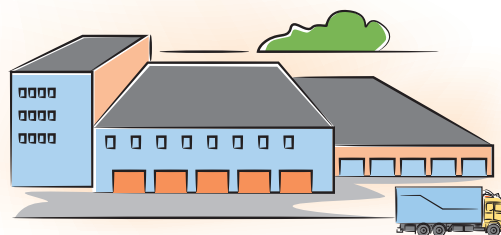
The store

Outer packaging must be labelled in order for the contents to be easily identified. The bar code on the outer packaging as well as the consumer package must be clear enough to be able to be read by a scanner. The outer packaging must be easy to open and display on the store shelf (shelf-ready). When the outer package is a tray, the edge should be sufficiently high, so that the consumer package stands steady once the outer packaging has been opened. Sales promotion information on the consumer package must be clearly visible, even when the package is standing on a tray on the shelf.
The number of consumer packages in an outer package should be adapted to optimise the degree of filling while ensuring that store turnover rates for the item are fast enough.

The Consumer

The information on the package must be legible. The consumer package must be easy to open and use. If possible, the consumer package should be resealable. Also remember to sort the packaging for recycling.
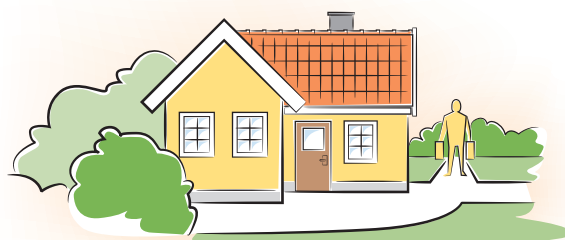
Recyclable packaging

Should also address the fact that as a producer you must take into account the recyclability of the packaging, as well as inform the consumer of how it is to be separated at source.

Packaging as a bearer of information

At each stage of the flow of goods, the packaging plays an important role as a bearer of information. Consumer packages, outer packaging and pallets all convey information. Other terms used are primary, secondary and tertiary packages. The information is presented as item numbers and bar codes, according to GS1's regulations, as well as in plain text. Bar code labelling is one of the requirements for increasing operational efficiency, both internally and between different players.

GTINs and bar codes on outer packaging and pallets are a means of achieving logistical efficiency throughout the distribution chain. For example, it is a way of facilitating arrival inspection and ensuring that the right pallet is received at and dispatched from the ware- house. It ensures that the right outer packages are selected from the pallet and the right amount/weight is invoiced. Moreover, it ensures traceability in the form of expiry dates and batch numbers so that store recalls may be issued, such as in the case of product safety alerts.

The consumer package may carry a list of ingredients, user instructions, expiry date and details about whom the consumer should contact for more product information. The con- sumer package must carry a bar code. This is registered in the store's check-out to provide consumers with information about the price of the product.

Bar code legibility and positioning on consumer packages, outer packaging, and pallets are important. The print must be of such quality that the bar code can be read by a scanner even after the package and the pallet have been handled throughout the distribution chain.

In addition to being used as identification, the information carried by the package may be used for product tracking and origin labelling.

One piece of the jigsaw puzzle in an efficient flow of goods and information is that each package carries item information (formerly VCD, read more in chapter one, **Item information**).

Item information includes data regarding the length, width, height, number of consumer packages in an outer package, number of outer packages on a loading pallet, whether the outer package is a slotted crate or a wrap-around package, etc.
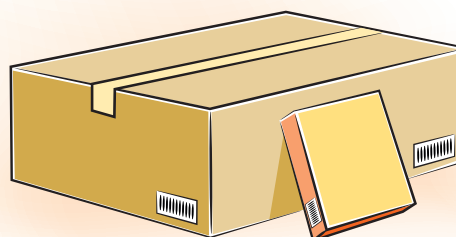
Bar code legibility and positioning are important.

Chapter 1
Item Information

What does item information have to do with packaging?

Item information is important for buyers and suppliers. The buyer needs information about the product to ensure that the order and delivery are correct. The supplier wants to be sure that the product gets a place on the shelf and is given the best possible exposure. The exchange of information in the grocery trade is ongoing and intensive.

GS1 Trade Item Information is a standardised way of exchanging information digitally about items, such as size, weight, item number, brand and shelf-life. GS1 Trade Item Information was developed by the grocery trade over 10 years ago and is now used by all the major buyers in the industry and most of their suppliers. Compliance with the rules for GS1 Trade Item Information ensures that the item information matches the actual item and both parties always have the same information, which is a prerequisite for high data quality. The contents of the item information often come from several different supplier functions, such as the warehouse and sales or marketing department. GS1 Trade Item Information provides a tool for sending all information at the same time and in the same format, even if the information comes from different departments.

How does it work?

For a long time, grocery suppliers in Sweden have sent digital product information (VCD, item information) to trading companies to share and secure basic logistics data for products. Today, the information contains much more than logistics details, for example food and marketing information. This is a requirement for selling the supplier's products in all channels. GS1 Sweden has developed Validoo for digital handling, validation and sharing of information. Validoo helps you, as a supplier, to reach more buyers at the same time with the right information. Validoo contains three services: Validoo Item for validation and sharing of product information, Validoo Q-lab where the quality of digital information is assured by comparing it to the actual product (packaging at consumer and retail level) and Validoo Mediastore which creates and conveys images linked to the product information.

The digital information is sent via Validoo (for validation and quality assurance) to trading companies from a system. The system is often an input system with an online interface, but it can also be a system that is integrated with the supplier's business system. You can read more about this and how to get started with the services at **www.validoo.se.**

Examples of information supplied through Validoo include:
GTIN (Global Trade Item Number), length, width, height, weight of packaging, number of consumer packages in an outer package and number of outer packages on a pallet. Examples of other information that must be provided are packaging type, storage instructions, labels (e.g. KRAV labelling), VAT information, market messages, ingredients and nutritional content. More information about what information can be exchanged can be found in GS1's Guideline for Trade Item Information, the latest version is available here **www.gs1.se.**

Important to keep in mind

✓ Rules relating to the compilation and validation of Item information are set by GS1's user group and based on a global standard.

✓ The services help you to improve the quality of your data. Substandard or incorrect data quality has an impact at many levels: for the Supply Chain, shop administration and also ultimately for the consumer.

Consumer packaging

There are may varieties of consumer packages.

The consumer package must promote the sale of the product by means of an appealing design, in addition to protecting and preserving the product.

Other factors to consider when designing a consumer package are product information, size of the package, and that the package is easy to open and, as far as possible, to reseal.

The external dimensions of the consumer package are important. Along with the outer package, these must be adapted to the modular system; see chapter five, The Modular System. Consideration should be given to the material thickness of the outer package.

The fixtures in the store are another important factor to consider. The fixtures in the store are adapted to the base module of 600x400 mm.

**Other names
for consumer packaging include:**

- Consumer Unit (CU)
- Consumer packaging/consumer package (CoP)
- C-pack
- Primary packaging/package
- Multiple pack
- Multi-pack
- Inner packaging/package

Durable labelling and display

Labelling:
"Consumer package" labelling should include a bar code, developed according to the GS1 standard, and plain text information, such as a list of ingredients. Read more in "Correct labelling" at **www.gs1.se/global/om-gs1-sweden/ publikationer/correct-labelling-part-of-your-product-and-your-brand.pdf**, which was jointly developed by SvDH, DLF and GS1. If the package contains goods that are hazardous to health or the environment, additional special labelling is required. All labelling must be legible throughout the lifetime of the package – that is, at least as long as the specified best-before date.

If the package is on a tray, the print must be clearly visible above the edge of the tray.
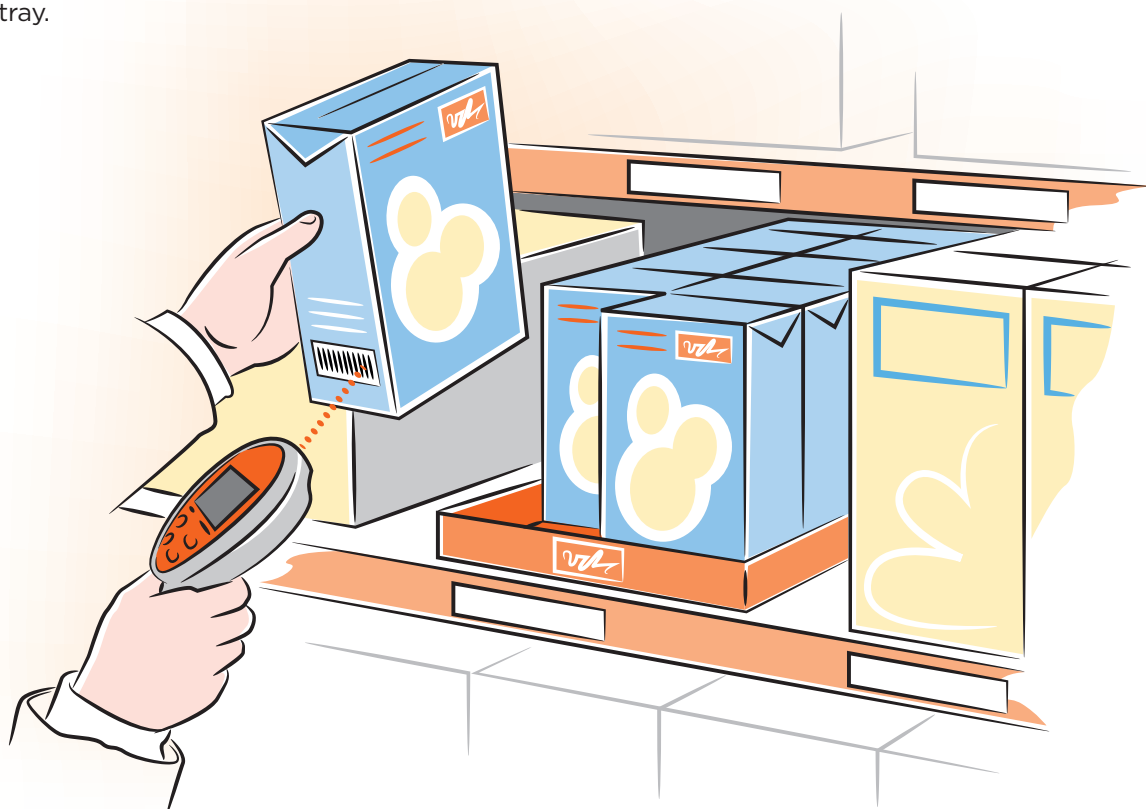
Adaptation to store display:
The edge of the tray must be sufficiently high for the consumer package to stand securely. The tray must have sufficient material thickness in order not to fold when lifted, once the plastic and lid have been removed.

The size of the package must be adapted to the available shelf space for the product group in question.

The bottom surface and height of the consumer package should be adapted to the fixtures and shelf space in the store for the product group in question. Design the consumer packaging and outer packaging so they can be displayed as a unit. It must also be possible to display the consumer package separately. Consumer packages that are to be displayed hanging (speared), must have punched and durable spear holes (Euro-holes).

It must be easy for the consumer to pick the product up from the shelf. Do not over-wrap the product.

Packages in contact with foodstuffs:
When packaging material has direct contact with foodstuffs, a certificate should be drawn up, such as the Normpack Certificate, declaring that the material has been approved for foodstuffs. For more information, see **www.normpack.se or www.li.se/om-li/in-english**.

Store shelf with consumer packages on display.

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Important to keep in mind

✓ The consumer package must promote the sale of the product by means of an appealing design, as well as protecting and preserving the product.

✓ Product information must be given on the package, the size of the package must be taken into account, and the package should be easy to open and, as far as possible, to reseal.

✓ The external dimensions of the consumer package are important. Along with the outer packaging, these must be adapted to the modular system, see chapter five, **The Modular System**. Consideration should be given to the material thickness of outer packaging and to ensuring that a good degree of filling is achieved.

✓ "Consumer package" labelling should include a bar code, developed according to GS1 standard, and plain text information, such as a list of ingredients. Read more in "Correct labelling" developed by SvDH, DLF and GS1, **www.gs1.se/Global/Om-GS1-Sweden/Publikationer/Correct-label-ling- Part-of-your-product-and-your-brand.pdf**. If the package contains goods that are hazardous to health or the environment, additional special labelling is required.

✓ Bar codes and other labels must be legible for at least until the specified best-before date.

✓ The edge of the tray must be sufficiently high in order for the consumer package to stand securely. The tray must have sufficient material thickness in order not to fold when lifted once the plastic and lid have been removed.
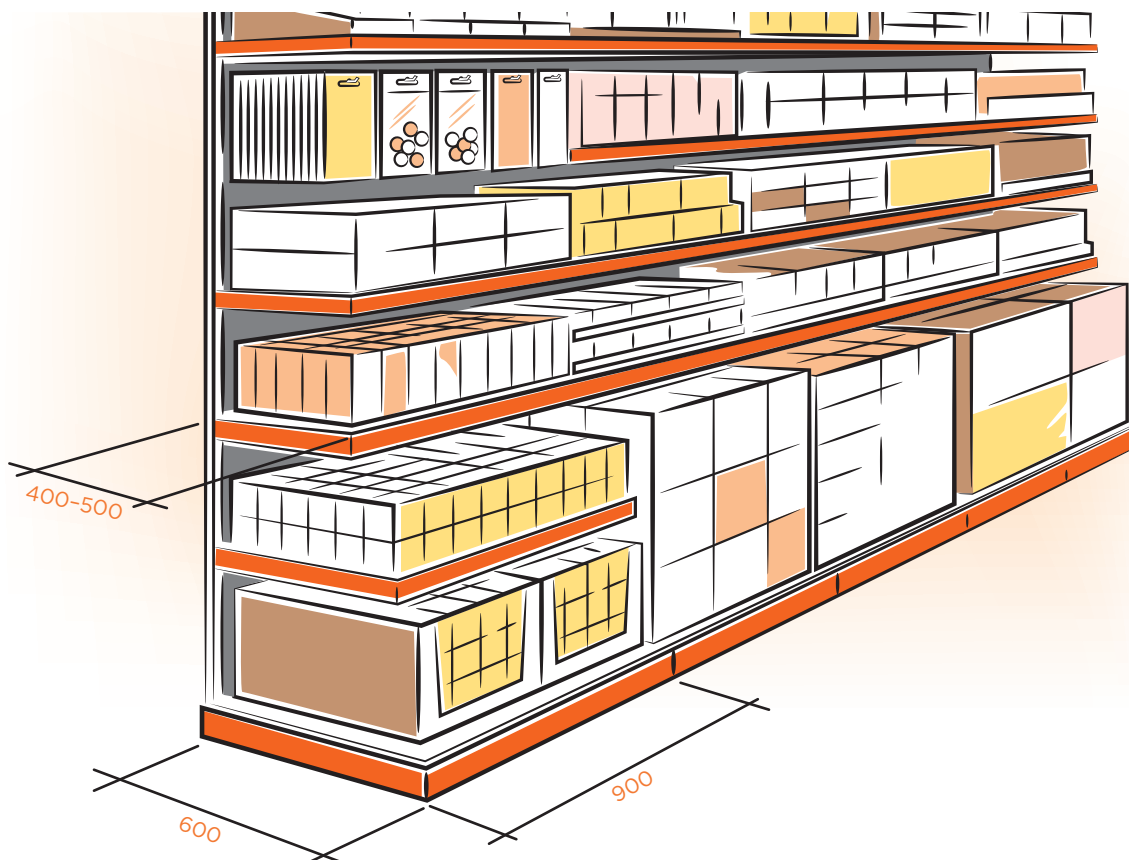
✓ Design the consumer packages and outer packaging so that they can be displayed as a unit. It must also be possible to display the consumer package separately.

✓ Consumer packages that are to be displayed hanging (speared), must have punched and durable spear holes (Euro-holes).

✓ Do not overwrap the product.

✓ When packaging material has direct contact with foodstuffs, a certificate should be drawn up declaring the material has been approved for foodstuffs. For example, the Normpack Certificate. Read more in the "Guide to safe food packaging" developed by the Swedish Food Federation (Li) and Normpack.
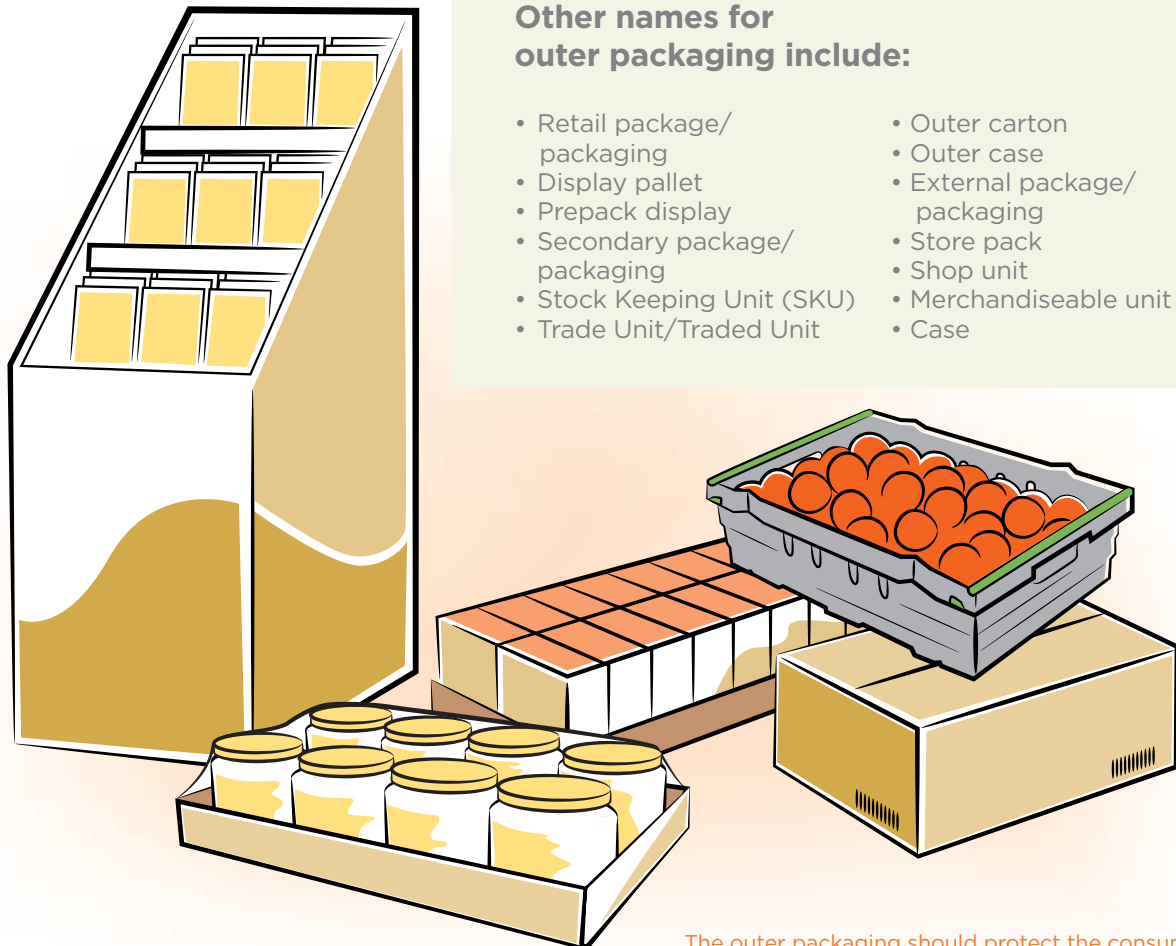
Outer packaging

**Other names for
outer packaging include:**

- Retail package/
  packaging
- Display pallet
- Prepack display
- Secondary package/
  packaging
- Stock Keeping Unit (SKU)
- Trade Unit/Traded Unit

- Outer carton
- Outer case
- External package/
  packaging
- Store pack
- Shop unit
- Merchandiseable unit
- Case

The outer packaging should protect the consumer until; se part III **Durable packaging**.

In many cases, the outer package itself constitutes an orderable unit. Outer packaging is available in many different variations.

The primary role of outer packaging is to protect and hold consumer packages together until they reach the store shelf.

Outer packaging must be designed in a manner that enables easy identification, handling, storage, loading and re-loading on the way from producer to store. There, it should be easy to open and any subsequent handling should be easy.

Pallets that come from producers are usually split at the distribution centre. Goods from other producers are loaded together here. The goods are loaded together in roller containers or on loading pallets.

Shelf-ready packaging

Shelf-ready packaging (SRP) is a term used to describe an outer package containing multiple consumer packages ready for placement on the store shelf. The purpose is to minimise product handling between production and the store shelf or shelf-end display.

Other names for shelf-ready packaging include:

- SRP
- Shelf-ready packaging/package
- RRP
- Ready-to-sell packaging/package
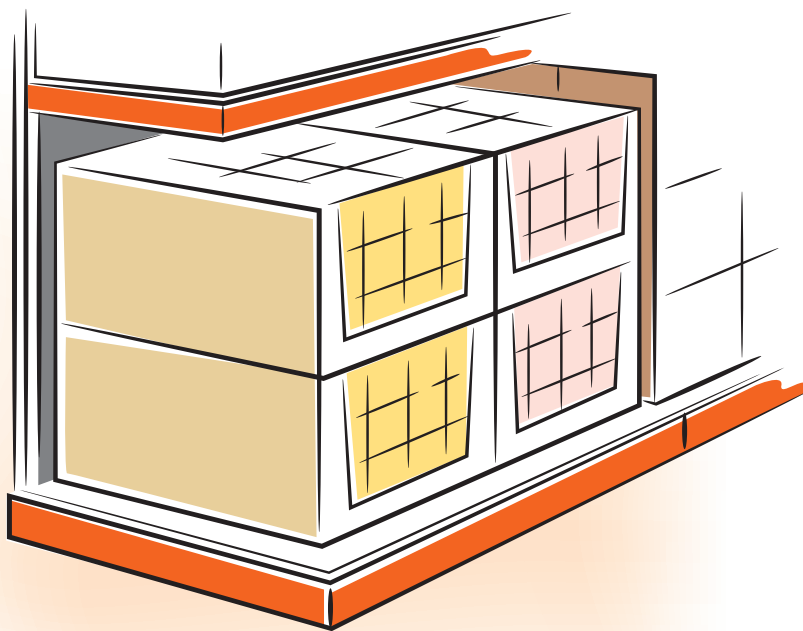
An SRP package that is on the shelf, where the consumer package is visible, and should be easy to pick up.

Shelf-ready packaging should be:

Easy to identify
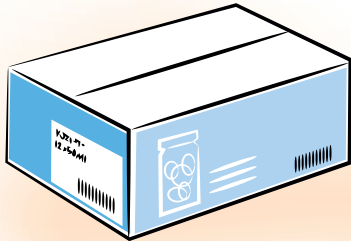
Easy to open
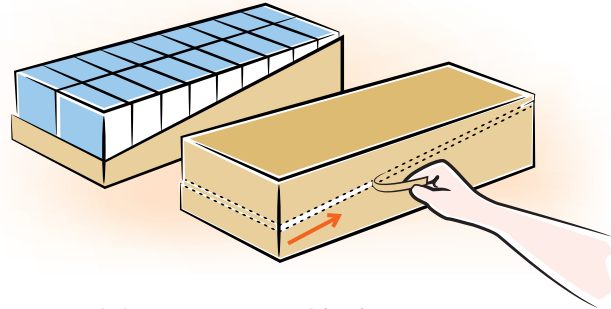
It is important to provide clear instructions for opening.

Easy to display

Stability is important.

Easy to buy

Easy to fold up for disposal.

Subsequent handling should be easy

Shelf-ready packaging includes all types of packaging such as displays, pallets, trays, crates, etc.

Based on guidelines from ECR Europe and in close collaboration with the FMCG industry, ECR Sweden has developed an evaluation form for shelf-ready packaging. The purpose of this tool is to facilitate SRP discussions between parties in the FMCG industry so that where appropriate, the SRP is used effectively throughout the chain. The evaluation form for shelf-ready packaging can be downloaded at **http://ecr-community.org/**

Display units and display pallets

Other types of outer packaging include the display unit and the display pallet. According to GS1, these are regarded as sellable units, i.e. outer packages. Standard pans or trays with products are often used, which are loaded together into a display pallet. In the development of new packages, it is important to build on the existing modular system; see chapter five, **The Modular System**. It is also important that the display unit or the display pallet hold the weight of the products. For more information, see part III, **Durable Packaging**, half-size pallets.
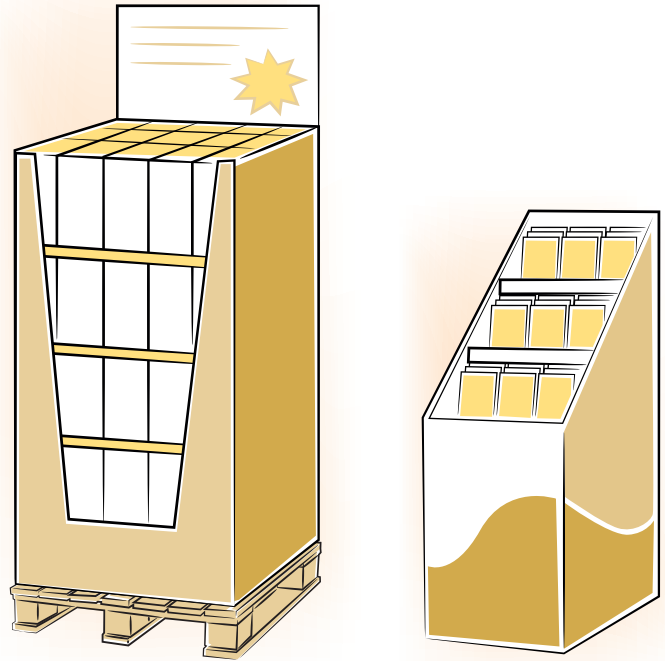
Multi-unit packaging

Multi-unit packages may be used for a number of different outer packages, which may be difficult to stock onto a loading pallet due to their shape. The multi-unit package is often a type of crate with an open top, or a lid that opens easily.

Goods are usually selected at the distribution centre where they are then loaded with other goods ordered by the store. When selecting multi-unit packages, it is therefore not necessary to consider store display.

Disposable multi-unit packages.
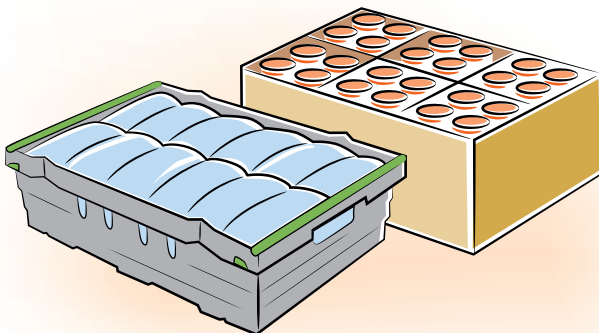
Multi-unit package.
Svenska Retursystem's returnable crate.

Other names for multi-unit packaging include:

- Wholesale packaging/package
- Handling Unit
- Transport packaging/package
- Multi-unit package

Labelling

Information in plain text, GTIN and bar code must be included on outer packaging; see chapter six, **Labelling**. Additional information may include supplier item number, number of consumer packages in the outer package, best-before date and batch number. If the package contains goods that are hazardous to health or the environment, additional special labelling is required.

The multi-unit package does not need to be labelled, as its only purpose is to hold together a number of outer packages. It must not be possible to order or subsequently sell the package as a single unit. However, the multi-unit package requires its own GTIN to enable identification and storage in various databases.

GS1 recommends bar code labelling on at least one side. In cases of one-sided labelling, the principal rule is to apply strict orientation when placing the outer packages on the pallets. This means that packages are placed so that the bar codes are facing in the same direction as one of the two pallet labels; see strict orientation **www.gs1.org** (or your national GS1 website).
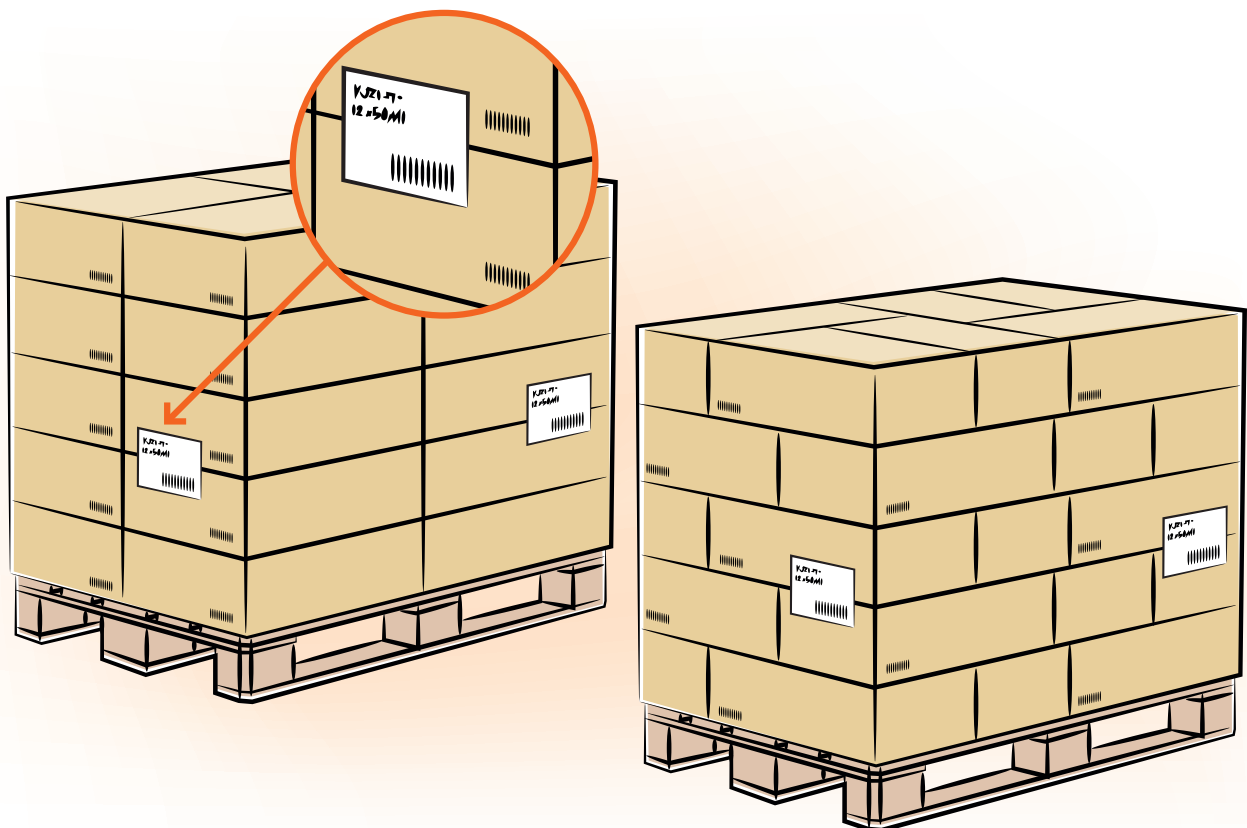
Important to keep in mind

✓ High degree of filling for a more durable outer package; see part III, **Durable packaging.**

✓ Module adaptation for outer packaging according to the dimensions of the pallet and desired height to facilitate mixed loading. See chapter five, **The Modular System.**

✓ The sales rate for the product in the store should also be taken into consideration when determining the size of the outer packages.

✓ Aspects to take into consideration at the design stage include whether outer packages, pans or trays will be included in the display pallet, what it should look like and how it should be handled.

✓ A maximum weight of 15 kg applies to outer packages, unless the parties have agreed otherwise.

✓ Identification throughout the supply chain. In addition to what is addressed in chapter six, **Labelling**, product names, size/numbers and/or item numbers can facilitate identification of outer packages in the store and warehouse.

✓ It is preferable for labels on RRP to be located on the part of the package which is removed when opening, or which is not visible to the consumer.

✓ Outer packaging should be easy to open without the use of a knife. Any shrink-wrap used must be easy to remove.

✓ Provide clear opening instructions for SRP, ideally with illustrations and an effective opening device such as rip-tape or perforations that do not damage the package decoration or labelling.

✓ A stable tray that does not fold during handling once the plastic or lid has been removed, and consumer packages must stand steady when displayed.

✓ The SRP package and the Consumer Package must look attractive together, consumer information must be visible and the Consumer Package must be easy to pick up.

✓ Facilitate subsequent handling of the packaging by adjusting the amount of material according to each product's needs so it can be easily folded, sorted and recycled.

✓ Packaging material for all packages – consumer packages, outer packages, multi-unit packages (if any) and pallets – must be selected so that the combined environmental impact is as small as possible.

Pallets

Load carriers are necessary to handle, transport and store outer packages in the supply chain. When outer packages are placed on the load carrier, the name Pallet is used.

The following types of load carriers are approved by the Swedish FMCG industry and industrial catering industry.

Full-size pallets (load carrier)

800x1200 mm
• Grey returnable pallet from Svenska Retursystem.

• EURO pallets – (SS-EN 13698-1).

• CHEP pallets.

• LPR pallets.

All can handle a load of 1000 kg, which is the weight limit for most pallet racks.

Other common names for pallets include:

• Unit load
• Dispatch Unit
• Tertiary package
• Loading pallet
• Load carrier
• Transport pallet

Definition of pallet: Loading pallet with goods.

EURO full-size pallet

Full-size pallet from Svenska Retursystem

LPR full-size pallet

CHEP full-size pallet
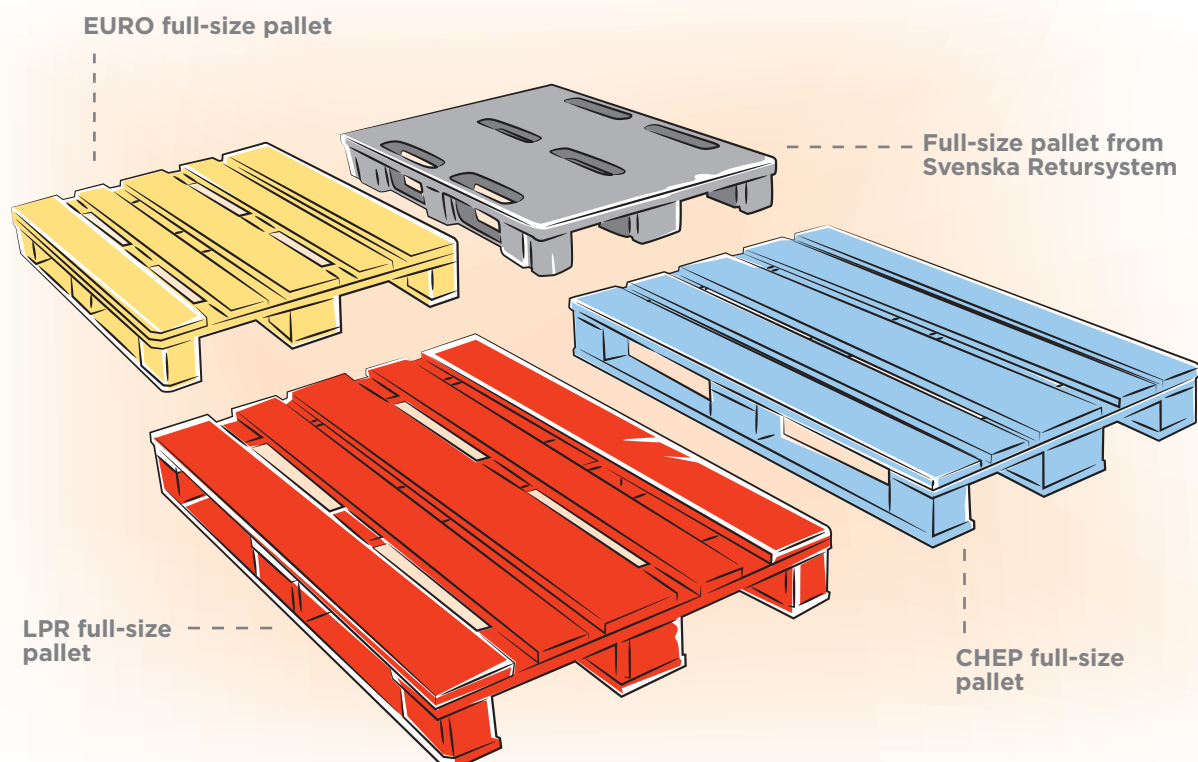
Half-size pallets (load carriers)

600x800 mm

- Returnable half-size pallet from Svenska Retursystem.
- CHEP half-size pallet.
- LPR half-size pallet.
- Disposable half-size pallet (SS842004).

Ensure that the height of the pallet tunnel is 100 mm +/- 5mm. If it is lower, not all types of forklifts will be able to get in under the pallet.

- Flex pallet: 2x(400x600 mm), see image. The flex pallet may be separated into two retail-ready display units. This divisibility makes it possible to create a mixed pallet for two different displays, which is great for shops that cannot order, for example, half-size pallets of an unmixed product. A retail-ready display greatly eases work in the store.

Half-size pallets and flex pallets are handled at the logistics stage as one unit, all the way to the store.

Flex pallet
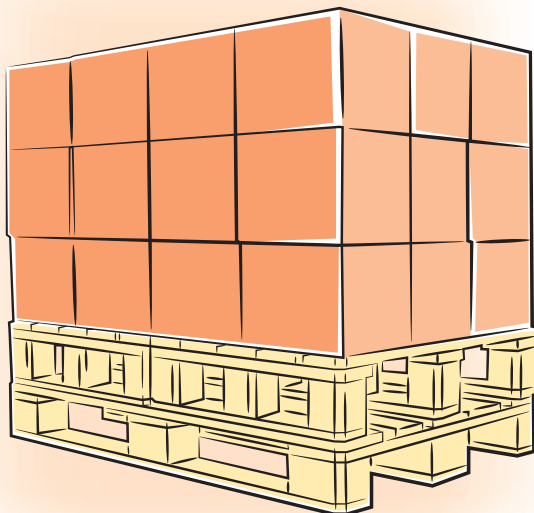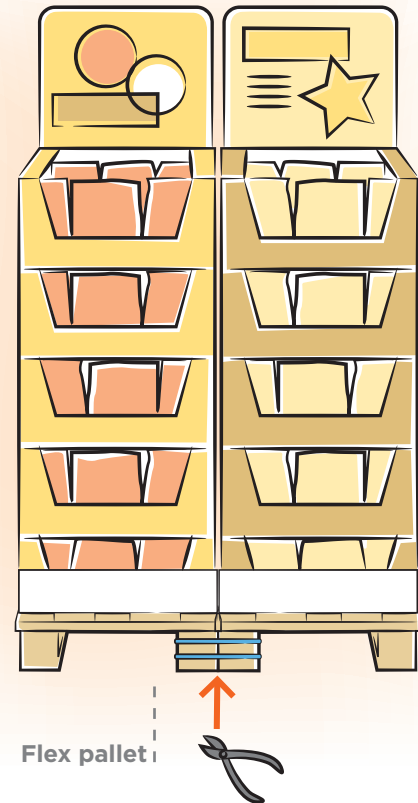
The height of the half-size pallet including the layer pallet at the bottom, maximum 1250 mm
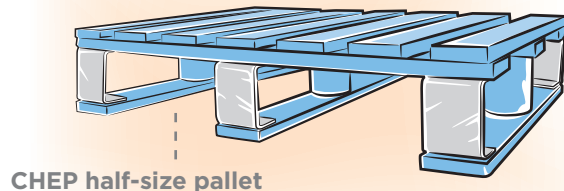
CHEP half-size pallet

Half-size pallet from Svenska Retursystem

LPR half-size pallet

Wooden half-size pallet

23

Three different ways of loading the 800x1200 mm pallet

A loading pallet loaded with packages – may be created as:
• Unmixed full-size pallet.
• Layer pallet.
• Mixed pallet.

Unmixed full-size pallet is the equivalent of the basic item information configuration (formerly VCD) and is loaded with the same item number on all outer packages. This is the most common kind of pallet.

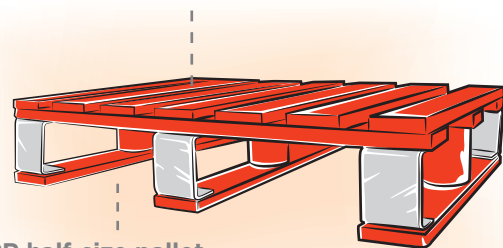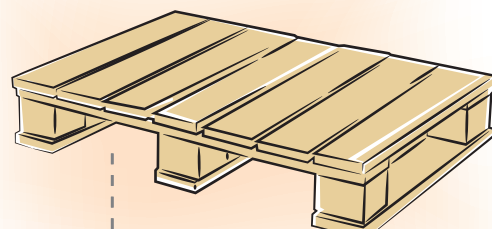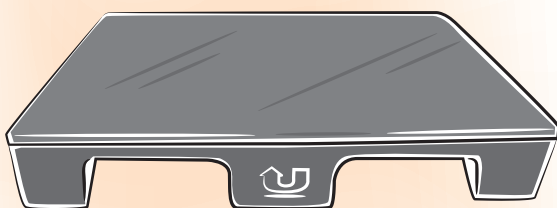**The layer pallet** is a split unmixed full-size pallet, i.e. a loading pallet, which is loaded with one or more layers with the same item number on the outer packages. Several different items may also be stacked on top of one another to create a layer pallet; what is important is that there is always a load carrier between the layers of various items (see image). Just as for other pallets, the layer pallet should be labelled in accordance with the GS1 standard. And where every pallet must have two identical labels and be placed on its right-hand long side and left short side to facilitate reading by the recipient. The pallet labels must be placed inside the plastic wrapping or on the outside of the plastic wrapping if each layer pallet is separately wrapped. (See page 28 on how to build a pallet.)
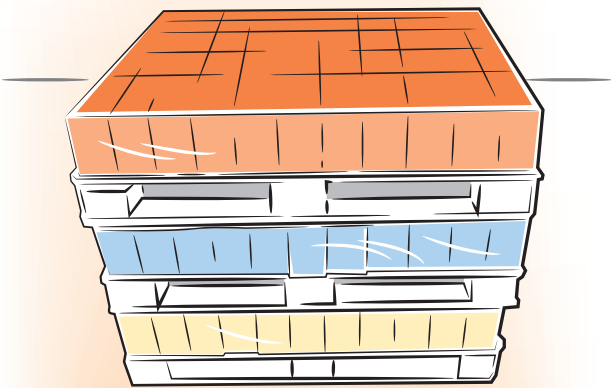
Example of unmixed layer pallet.

The mixed pallet consists of a loading pallet loaded with outer packages with different item numbers, where no one item makes up an entire layer. This type of pallet requires manual sorting when received and should be avoided. For more efficient delivery, it may be advantageous to put the various items on their own load carriers and double-stack on top of an unmixed full-size pallet. The recommendation for mixed pallets is to clearly label the pallet "Mixed pallet" and place the products' pallet labels so that they are clearly visible in an envelope or a plastic sleeve on the pallet.

Replace, hire or invoice loading pallet?

Load carriers that are not disposable are handled through one of the following systems.

Returnable pallets from Svenska Retursystem
Svenska Retursystem offers grey full pallets for rent and black half pallets are covered by a deposit system. Grey full pallets are registered and administered on Svenska Retursystem's web portal. The load carrier does not need to be inspected and no pallet exchange or pallet transfer system is required (see EURO pallets below). Returnable pallets should not be labelled. Find out more at http://**www.svenskaretursystem.se**

CHEP and LPR pallets
Characteristic blue and red load carriers are available at a cost. The cost is either included in the price of the goods or it is invoiced separately. The load carrier does not need to be inspected or exchanged (see EURO pallets below). The load carrier is hired from CHEP or LPR for the amount of time you require from the factory until it is returned to one of CHEP's or LPR's depots. Find out more at https://**www.chep.com** and http://**www.lpr.eu**

EURO pallet
(standard SS-En 13698-1)

The EURO pallet may be handled in various ways among sellers, haulage companies and buyers. It is up to the parties to agree on this.

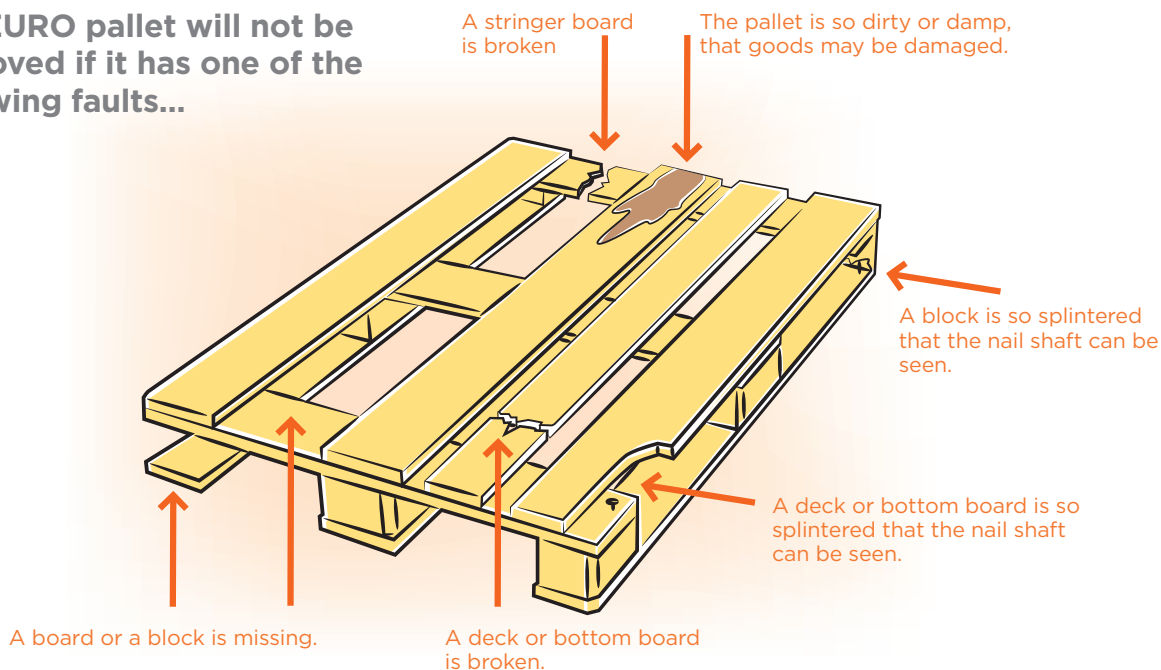The three most common ways of handling a EURO pallet are:

PÖS   For a cost, the pallet transfer system (PÖS) regulates the exchange of approved EURO pallets via accounts between connected members. That is, both sender and recipient must be connected to the respective adminis- trator systems. System administrators in Sweden are Schenker, DHL, Green Cargo and Bring/Frigoscandia. If any related debts in EURO pallets are not settled within the specified period, EURO pallets will be invoiced. Since not all businesses and haulage companies operating in Sweden are members of PÖS, and do not want to regulate EURO pallets by invoice or pallet exchange (see below), there are arrangements under which an account is kept for settling balances between two or more parties.

Pallet exchange   The haulage company signs for an amount equivalent to approved EURO pallets against pallets delivered. This occurs in relation to or in close connection with delivery against pallet receipt.

Invoice   EURO pallets that are imported/brought into Sweden are often invoiced to the recipient, either directly or via the price of the product. At the time of writing 2012, it is not possible to settle with load carriers via PÖS for countries outside of Sweden. As pallet exchanges across Swedish borders are difficult for haulage companies, it is often the load carriers who are invoiced.

As all handling of the EURO pallet above is based on approved pallets, disputes may arise over EURO pallets, since to a certain extent the concept of "approved" is a judgment call. Therefore, it is important to establish how the EURO pallet is to be handled and regulated before entering an agreement. This applies both to business agreements between buyers and sellers, and to agreements with haulage companies.

Approved EURO pallets

For the EURO pallet to be classified as approved, it should be manufactured in accordance with the UIC Code 435-2, Swedish standard (SS-EN 13698-1) or the equivalent national standard. Find out more at https://**www.dnvgl.se** and **www.sis.se**. A link to the rules for sorting can be found at https://**www.dnvgl.se/Images/Pallplansch%202010-11-01_tcm37-91765.pdf**

The EURO pallet will not be approved if it has one of the following faults...

A stringer board is broken

The pallet is so dirty or damp, that goods may be damaged.

A block is so splintered that the nail shaft can be seen.

A deck or bottom board is so splintered that the nail shaft can be seen.

A board or a block is missing.

A deck or bottom board is broken.

Labelling of approved EURO pallets

The EURO pallet is always labelled on the three blocks on each of the long sides.
- The left block with the respective country's railway administration sign.
- The middle block with the manufacturer or standardised labelling (Nordic region).
- The right block is labelled EUR.

For protection against vermin, the EURO pallet may also be labelled IPPC. This means that the wood in the pallet has been heat treated or fumigated in accordance with ISPM 15. An IPPC label looks like this:

AB–123 is an example of an official registration number, AB being the country code.

Logo

I
P
P
C

AB–123

HT or
MB
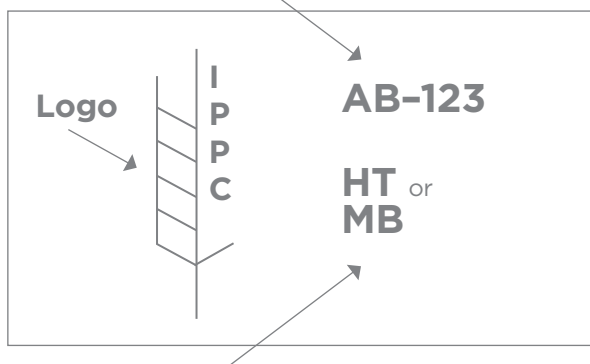
Code for treatment
HT   heat treatment
MB   fumigation with methyl bromide

For export, each country's specific requirements for IPPC labelling apply. Check with the country's equivalent of the Swedish Board of Agriculture.

For transportation within the EU, IPPC labelling is still not a requirement (2012), but investigation is in progress to introduce the mandatory IPPC requirements within the EU.

Exceptions
Since October 2008, IPPC-treated pallets have been a requirement for all imports from Portugal.

Find out more at
www.jordbruksverket.se
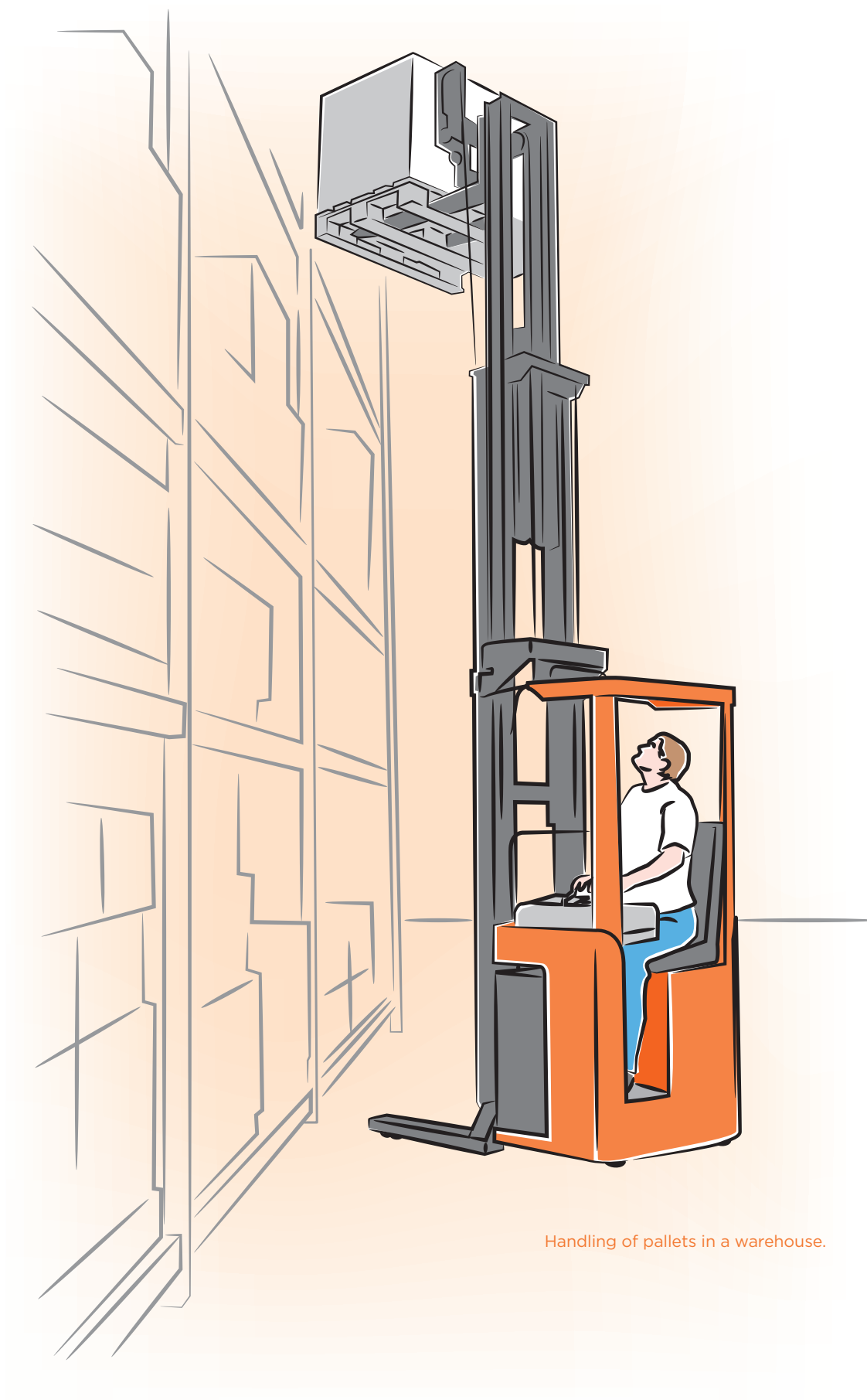
Handling of pallets in a warehouse.

How to build a pallet

- Each layer must contain the same number of outer packages (with the exception of mixed pallets). The finished pallet must be stable, stackable and easy to handle; read more in Part III **Durable packaging**.

- The total height including the loading pallet must not exceed 1250 mm. For transportation and distribution purposes, the pallet should be built as close to the maximum height as possible. This mak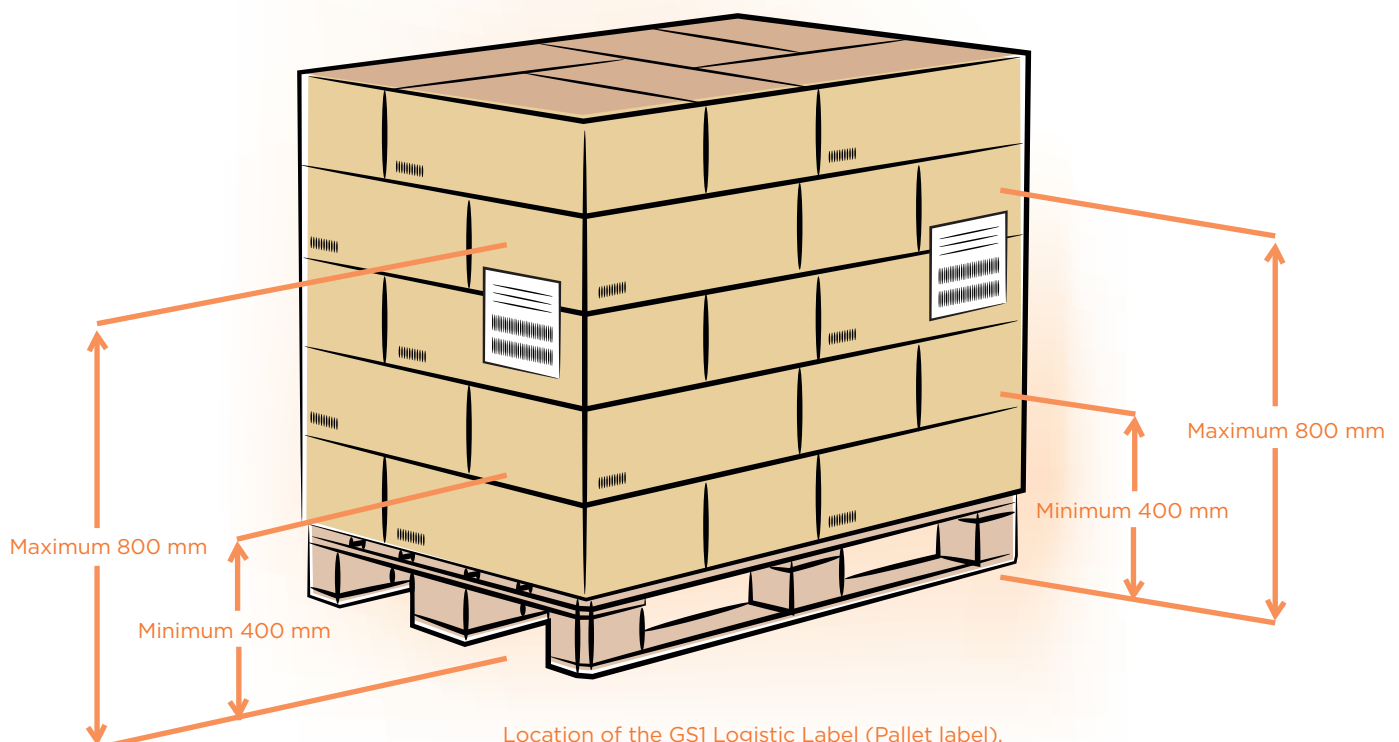es it possible to make use of the maximum internal loading height of the goods vehicle. The pallet shelves in most warehouses are adapted to the standard height of 1250 mm.

- The pallet should always be labelled with two GS1 Logistic Labels (pallet labels). There should be two identical labels, including bar codes and plain text information, placed as shown in the image. Read more about GS1 Logistic Labels (pallet labels) in chapter six, **Labelling**.

- When transporting with a third party, a shipping label should be used to keep track of the pallet while in transit and to meet the requirements of the logistics process, such as the tracking of goods. The label includes addresses, haulage company information and SSCC (Serial Shipping Container Code, GS1 case number). If a shipping label is used in conjunction with a pallet label, the same SSCC must always be used. Read more about shipping labels in chapter six, **Labelling**. Shipping labels should always be applied to the outside of the plastic.

- If the pallet is wrapped in shrink-wrap or stretch-wrap, it must not be so tightly wrapped that the package becomes deformed. The same applies to pallets secured with transport straps.

- Pallets that are handled in automated process flows must be wrapped in plastic so that the pallet tunnels are free from plastic. Remember that the degree of automation increases every year.

- If adhesive tape is used around the pallet, there is a considerable risk that labelling and decoration on outer packaging will be damaged when the tape is removed.

- If liners are needed to make the pallet stable, you should ensure that there is not a liner in between each layer of the pallet, if this is not necessary. The liners should be perforated so that they can easily be torn off as the pallet is picked.


Maximum 800 mm

Minimum 400 mm

Maximum 800 mm

Minimum 400 mm

Location of the GS1 Logistic Label (Pallet label).

Important to keep in mind

✓ Use a pallet approved by the Swedish FMCG and industrial catering industries.

✓ Ensure that the loading pallet has the right labelling and appearance.

✓ Build the pallet with the same amount of outer packages per layer.

✓ A pallet made up of packages should be stable and easy to handle. Always construct the pallet as near as possible to a height of 1250 mm.

✓ Ensure that the load lashing is adapted so that no products are damaged.

✓ The pallet must not exceed 1000 kg, including the loading pallet.

✓ The pallet must be labelled with a standardised pallet label in accordance with GS1 Logistic Label.

✓ The labelling should be of such quality that it is legible until the pallet is broken up.

✓ Supporting documents for the item information (formerly VCD) must always be sent in case modifications are made to the number of outer packages, layers or load carrier type.

✓ More and more pallets are handled in automatic process flows, which require that the plastic wrapping of the pallets does not cover pallet tunnels.
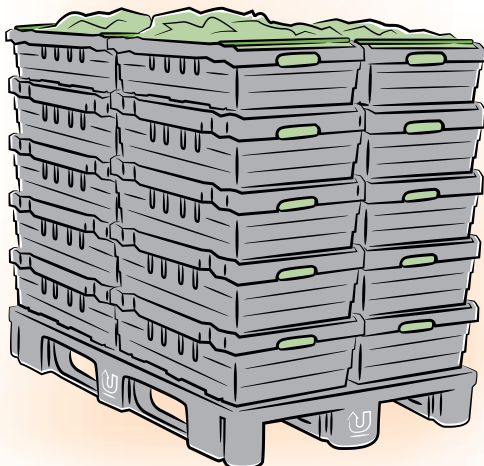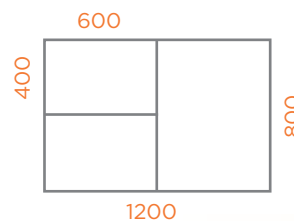
The Modular System

An efficient supply chain is based on modules

400–500

600

900
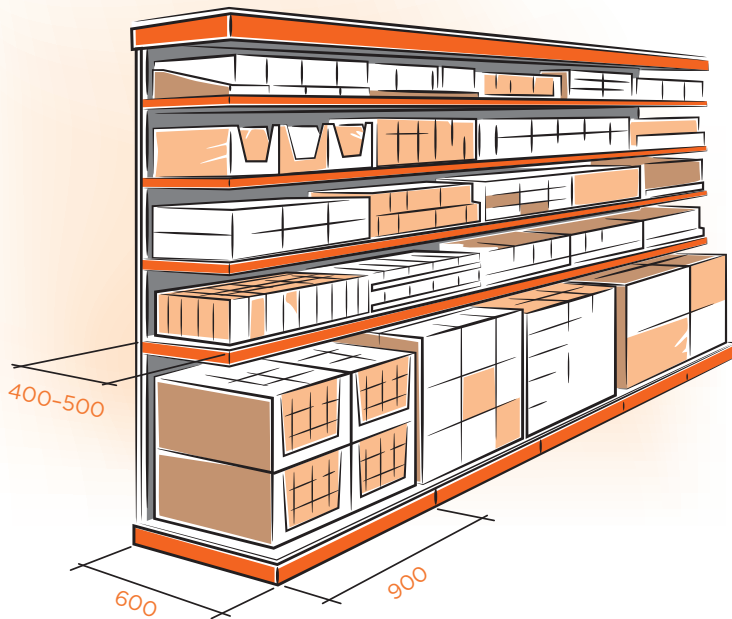
To make effective use of production equipment, transportation and warehousing resources, store systems etc, it is important to adapt all units to the 600x400 mm modular system. This applies to consumer packages as well as to outer and multi-unit packages. The modular system was developed by SIS in collaboration with the FMCG industry. This measurement standard is suitable for both 800x1200 mm and 1000x1200 mm loading pallets. The latter are used in some European countries. For roller containers, the internal dimensions of 800x660 mm apply.

600
400
800
1200

Module-adapted outer packages (traditional retail containers as well as returnable crates, plastic trays, etc.) on pallets in accordance with the modular system.
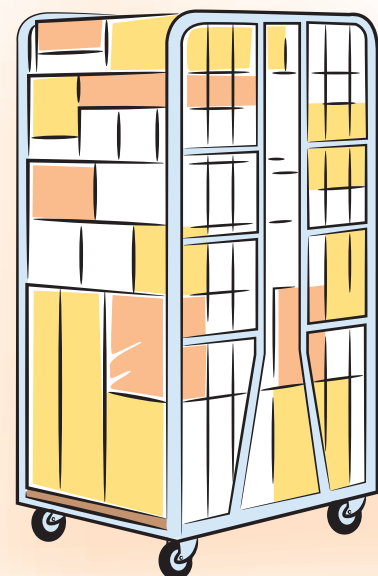
Module-adapted outer packages in roller containers produce a minimum amount of air contact during transportation.

Basic modules

Several ideal modules are created on the basis of 600x400 mm base module. When developing consumer packages and outer packages, it is important to make use of these ideal modules. Keep in mind that the external dimensions of the consumer package should fit the inner dimensions of the outer package. Therefore, it is important to plan for the thickness of the package. The packaging material must be correctly adapted, neither too thick nor too thin for handling a normal load during transport, storage and handling.

600x400	300x400	200x400	150x400	120x400	300x200	200x200
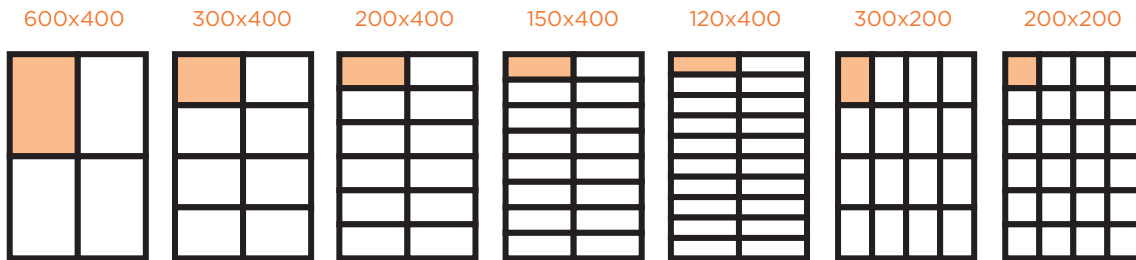
Examples of ideal modules used in the FMCG industry.
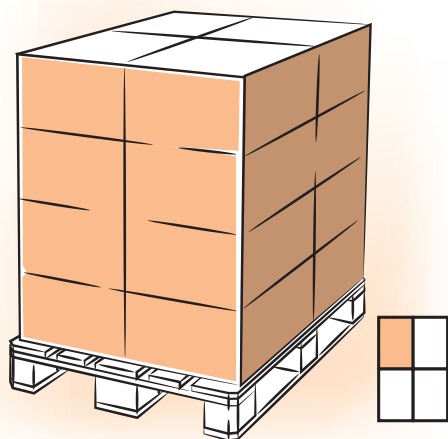
Base module 600x400
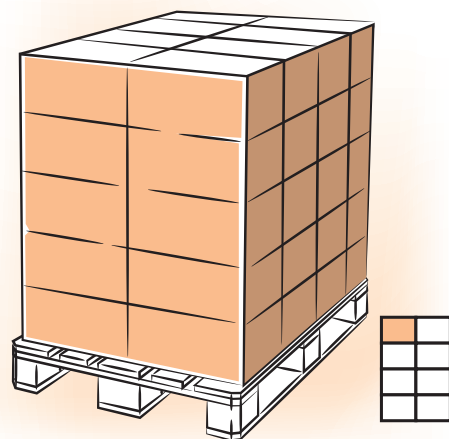
Base module 300x400
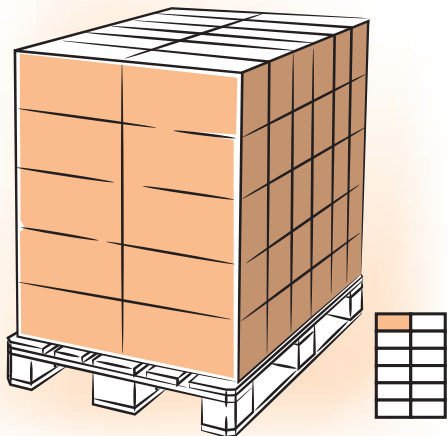
Base module 200x400
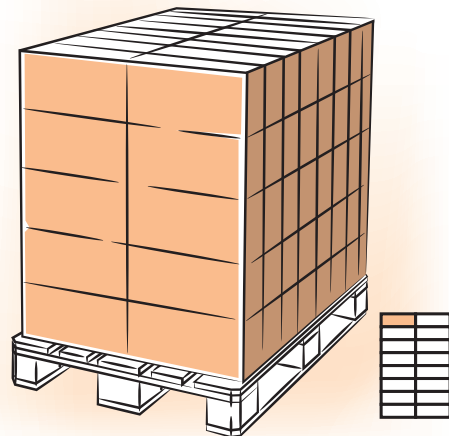
Base module 150x400

There are good alternatives that are not included in the modular system
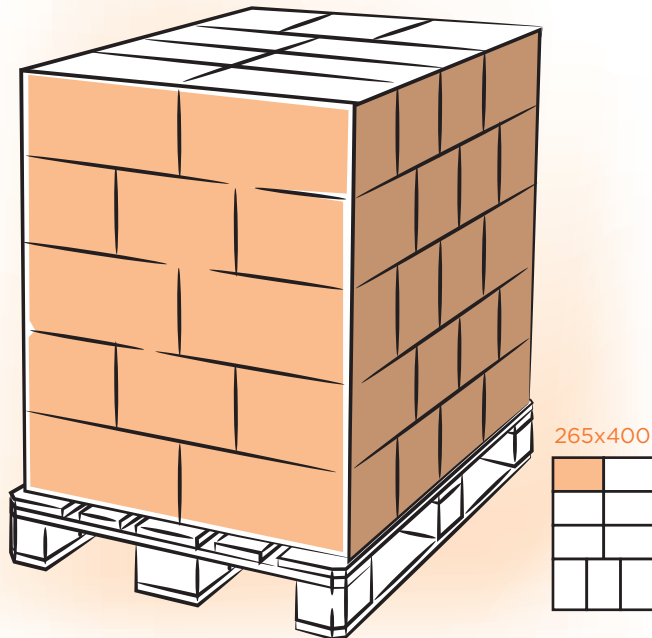
There are various dimensions which are perfect from a transportation and logistics point of view and which give a good degree of filling on pallets and in roller containers. An example of such dimensions is 265x400 mm. With these dimensions, the layer of the pallet is interlocked and a stable pallet with a very good degree of filling is produced even though these dimensions are not included in the modular system.

265x400

Tower stack of small modules

Pallets that are stacked up as towers with module dimensions of 150x400 mm or lower, require liners to stabilise the pallet. The alternative is to lock the layer with a pallet pattern, if possible, with the same degree of filling.
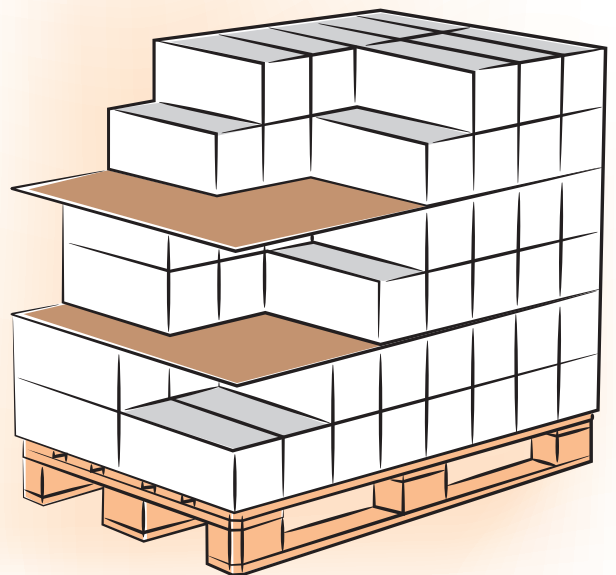
Svenska Retursystem modules

Returnable crates from Svenska Retursystem are good types of modules that in many cases represent suitable alternatives to traditional outer packages. These modules have great advantages over traditional retail packages; for example, they cause less crushing in the supply chain and are a good environmental alternative thanks to their re-usability. The returnable crates also render logistics handling more efficient because crates may be handled in an automated process flow. For more information, see **www.retursystem.se/en**.

600x400x194 mm   600x400x167 mm   600x400x106 mm

400x300x193 mm   400x300x148 mm   400x300x(50/80) mm

Svenska Retursystem provides six different modules that are used in the FMCG industry.

Important to keep in mind

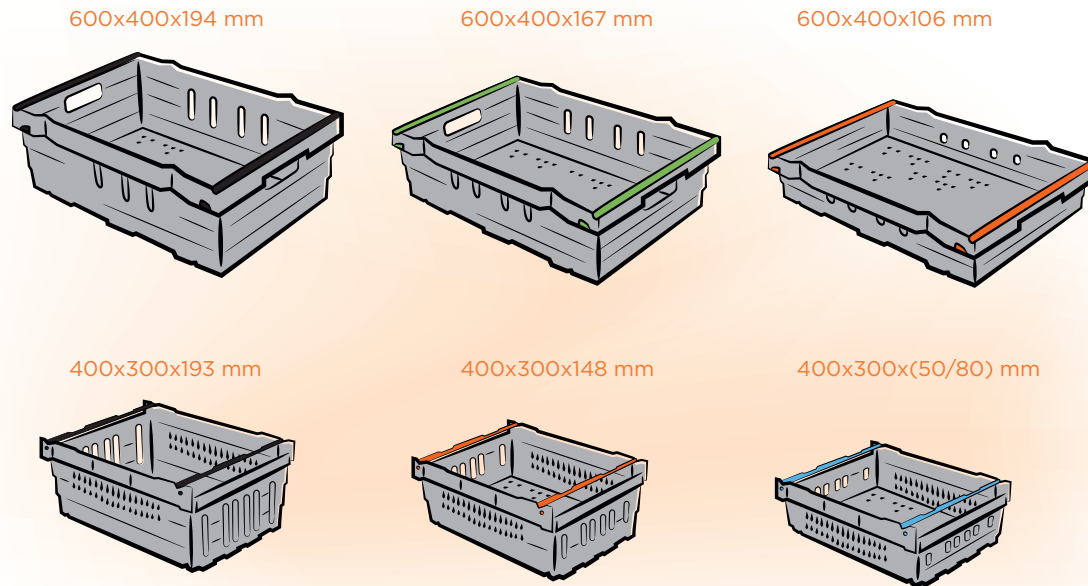✓ Adapt the outer packages to the dimensions of the loading pallet. This is most easily done by reducing the dimensions of the outer packages by 5–10 mm per package. In practice, this means that an outer package in accordance with the 600x400 mm base module should have external dimensions of 590x390 mm. The material thickness added to the outer package must not be disregarded.

✓ Adapt the consumer package to the inner dimensions of the outer package to obtain the highest possible degree of filling. Calculations must take into account the thickness of the outer package.

✓ Returnable crates are an environmentally friendly alternative that reduce crushing and handling problems in the supply chain while being easy to automate.

✓ Always test pack before establishing the final dimensions. Use liners for pallets stacked as towers with small modules.

✓ Note that the module dimensions of 120x400 mm are not adapted for an auto-mated process flow.

✓ Keep in mind that other dimensions may work well as modules for pallets and outer packages.

✓ When labelling returnable crates, the labels used must be approved by Svenska Retursystem to facilitate their removal and cleaning of the returnable crates. Labels must be attached to the uneven surface of the returnable crate. Find out more at **www.svenskaretursystem.se**

Labelling

GTIN and bar codes

GS1 item number (GTIN) and bar code labelling must be used for the consumer package, outer packaging and pallet. For multi-unit packages, only GTIN applies.

In Sweden, registration and coordination is managed by the GS1 system of GS1 Sweden. You can find more information regarding access to the GS1 system at **www.gs1.org** (or your national GS1 website).

GTIN (Global Trade Item Number) is used for numbering packages and depending on the area of use, one of the following GTINs should be used; GTIN-13, GTIN-8, GTIN-14 or GTIN-12. The number forms a basis for orders, warehouse accounting and statistics. Therefore, it is a requirement for all packages to be assigned a GTIN.

GTINs are international, which means that the same number should be used regardless of the country in which the item is to be sold. The item number is divided into three parts. GS1 company prefix, item number and a final control digit (K). GTIN 14 starts with an LV- code, a number between 1–8, where LV is the abbreviation for logistical variant. Select a number between 1–8 (LV code) for placement in front of GTIN-13 to create the GTIN-14. Please note that the item directory should always include 14 digits (aligned to the right).

GTIN-13

GTIN-13 contains 13 digits. Numbering of the item normally takes place at the facilities of the producer, who orders a GS1 company prefix representing the GS1 for the country in which the organisation is located.

When numbering and applying bar codes to items of varying weights, it is also a require- ment to order a GS1 Variable weight prefix.

This prefix is national and intended for products with varying weights. GS1 Variable weight prefix may only be used on the consumer package.

Position	14	13	12	11	10	9	8	7	6	5	4	3	2	1(K)
GTin-13	0	7	3	5	0	0	0	0	0	0	1	2	3	5
GTin-8	0	0	0	0	0	0	7	3	0	0	1	1	1	9
GTin-14	1	7	3	5	0	0	0	0	0	0	1	2	3	2
GTin-12	0	0	0	1	2	3	4	5	6	7	1	2	3	4

Numbering of packages may be conducted in accordance with four different structures.

GTIN-8

GTIN-8 is used for packages on which the space for a GTIN-13 is limited. GTIN-8 includes eight digits and may only be used on consumer packages. 10 items at the most may be numbered with GTIN-8.

GTIN-14

GTIN-14 cannot be read at the store checkout and is therefore only used for numbe- ring outer packages and pallets. GTIN-14 can be read at the pharmacy's checkout from 9 February 2019 at the latest, when packaging containing prescription drugs will have a barcode with GS1 Datamatrix. Pharmaceutical packaging will have a GTIN and serial number (i.e. serialised item number) which means that each package is a unique product. When the barcode is read at the checkout, the store system will read the GTIN and serial number and look up a register to see if the package is genuine or fake.

• The LV code can take be any number between 1–8 on unit goods.
• The LV code 9 signifies that it is an item with varying weight.

Choosing the numbering principle

The consumer package is numbered with either GTIN-13 or GTIN-8. The outer packages and pallets are numbered with either GTIN-13 or GTIN-14. For more information on the numbering of weight products **www.gs1.org** (or your national GS1 website).

Example 1:
**Numbering with GTIN-13**

Consumer package: 73 5000000 001 6
Outer package: 73 5000000 002 3
Pallet: 73 5000000 003 0

Example 2:
Numbering with GTIN-13 or GTIN-14

| |
|---|
| Consumer package: 73 5000000 001 6 |
| Outer package: 1 73 5000000 001 1 |
| Pallet: 2 73 5000000 001 0 |

Bar codes

The EAN-13 bar code may only include GTIN. It has four different line widths. Therefore, high- quality printing is required for it to be legible.
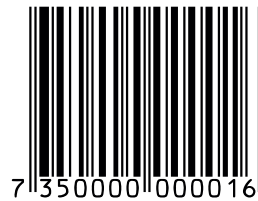
The EAN-13 bar code is the most commonly used on consumer packages.

The ITF-14 bar code may only include GTIN. It has two line widths. This makes it readable with a scanner, even if it is printed or written in ink jet, for example, directly on corrugated cardboard.

17350000000013
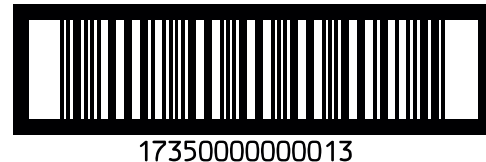
In most cases, the ITF-14 bar code has two line widths and a frame. It is used for outer packaging.

The GS1-128 bar code can include information additional to one GTIN. Date, as well as best- before or packing date, data for traceability such as batch number or serial number and, if appli- cable, weight data.

GS1-128 requires the same high quality of printing as EAN-13.

(01) 1 7350053 85001 6 (15) 171116 (10) 12345

The bar code GS1-128 makes it possible to enter both GTIN and other information.

Two-dimensional barcodes

The use of two-dimensional barcodes is increasing and it has already been decided that prescription drugs will be labelled which will be implemented in 2019. More product areas will start using two-dimensional barcodes in future. GS1 Datamatrix and GS1 QR can contain more information on a smaller surface and are read by camera-based scanner equipment.

Two-dimensional barcodes can contain a larger amount of information which provides traceability and authenticity, as well as giving the consumer more information about the product.

(01) 1 7350053 85001 6 (15) 171116 (10) 12345

(01) 1 7350053 85001 6 (15) 171116 (10) 12345

Example 1:

Numbering with GTIN-13	Bar code alternatives
Consumer package: 73 5000000 001 6	EAN-13
Outer package: 73 5000000 002 3/073 5000000 002 3	EAN-13, ITF-14, GS1-128

Example 2:

Numbering with GTIN-13 or GTIN-14	Bar code alternatives
Consumer package: 73 5000000 001 6	EAN-13
Outer package: 1 73 5 000000 001 1	ITF-14, GS1-128

Choice of bar code

The consumer package should be labelled with either bar code EAN-13 or EAN-8. These bar codes can be read at store checkout counters.

Outer packaging is labelled with any of the GS1-128, EAN-13 or ITF-14 bar codes. When GTIN-13 is used in the bar codes ITF-14 or GS1-128, GTIN-13 should start with a zero.

For bar code labelling of pallets, a standardised pallet label should be used, GS1 Logistic Label (GS1 Pallet Label). The pallet label bar code should follow the bar code format GS1-128. More information about pallet labels is provided below and a complete description is available at **www.gs1.org** (or your national GS1 website).

Bar code printing quality

The bar code should be legible until the item is no longer offered at retail level or has expired, according to the item's "best-before date". Printing quality of the bar code must be equal to the "Overall Symbol Grade C" quality specified in ISO 154 16. This means that a minimum of "Overall Symbol Grade B" should be achievable when printing.

In many cases, printing directly on outer packaging results in poor legibility, particularly if printing is done on brown corrugated packaging. Adhesive labels are preferable to printing directly on brown corrugated packaging.

Bar code labelling of consumer packages

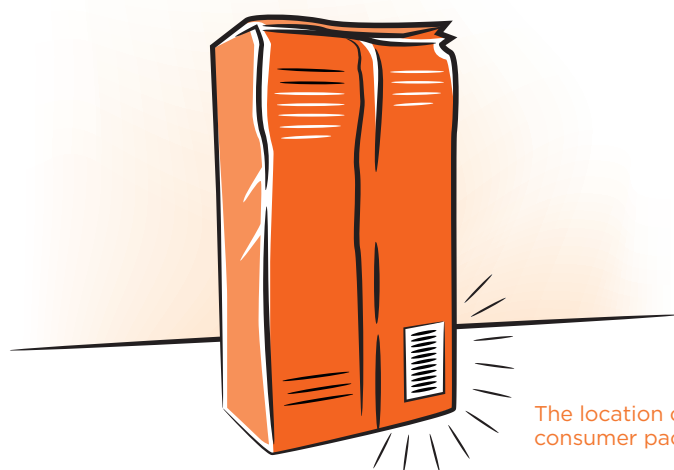Consumer packages are labelled with bar code EAN-13 or EAN-8. The bar code on consumer packages should be simple and quick to read at the checkout or point of sale. Bar code quality depends upon the colour of lines and backgrounds, line width, the size of the bar code, height and light margins. Read more at **www.gs1.org** (or your national GS1 website.)

Example of bar code labelling on consumer packages EAN-13.

Bar code label location on the consumer package

- A label with a bar code is placed at least 8 mm from the edge of the package.
- Labels with bar codes must never be placed around corners, over joints, perforations or seals.
- The bar code is placed on a smooth surface.
- The bar code must not be placed below the joints on transparent film.
- The bar code must not be placed on the bottom of the package.
- The bar code is placed standing, like a ladder, on round cans or other cylindrical shaped packages with diameters of less than 120 mm.
- Each package must have only one visible bar code (including multi packs).

The location of the bar code on the consumer package is important.

Bar code labelling of outer packaging

The outer package may be labelled with any of the EAN-13, ITF-14 or GS1-128 bar codes according to the GS1 standard. Choose bar code depending on area of use and the amount of information that needs to be transferred via the bar code. The Swedish FMCG industry recommends that outer packaging be labelled with GS1-128, as this bar code can contain more information than EAN-13 and ITF-14, such as batch number, best-before date or weight. Read more about labelling of outer packaging at **www.gs1.org** (or your national GS1 website).

An example of outer package labelling (GS1-128).

Name of the manufacturer
Logo etc.

PRODUCT NAME

GTIN	Supplier´s art. no.
17350053850016	5001
Best before	Batch no.
12. 12. 2010	12345

(01)17350053850016(15)101212(10)12345

Bar code label location on the outer package

- There must be a bar code label or a bar code printed directly on the package. Labelling on at least one side is recommended but labelling on more than one side is preferred. In case of one-sided labelling, the outer packages should be placed on the pallet so that the label is on the same side as one of the pallet labels.

- The bar code must not be placed on the bottom of the package.

- The bar code must be placed so that the lower edges of the lines are 32 mm +/– 3 mm from the bottom of the package. For ITF-14, the bottom edge of the frame around the bar code should be 27.2 mm above the bottom of the package. The frame is 4.8 mm. The distance between the side of the package and the bar code should be at least 19 mm.

- When labelling returnable crates, the labels used must be approved by Svenska Retursystem to facilitate the removal and cleaning of the returnable crates. Labels must be attached to the uneven surface of the returnable crate. Find out more at **www.svenskaretursystem.se**

- Maintain and clean printing heads and printers in the production environment to ensure retention of good printing quality.

- Avoid printing the bar code on brown corrugated packaging as it results in poor legibility. Adhesive labels are preferred.

Package type	GS1 item number	Bar code
Consumer package	GTIN-13 GTIN-8 GTIN-12	EAN-13 EAN-8 UPCA UPCE
Outer packages	GTIN-13 GTIN-14	EAN-13, ITF-14, GS1-128 ITF-14, GS1-128
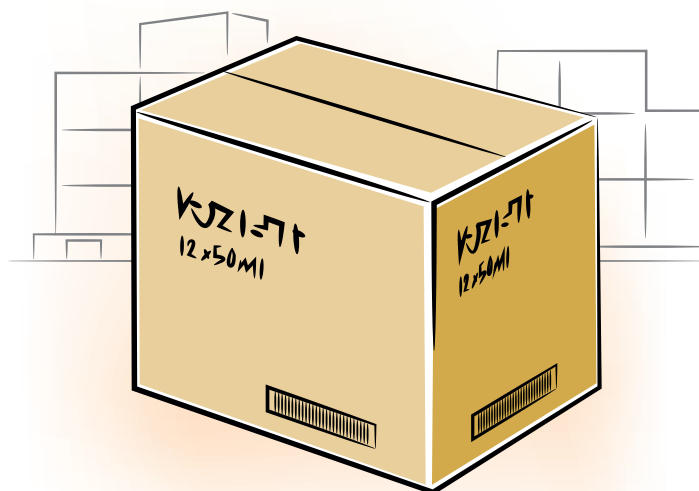
Outer packages with labelling on two sides.

Pallet label

Pallets must be labelled with GS1 Logistic Label (Pallet Label). The pallet label is necessary for identification of the pallet in your own handling at the warehouse, upon receipt of goods and for logistics management. The bar code on the pallet label must follow the GS1-128 bar code format. Correct pallet labelling generates faster and more efficient logistics handling as well as traceability throughout the value chain. When information in the pallet label corresponds to the physical item and the supplier labels the pallet in the correct manner, it is not necessary for the wholesaler to re-label the goods during this stage of the supply chain. Logistics handling is more efficient and goods are available more quickly in the warehouse. The quality of delivery to the store increases as manual handling and the risk of errors decrease. This in turn provides improved delivery capacity to the store. The risk of goods selling out on the store shelf is decreased and product availability to the end consumer increases.

Testmejeriet AB

Getost 10x200 g

SSCC: **373500720300000035**
CONTENT: 07350072030010
COUNT: 48
BEST BEFORE: 08.03.19
BATCH: 45499

(02) 0 7350072 03001 0 (15) 190308 (37) 48

(00) 3 7350072 030000003 5 (10) 45499

Example of GS1 Logistic label.

FROM
Testmejeriet AB
Västra Järnvägsgatan 15
SE-111 91 STOCKHOLM
Sweden
TO
Testkund A/S
Sverigevejen 3
DK-6000 KOLDING
Denmark

Sender ref   Kalle Andersson
Receiver ref   Sören Madsen Phone +4540321321
Gross weight (kg)   115

SSCC: **373500720300000035**

SHIP TO POST: 2086000

GSIN: 7350072030000 04452

(421) 2086000 (402) 73500720300004452

(00) 3 7350072 030000003 5

Example of shipping label.

The pallet label must not be confused with the shipping label. The shipping label includes delivery information such as address, haulage company information and SSCC (Serial Shipping Container Code, GS1 case number). If a shipping label is used together with a pallet label, the same SSCC must always be used. Read more about shipping labels at **www.gs1.org** (or your national website).
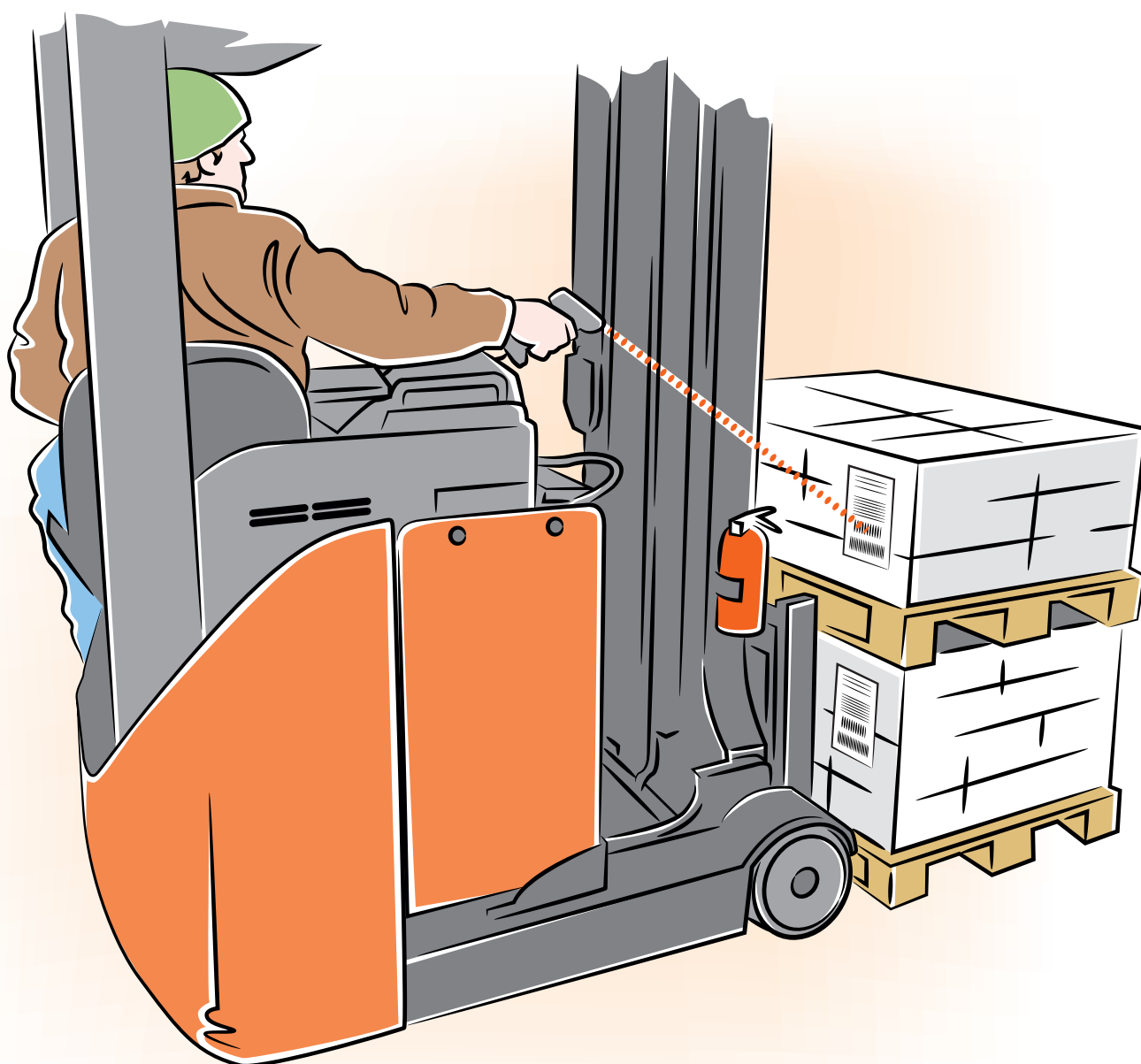
Label placement of GS1 pallet label on pallet

- The pallet must be labelled on two connected sides – one short side and the long side to its right.
- The bar codes on the label should be at least 400 mm, and at most 800 mm, from the bottom.
- The label should be placed as high as possible within this range, but if required, leave space for the shipping label above the pallet label.
- The pallet label should be placed on the outside of the plastic wrapping. However. If the pallets are mixed, the pallet label should be placed on top of the load under the plastic wrapping.
- No label must be closer than 50 mm to the edge of the pallet.

The pallet must be labelled on two connected sides.

The shipping label must be above the pallet label.

Pallet label.
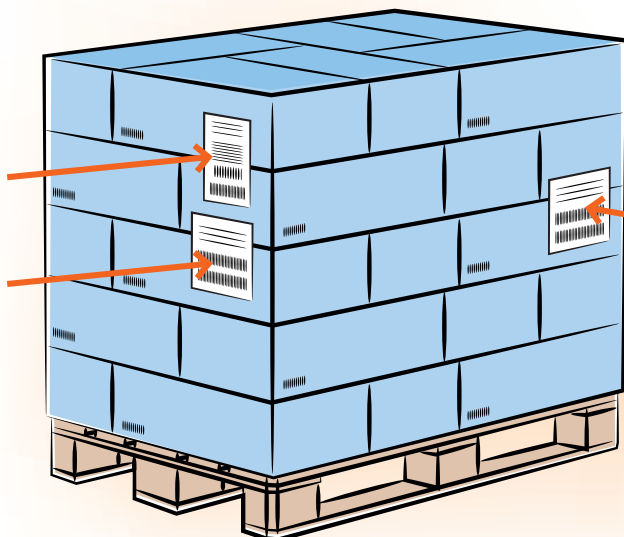
The pallet label must be at least 400 mm, and at most 800 mm, from the bottom.

Multi-unit package	GTIN-13 GTIN-14	
Pallet	GTIN-13 GTIN-14	GS1 Pallet label GS1 Pallet label

Important to keep in mind

✓ Select the bar code depending on area of use and the amount of information that needs to be transferred via the bar code.

✓ GS1-128 provides the opportunity to add additional information such as batch number, best-before date and weight.

✓ The legibility of the bar code must be at least "Overall Symbol Grade C".

✓ Conduct continuous maintenance of printers and equipment to ensure good printing quality is retained.

✓ The bar code must be placed to facilitate reading by recipients and at checkouts or points of sale.

✓ Avoid printing the bar code on brown corrugated packaging as it leads to poor legibility. Adhesive labels are preferred.

✓ Placement of the GS1 Logistic Label (pallet label) is important because many customers use automated warehouses that are adapted to read the label according to the GS1 standard (at least 400 mm, and at most 800 mm, from the bottom).

✓ Remember to deliver single-batch pallets as far as possible. If multiple batches of the same product are mixed on one pallet, "Dummy batch" handling is recommended if the ordered batches cannot be specified in the dispatch advice (DESADV).

Restaurants and Industrial Catering

In many respects, packages in the restaurant and institutional catering sector are similar to those in the FMCG industry. However, there are differences that must be addressed in order to create a comprehensive common packaging guide.

The difference is mainly with respect to the appearance of orderable units and pallet con- figuration. It is also important to note there are different names used to refer to package recipients, in the FMCG industry, a store or possibly a consumer is the final destination, while in the restaurant and industrial catering sector, the term end-user is used (such as industrial catering, restaurant).

Item Information

Supporting documents with item information for Movement Certificates are now widely coordinated between the Restaurant and Industrial Catering sector and the FMCG industry. Read more about **Item information**, part I chapter one.

The package

The restaurant and industrial catering sector uses the names primary (consumer package) and secondary package, which are often the same orderable unit. Usually the inner package hierarchy is missing, as they are not normally sold in retail stores.

The outer package (secondary package) is also used by the FMCG industry and refers to the package that is normally packed on pallets. The outer package is the orderable unit.

In the restaurants and industrial catering sector there is no rule regarding the outer package exceeding a weight of 15 kg; for example, bag-in-box milk packages (20 kg) and flour sacks (20–30 kg).
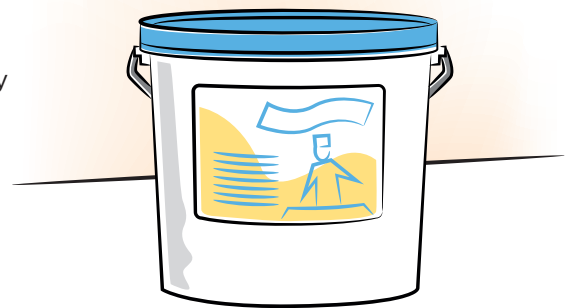
Read more about **packages**, part I of chapters two and three. See also part III **Durable packaging** to ensure good package quality.

Examples of orderable units in the Restaurants and Industrial Catering sector.
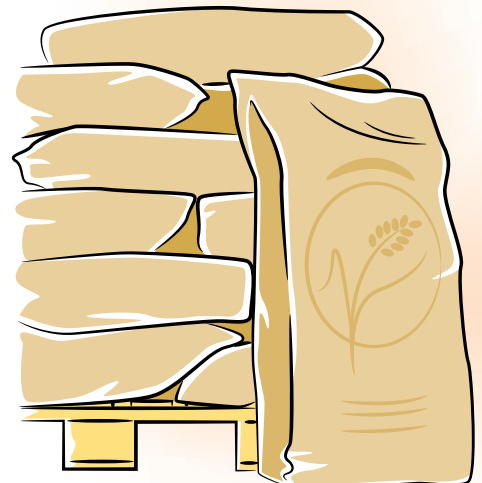
Pallet

The height of the pallet varies greatly in the restaurant and industrial catering sector due to extensive importing and the 1250 mm as a guideline for pallet height is not custo- mary outside Scandinavia. Many pallets are higher – gener- ally never lower.

Since many outer packages are designed so that palleti- sing produces pallets not able to be double stacked, this occurs only to a limited extent.

One example is that of buckets, as in the image above. Fragility of the packages may be another reason, for example sacks of flour. See examples below. Read more about **Pallets**, part I chapter four.

At the distribution centre, goods from other producers are loaded toghether. Roller containers or loading pallets are also used within the restaurant and industrial catering sector, while milkcages are often used for dairy products (see picture).

Labelling

Outer package labelling is important from a traceability perspective and for selection in the warehouse, in which case GS1 regulations apply. The same applies to pallet labelling. Read more about **Labelling**, part I chapter six.

The Modular System

The modular system is an aid to the development of new packages that must be effective in the supply chain, and is primarily intended for use by supplier product development departments. Read more about **The Modular System**, part I chapter five.

Important to keep in mind

✔ Package size and appearance often entails deviation from the FMCG industry's recommendations. This is due to heavier packages and higher pallet heights etc.

✔ Package recipient is the end customer in the restaurant and industrial catering sector, where the secondary package is often the smallest unit in the item hierarchy.

Requirements for outer packaging

The goods should travel safely all the way to the store. This requires packages that work throughout the whole logistics chain, so that the supply flow can happen quickly and cost effectively. This guide contains joint industry recommendations with detailed requirements for outer packaging.

Important to keep in mind

Module adaptation for outer packan important consideration development of new products, facilitate the degree of pallets and roller containers obtain an optimised supply. See part I, chapter five, **Modular System**.

The weight of the outerpackage must not exceed 15 kg.

Returnable crates from Svenska Retursystem should, if possible, ordinary retail packages, regard to perishables as well as fruit and vegetables.

Opening instructions should be aging is included in the packages if it is not in the already apparent on the package. This is to as to how should be opened. This filling of makes it easier to unpack the goods and to with the right side up, which may chain, also contribute to reducing crusing during handling and transportation.

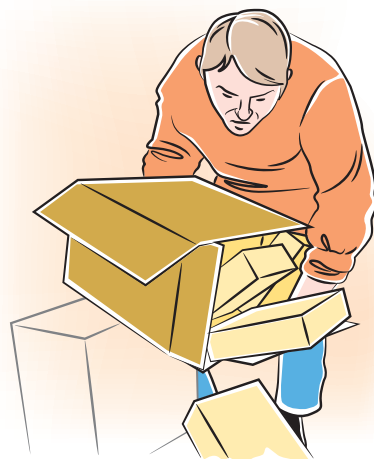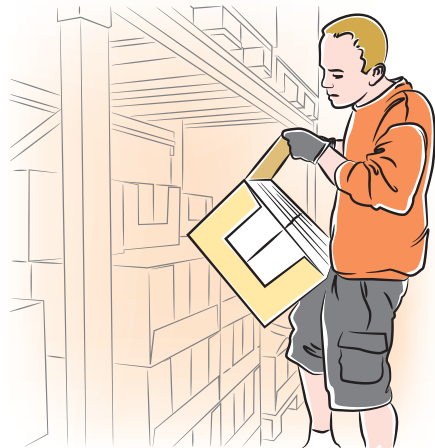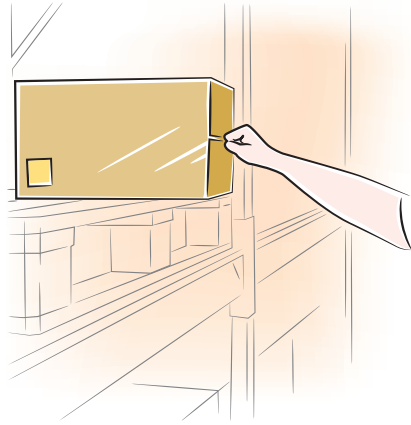**Punched handles** and holes in the outer package facilitate ergonomic handling.

The whole way from the producer replace to the factory, outer packaging must with protect the product.

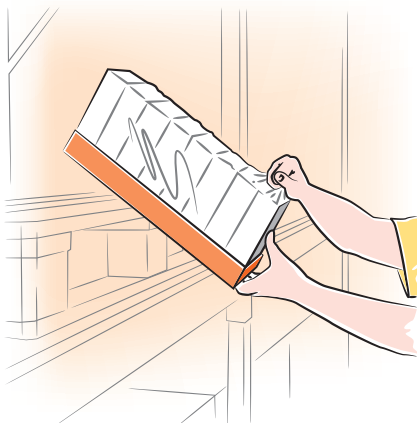# Outer packaging should be tough enough to cope with...

Being lifted by the lid

✔

✘

Being pulled by the tab

✔

✘

### Being lifted or pulled by the plastic

✔

✘

Common errors to avoid

Poor degree of filling

Remember: Each outer package should have a degree of filling that is as high as possible so that the consumer package may contribute to stability and strength, and help reduce environmental impact.

Risk: In case of a poor degree of filling, the outer package will have poorer compressive strength, which can lead to crushed and deformed outer packages when pallets are stacked on top of one another. An outer package with a poor degree of filling also occupies more space during transportation, which leads to an increased transportation requirement and increased costs.
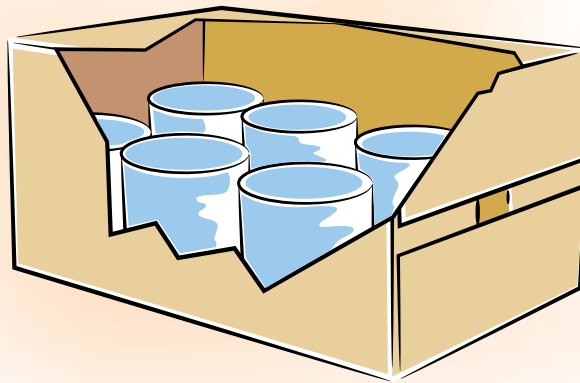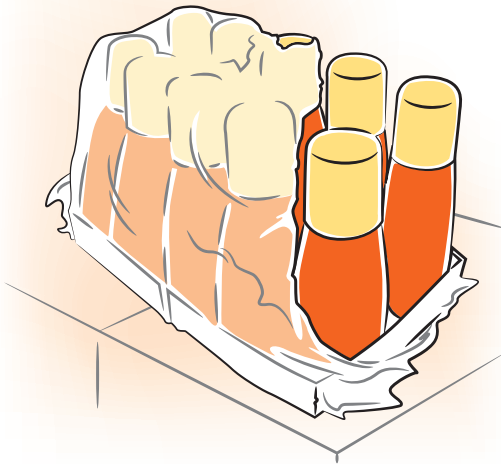

Weak perforation

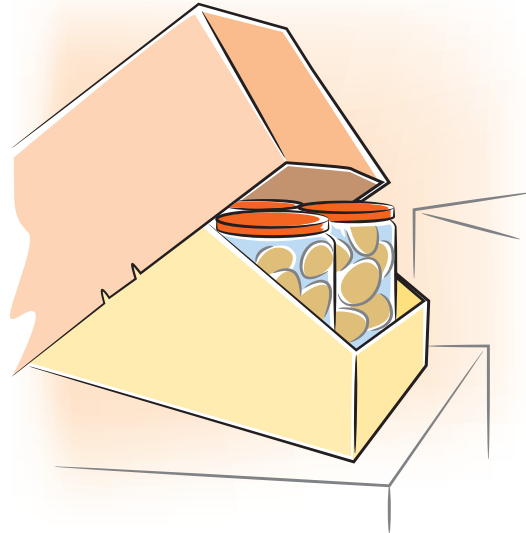**Remember:** If the outer package is perforated, the perforation must be able to cope with the strain involved with transportation to the store. It should be able to withstand selection, storage and the pressure of double-stacked pallets.

Risk: Each perforation makes the outer package weaker. If the perforation is too weak, the outer package may rupture and the consumer packages will be damaged.

Loose lids

Remember: Lids must always be secured on outer packages with glue, tape or other means of securing.

Risk: If the lid is loose, the consumer package may fall out and be damaged.

Defective shrink-wrapping

Remember: When wrapping shrink-wrap over the outer package, the purpose of the shrink-wrap is to protect the consumer packages from impact and ensure that the consumer packages do not fall out of the outer package.

Risk: Excess shrink-wrap longer than 5 mm may pose the risk of the outer package becoming caught and getting stuck during transportation. It is especially important to consider that the product must be able to withstand being handled in an automated process flow. When wrapping with shrink-wrap, it is important to verify that the design of the consumer package does not contribute to an unstable outer package.
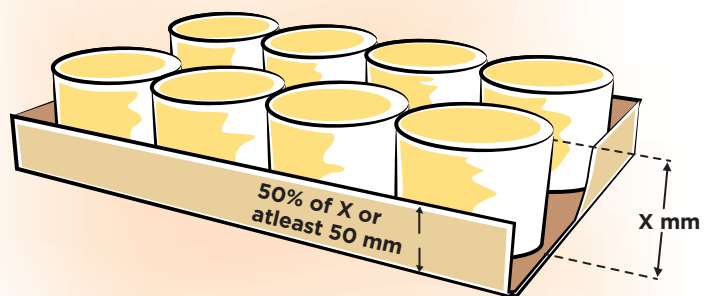
Edge of tray too low

Remember: An outer package designed as a tray without lid or shrink-wrap should have a tray edge that is equivalent to half the height of the con- sumer package or at least 50 mm. It is especially important to consider that the product must be able to withstand being handled in an automated process.
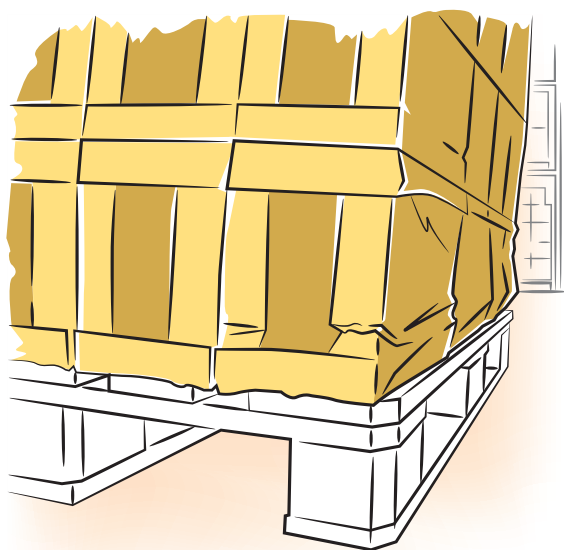
Risk: If the tray edge or the tab on the short side is too low, the consumer packages may fall out of the outer package. This is especially applicable to dry goods and frozen goods, not to returnable crates.

50% of X or atleast 50 mm

X mm

Substandard cardboard

Remember: The quality of corrugated cardboard used for the outer package must be adapted to suit the shape and the weight of the product, and any tray/bottom must be stiff and of good quality.

Risk: If poor quality corrugated cardboard is used, the outer packages may be deformed when double stacking. If the quality is poor, consumer packages may fall out of the tray after the lid/plastic has been removed.

- -

Unprotected products

Remember: The outer package must be constructed in such a way that it protects the consumer package all the way to the store. Therefore, it must always be fitted with a lid or shrink-wrap so that the consumer packages are held in place.

Risk: Without sufficient protection, the consumer packages may fall out during handling and risk being damaged by other products when loaded together on roller containers and pallets.

- -
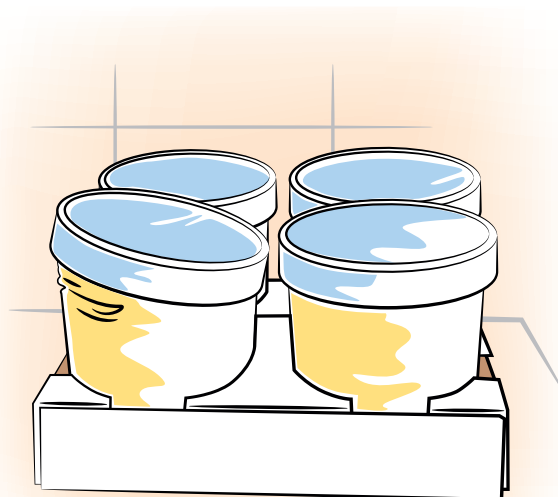
Poor module-adaptation of outer packages

Remember: The dimensions of the outer packages should be module-adapted.
See part I in chapter five, The Modular System.

Risk: Poor module adaptation leads to a poor degree of filling of roller containers
and pallets, which in turn results in more expensive transportation, handling pro-
blems at the logistics stage and greater environmental impact.
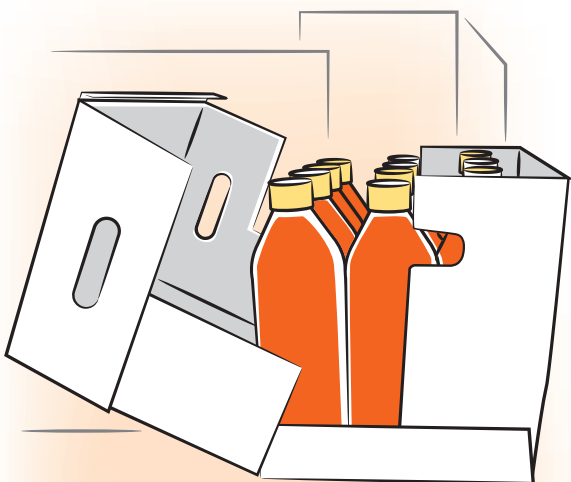
Glue leakage

Remember: Both the gluing and the corrugated
cardboard must be able to withstand normal
handling of the outer package. The strength of
the gluing and corrugated cardboard at the
point of gluing must be tested under actual
storage conditions for at least 10 days.

Risk: Glue leakage is the most common pro-
blem with regard to deficiencies in outer packa-
ging. It may only take one spot of glue to leak
during handling for the construction to rupture
and result in crushing and repacking at the
logistics stage.

How to test glue strength

Glue leakage – the most common defect!

The outer package must be able to hold all the way to the store. The strength of the glued tabs play a crucial role in how well the package manages this. In fact, glue leakage is the single most common reason for the rupturing of packages.

Here we explain how to measure the glue strength, the equipment used for measuring and the quality requirements.
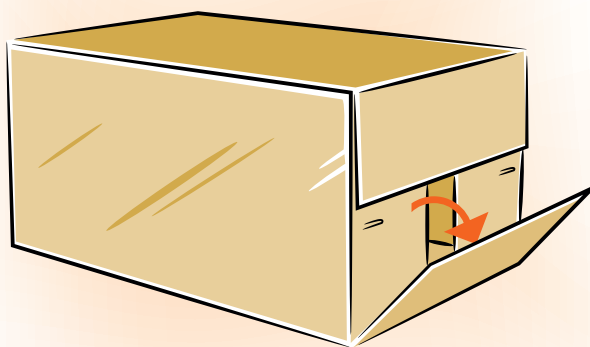

Package with glue leakage.

What you need:

– **Dynamometer**
– **L-shaped hitch block**

The design of the hitch block
Please note that only height (**A**) and width (**B**) on the part of the hitch block behind the tab is measured; the other measurements will not affect the result. The length of the hitch block must not be more than 100 mm for the sake of stability.

Exceptions to hitch block measurements may be made in terms of height (**A**) in the event package dimensions do not allow the use of standard height.


A 50 mm

B
25 mm
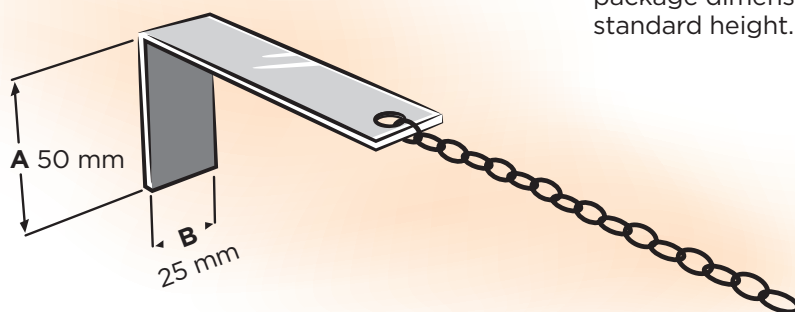
How to measure

To measure the strength of a glued tab, measure at the following points:

– **20 mm towards the centre for each glue point**
– **the centre of the tab**

The L-shaped hitch block is placed behind the tab at each measuring point. The point is subject to pulling until the glue or the cardboard leaks/ruptures. The value shown on the dynamometer at the time of rupture indicates the load the glue point is able to handle.
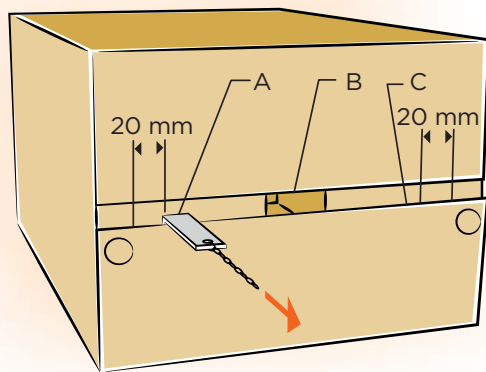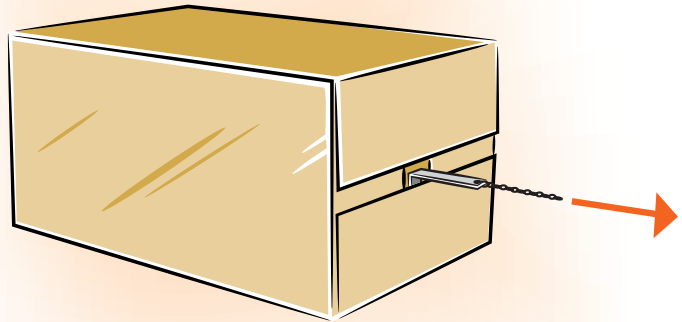
Where should you measure?
In the example to the left, there are two glue points on each side (circles). Measuring point **A** is shifted 20 mm towards the centre of the edge of the glue point. Measuring point **B** is in the middle of the tab and measuring point **C** is placed 20 mm towards the centre from the edge of the second glue point. In cases where there are one or more glue points in the middle, the pulling tool must be placed 20 mm on either side of these.

Quality requirements for glued tabs

All tabs on an outer package should, 3 months after the production date, be able to withstand a pull of at least 44 Nm in the middle (**B**) and 22 Nm on the sides (**A**, **C**) without the glue leaking or the cardboard rupturing.
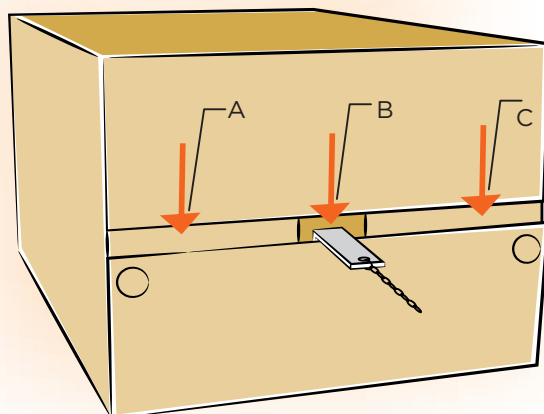
Packaging for automation

For products that are intended to go through an automated process, there are specific quality requirements that should be taken into consideration. In this section, we address these quality requirements. Remember we have previously described quality requirements that applies to both manual and automated processes.

Ratio

Ratio is a simple way to determine the likelihood of an outer package tipping over. The requirement is for all packages to have a ratio value of no more than 1.5.
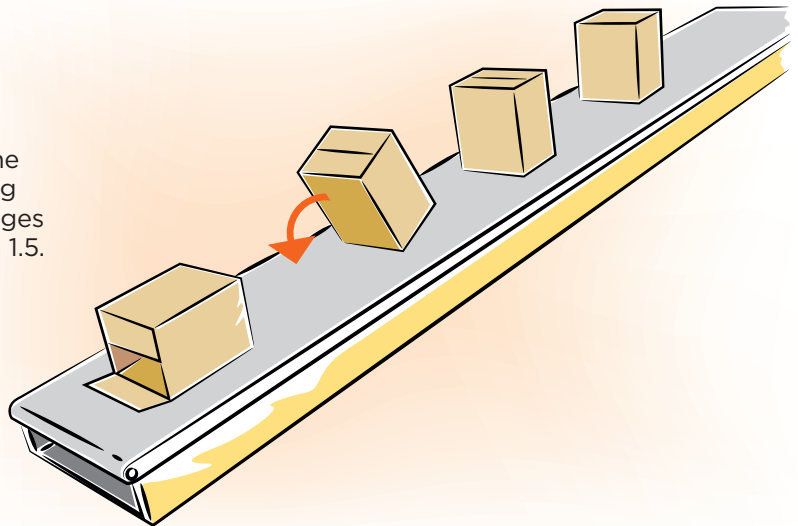
The following calculation is used:

$$(h/l) \geq 1.5 \leq (h/b)$$

The highest values of (height divided by length) and (height divided by width) may not exceed 1.5.

Example
Crate dimensions: 450x300x250
(HeightxWidthxLength)

Ratio calculation
Maximum value ((450/300) (450/250))
Maximum value ((1.5)(1.8))
Maximum value = Ratio = 1.8

This crate has a ratio of 1.8 and is therefore not suitable for an automated process.

Flat bottom

Remember: The underside/bottom of an outer package should be flat. For example, an envelope bottom is not classified as flat. There must not be any plastic protrusions (excess shrink-wrap) underneath. Also check to make sure there are no deformations on the first layer closest to the pallet when the pallet is packed at production. Deformations may be caused by substandard corrugated cardboard, non-modular adapted crate dimensions, or a combination of these.

Risk: An uneven underside/bottom may result in stoppages and damage in an automated product flow.
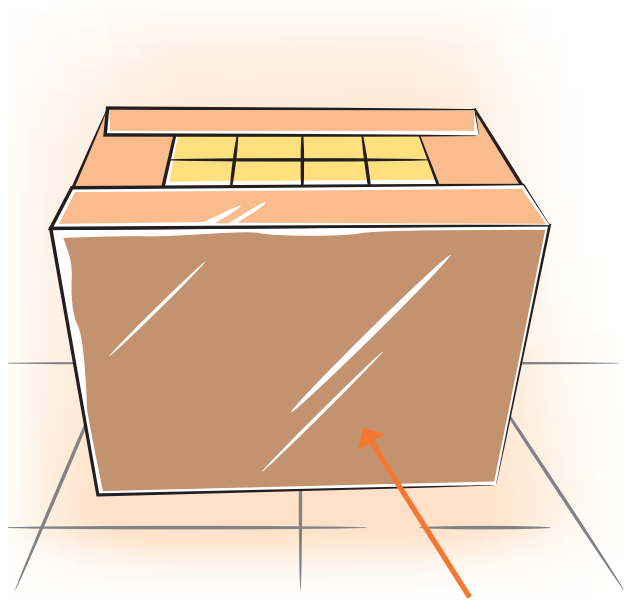
Example of packages with flat bottoms that may be handled in an automated process.
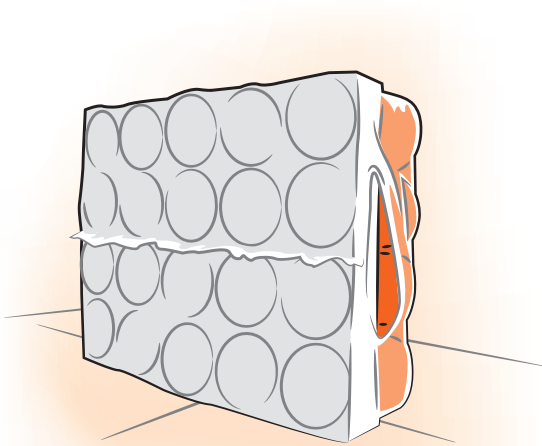
Example of packages with plastic protrusions and unevenness at the bottom of the corrugated tray. These packages may not be handled in an automated process.
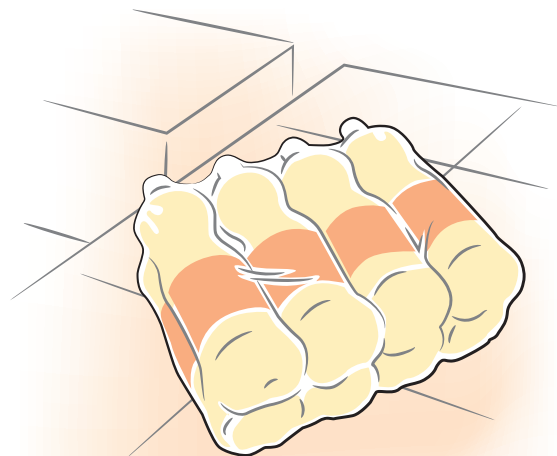
Example of packages without a tray, which results in an uneven bottom.

Recommendations for pallets

Good quality pallets and pallet configurations are required in order to achieve a fast and sustainable supply chain. The most important aspects that must be considered are listed below:

Full-size pallets

EURO full-size pallet

Full-size pallet from Svenska Retursystem

LPR full-size pallet

CHEP full-size pallet

Important to keep in mind

Standard height of the pallet is a maximum of 1250 mm, including the pallet at the bottom.

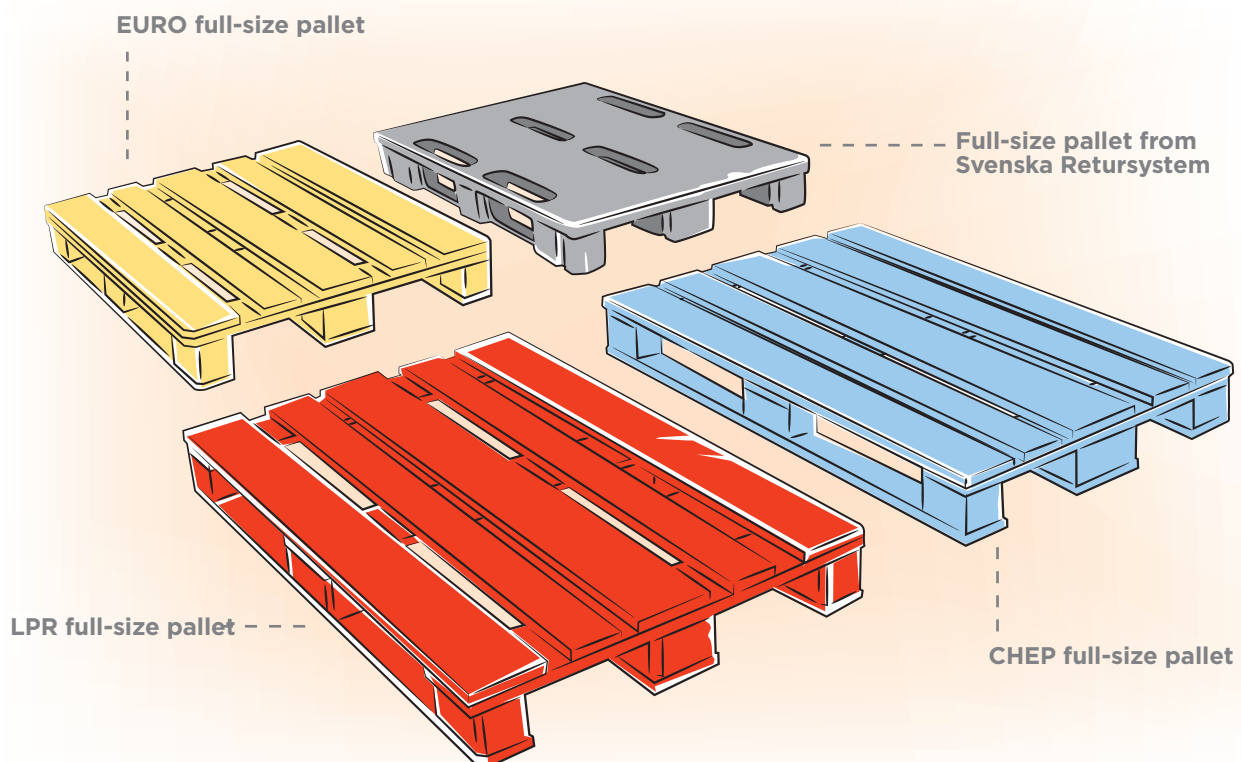**Approved pallets** for use in the retail industry (FMCG) are EURO pallets, CHEP pallets, LPR pallets and returnable pallets from Svenska Retursystem. All of them are 800x1200 mm in size.

Double stacking. The pallet should be well wrapped and packed in such a way that two pallets may easily be double stacked without the outer package being damaged.

Common errors to avoid

Not interlocking the pallet layers

Remember: To obtain a stable pallet configuration for a larger number of smaller outer packages on a pallet, it is necessary to interlock the layers. If the modular system is followed, liners must be used between the layers for stability of modules with dimensions of 150x400 mm or below.

Risk: Tower stacking of smaller outer packages often results in unstable pallets that collapse easily during handling and after unwrapping.
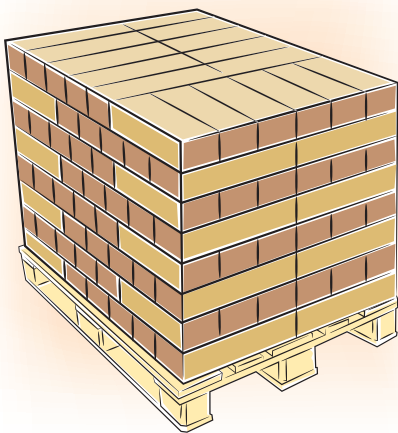
Pallets with interlocked layers.
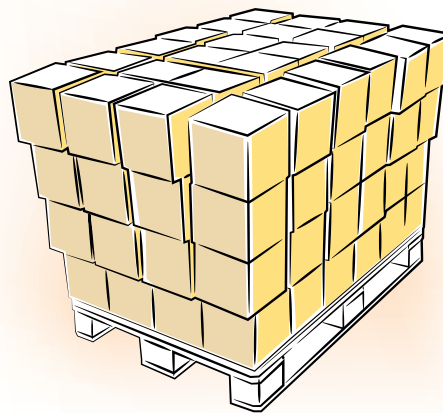
Example of tower stacked pallet.

The outer packaging is not adapted to the size of the pallet.
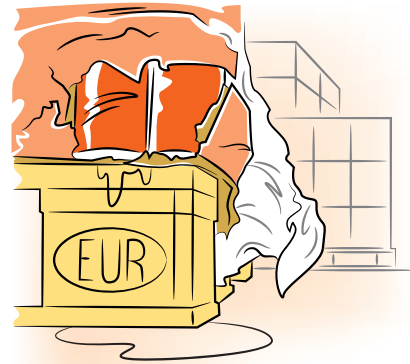
Crushing due to overhang.

Overhang on pallets

Remember: The wrapping of outer packages occupies space. It is therefore important to start with the actual dimensions when creating a pallet pattern to fit a pallet of 1200x800 mm in size.

Risk: If the pallet is over-dimensioned, overhang is created, which leads to damage during transportation. A pallet with overhang also results in handling problems at the warehouse.
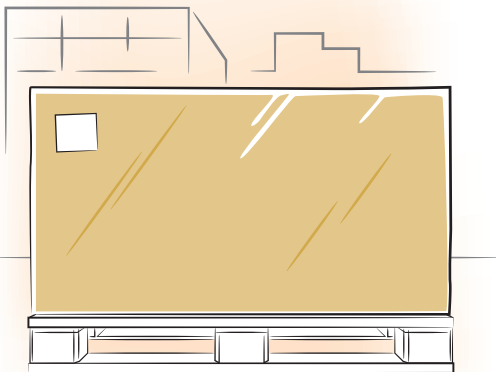
Example of pallet box.
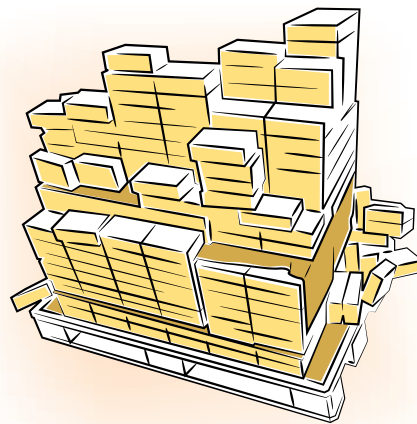
Example of products that should be handled in a pallet box.
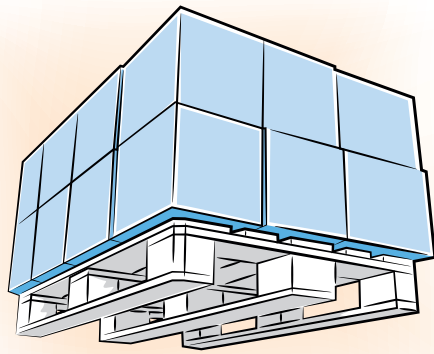
Fragile goods prone to damage

Remember: A pallet box is a good way of handling and protecting small and glossy types of packaging and is also more economical as there is no need to handle transport packages. A pallet box should not be used for anything other than full-size and half-size pallets if it is to be handled in an automated process.

Risk: Outer packages containing fragile products such as plastic wrap with flour, soil, etc. could easily be broken if a pallet box is not used for loading, delivery and unwrapping in the warehouse.
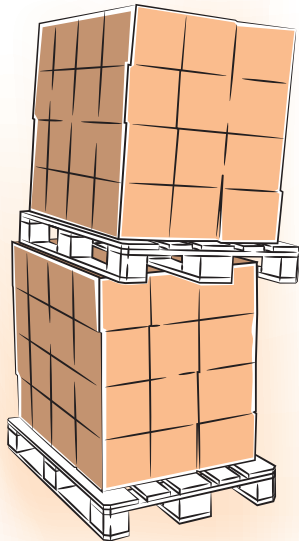
Unstable double stacking.

Poor degree of pallet filling

Remember: The degree of pallet filling must be high. Especially important is the short side along which the outer packages must reach the whole way from one edge to the other, i.e. 800 mm.

Risk: A poor degree of filling creates the risk of collapse during transportation and handling, as pallets may not be double-stacked.

Unnecessary wrapping

Remember: Use corner supports or straps for pallets that would otherwise have needed further wrapping/ plastic wrapping. This facilitates warehouse handling, saves money and is a more environmentally friendly alternative. Also remember that automated processes have specific requirements for liners. These should be made of corrugated cardboard, not be too thin and not have more than one liner per layer. If possible, use the liners that are separable by way of perforation. This facilitates order selection at the warehouse.

Risk: Remember not to use several liners per layer, since this cannot be handled in an automated process.
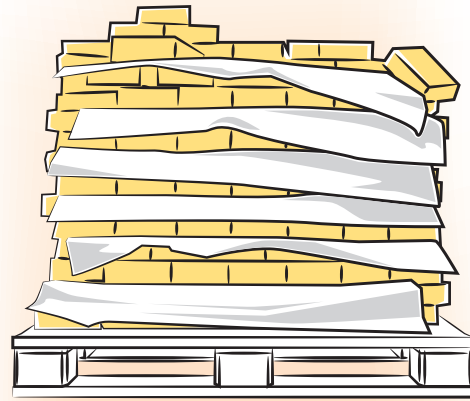
Too many liners on the pallet and also not divisible.
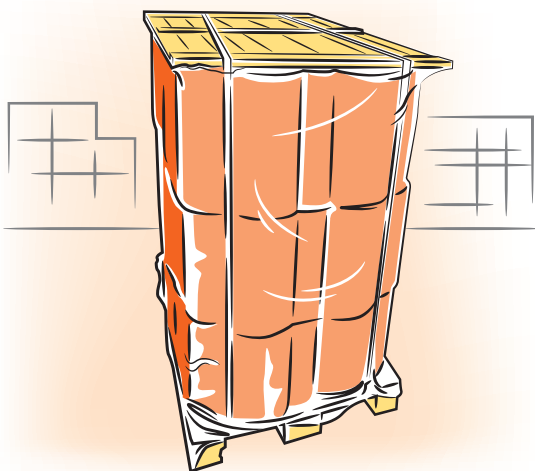
Bad example with steel strips and wooden collar.
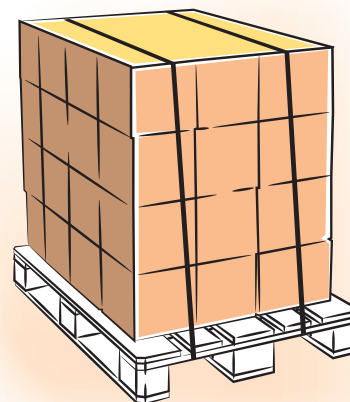
Good example without plastic, wrapped with plastic strips.

Mixed pallets

Remember: If mixed pallets are used when the client has not bought whole layers of items, the pallet must be mixed in such a way that there is no risk of damage or impact on the packages. It is recommended that whole layers of products are bought. In this case, there should be a pallet between the products. This means multiple layer pallets can be stacked together during transpor- tation or layer pallets or incomplete layer pallets used as top pallets during transport.

Risk: Mixed pallets create additional handling at the logistics stage, which results in a slower supply flow. In addition, with mixed pallets, there is a risk of impact to the outer packaging when several products are mixed together.
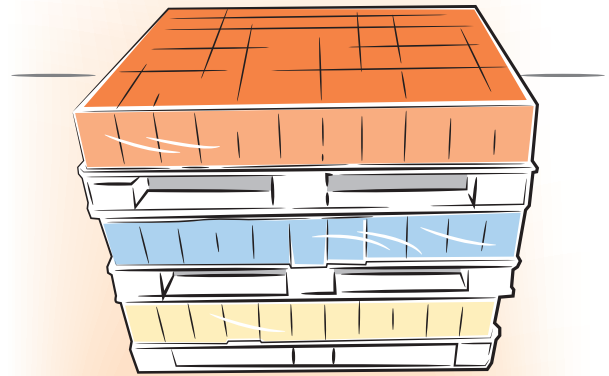
Good examples of unmixed layer pallets.

Half-size pallets
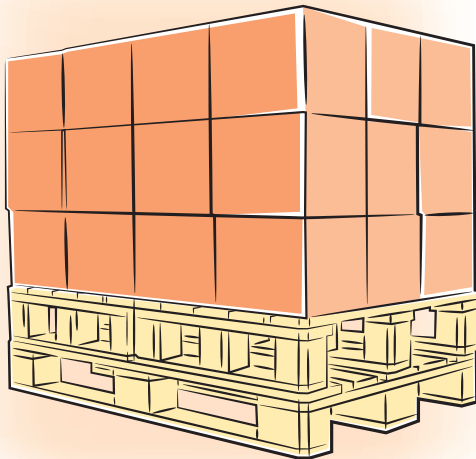
Height of half-size pallet including the full-size pallet at the bottom is 1250 mm maxin

CHEP half-size pallet

LPR half-size pallet

Half-size pallet from Svenska Retursystem
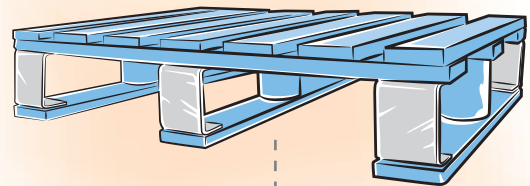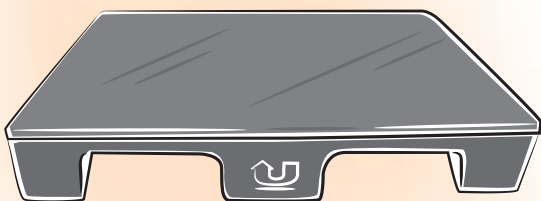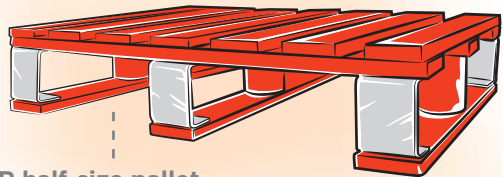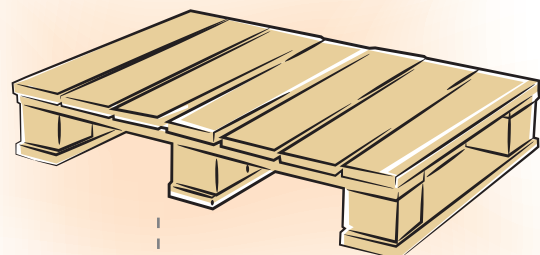
Wooden half-size pallet

Important to keep in mind

The height of the pallet must be a maximum of 1250 mm, including both the half-size pallet and the full-size pallet at the bottom.

The dimensions of the half-size pallet must be 600x800 mm.

Recommended pallet types are Wooden half-size pallet, CHEP half-size pallet, LPR half-size pallet and half-size pallet from Svenska Retursystem.

Common errors to avoid

Poor wrapping of half-size pallets

Remember: When planning half-size pallets, it is important that wrapping is done properly so that the pallet is stable.

Risk: If the boxes are heavy and glossy, these may slide off the pallet, resulting in collapse and damage.
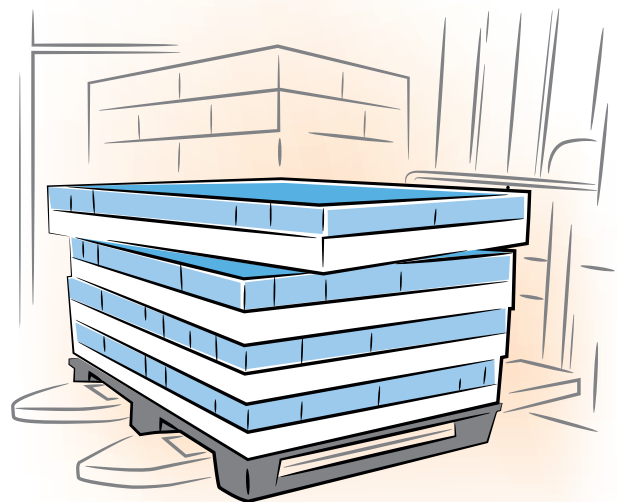
Example of half-size pallet with no wrapping.
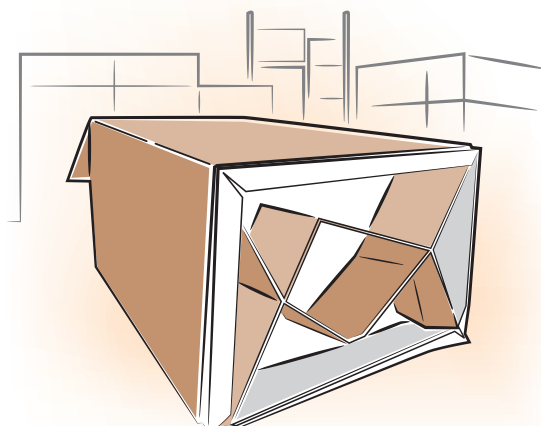
Half-size pallet configuration with a blind bottom that has tipped over.

Poor package construction

Remember: If a half-size pallet solution for a heavy product is packed with a blind bottom, it must be of high enough quality to be able to handle the load.

Risk: Blind bottoms raise the centre of gravity of the pallet, which causes problems with forklift handling. The pallet then becomes unstable and there is a risk that it will tip over.

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Recommendations for half-size pallets
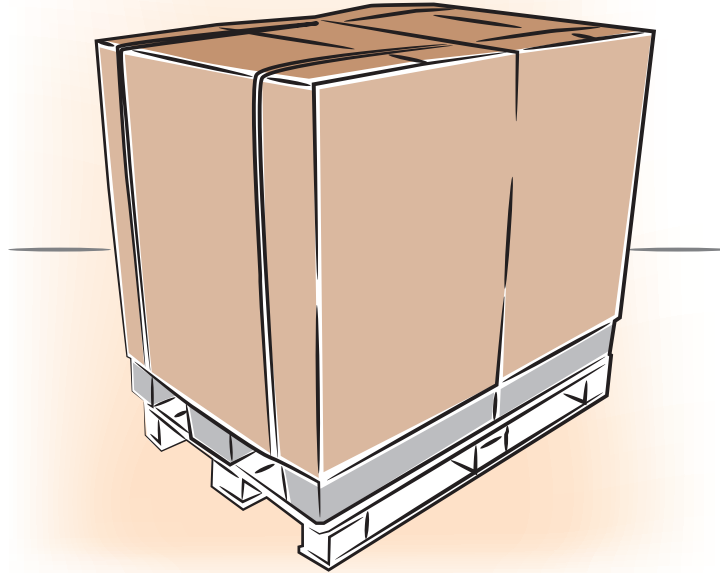
Good examples with cardboard covers.

Wrap the half-size pallet with cardboard covers

By using a cover of corrugated cardboard on the half-size pallet, the pallet becomes more stable and less likely to tip over. At the same time, the product is protected from impact. If possible, use as little extra wrapping/plastic as possible. If the solution is stable, it will be enough to use plastic straps and possibly corner supports. Also remember that the wrapping should be within the pallet dimensions of 600x800 mm. Do not over-dimension the pallet.

Pallets for automation

Plastic wrapping of pallet tunnel

Remember: The tunnels under the pallet must be free from plastic and there must not be any plastic hanging loose.

Risk: Pallet tunnels covered with plastic cannot be handled in an automated warehouse as they risk being rejected from the automated guide- way system. If pallets need to be re-layered, this results in a slower supply flow. Loose hanging plastic may cause a stoppage in an automated warehouse.
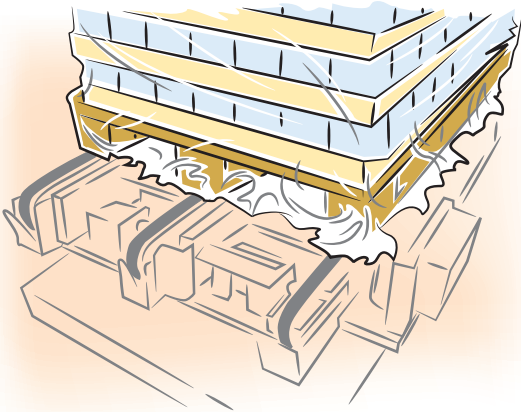
Examples of covered pallet tunnels.

Pallet quality

It is very important that the pallets maintain a high and even quality, i.e. class A. Very few types of damage to the pallet can be accepted. Recommended pallet types are EURO pallets, CHEP pallets and pallets from Svenska Retursystem.

For more information about pallets and pallet quality, see the links below:

www.svenskaretursystem.se
www.LPR.eu
www.chep.com
www.sis.se
www.dnvba.com
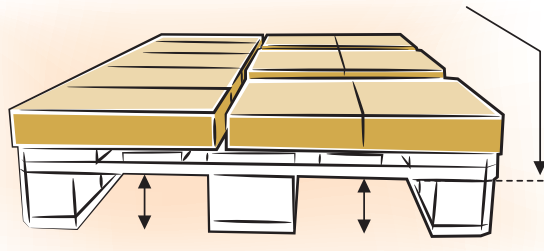
Plastic is not allowed in indicated areas.
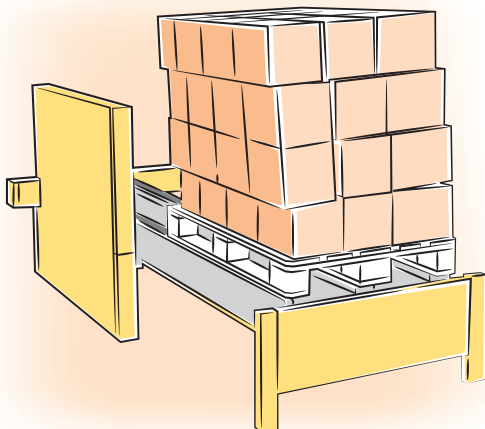
Example of an inclined pallet in an automated warehouse.

Overhang and inclination of pallets

Remember: Pallets should be constructed without overhang and without any inclination.

Risk: If the pallet does not keep to the dimensions, it may be rejected from the fixed guideway system in automated warehouses. Any such errors must be corrected manually, which is not always possible and leads to an inefficient and slow flow of goods.

Make your packaging recyclable

Increasing numbers of companies are perceiving both an environmental and economic value in using packaging that is simple to sort and recycle. A means of motivating producers (manufacturers, brand owners etc.) to produce packaging that is more resource-efficient, easier to recycle and that doesn't contain substances that are harmful to the environment has been in place since the mid-1990s, so-called producer responsibility. Consumers' increased environmental consciousness – over 90% separate their waste at source to help boost recycling – also entails higher requirements on producers plus opportunities to profile themselves.

Packaging that is complex, in design or material composition, makes the sorting and recycling process more difficult. The challenge is to optimise functionality and environmental benefit. If packaging contains too many different materials, it can be more difficult, or more or less impossible, to recycle.

A packaging design which enables recycling must be possible to sort and process in the facilities we engage and it must also subsequently be possible to sell to manufacturers which want to use it. The selections which have recycling potential were made based on the following decisions

In general

- Use homogeneous/mono material.
- Different types of material in the packaging should be simple to separate.
- Labels must be easy to remove (attachment with water-soluble adhesive helps).

Specifically for different materials:

Metal packaging

- Avoid composites of metal as it makes sorting more difficult (for example, cans with an aluminium layer).
- Avoid metal seals on packaging made from other materials that are not easy to separate.

Glass packaging

- Principally use standard colours: white, green or brown.
- Avoid porcelain and ceramics in combinations with glass, in, for example, patent or bottle stoppers and medallions that are stuck on.

Plastic packaging

- Choose a type of plastic with recycling potential. Types of plastic that are mainly used for packaging are LD polyethylene, polypropylene and HD polyethylene. For these, we have a technology for recycling, sufficient volume for effective sorting and a market to sell the recycled material.
- Do not use biodegradable plastics – we do not have a recycling system for these and mixing with the recycling fraction contaminates the material.
- Bio-based plastics are handled in the same way as oil-based plastics in the recycling process, but undermine the market for the recycled material.
- Avoid combinations of different plastic polymers.
- Avoid fillers that change the density of the plastic.
- Transparent plastics have the highest value as recycled material.
- If coloured plastic is used, avoid dark colours as they are hard to detect in our automated sorting and risk ending up in the residual fractions. Black, particularly the carbon black pigment, cannot be segregated.
- Avoid composites of polyolefins with PET as they separate poorly.
- Avoid metal seals as they are difficult to remove and can lead to the plastic having to be scrapped.
- Avoid foreign material on the labels. The same plastic in the label and the packaging facilitates sorting for recycling. Paper labels can lead to serious problems in the recycling, with fibres that can be transferred to the plastic.
- Glue labels sparingly with the correct adhesive (water-soluble adhesive or hot-melt adhesive are easiest to remove).

Paper packaging

- Do not use binding agents that are harmful to health or the environment, or colour pigments that contaminate recycled material.

Help the consumer to do the right thing

Recyclable packaging can be incorrectly sorted if the consumer does not know how it should be separated at source. Including a large number of materials creates uncertainty in the consumer. Facilitate separation at source through clear labelling. Clear information for the consumer on how the packaging should be recycled contributes to better recycling. FTI, the Swedish packaging and newspaper collection system, provides the following recommendations:

- Please use the same words and expressions in the sorting instructions printed on the packaging as those used at the collecting depots.
- Avoid terms such as hard plastic, iron, aluminium and corrugated cardboard, which can cause confusion. Today's recycling centres use the terms metal packaging, paper packaging (for all kinds of paper packaging), plastic packaging (for all kinds of plastic packaging, both hard and soft), glass packaging, coloured and clear separately.
- Make sure you provide information about recycling your packaging on your website. Consumer surveys have highlighted the need to have more information about recycling and what benefit recycling your packaging has. FTI can help with information to assist your customers in their decisions.

Important to keep in mind

✔ Select monomaterial.

✔ If used, make different materials simple to separate.

✔ Use adhesive that is water-soluble.

✔ Use seals in the same material as the packaging.

✔ Choose a type of plastic with recycling potential.

✔ Inform the consumer of how to sort the packaging.

LINK to FTI's website, **www.ftiab.se**

Glossary

Every industry has its own special words, expressions and abbreviations. This list includes some of the common ones used in the FMCG industry. The list does not claim to be exhaustive.

Admission	Goods that are brought into Sweden from another EU country.
Brim	Pallet liners for holding together drinks packages, etc.
Case	See selection case.
CHEP	Global pallet, container and crate pooling company.
COMPOSITES	Compound material.
Consumer packaging	The primary function of consumer packaging is to make the product accessible and at the same time protect and preserve its properties.
Consumer Unit	See consumer packaging.
CoP	Another name for consumer packaging.
C-pack	See consumer packaging.
Cross-docking	Handling at the DC/wholesaler where the goods from the supplier to a store order are not stored at the DC/wholesaler's location. The incoming delivery is directly divided into specific store orders or they arrive already divided and the delivery of goods is moved over (is cross-docked) to distribution cars.
Crushed	Broken, damaged
CU	Consumer Unit. See consumer packaging.
DC	Distribution Centre, Central Distribution.
Dispatch	Unit. See pallet.
Display packaging	Package used both to protect and display the product in the store.
Display pallet	A loading pallet approved by the Swedish FMCG industry with dimensions of 600x800 mm or 800x1200 mm with consumer or outer packages belonging to several different item numbers built for in-store display. A display pallet has one unique item number. Corresponds to the item information's basic configuration for secondary packages.
DLF	Grocery Manufacturers of Sweden.
Dolly	Trolley with four wheels for internal delivery of materials such as plastic crates.
DUN 14	Dispatch Unit Number. Now referred to as ITF-14 bar code and GTIN. EAN/UCC See GS1.
EANCOM	Description of GS1's selected parts by EDIFACT.
ECR	Efficient Consumer Response – working together to meet consumer demand better, faster and at a lower cost.
EDI	Electronic Data Interchange – computer-to-computer transmission of structured information between industry partners.
EDIFACT	EDI for Finance, Administration, Commerce and Transportation. A UN agreement regarding international standards and guidelines for the exchange of structured data.

EN	Europe Norm.
Exit	Goods that are sent out of Sweden to another EU country.
Export	Goods sent out of Sweden to a country outside the EU.
FMCG	Fast-moving consumer goods. Retail goods that have a short shelf life and are sold quickly and at relatively low cost. Often commonly referred to as "groceries".
FMCG industry	Fast-moving consumer goods industry. Often commonly referred to as "the grocery industry".
FTI	Swedish packaging and newspaper collection system.
Full-size pallet	See unmixed full-size pallet.
Groceries	See FMCG, fast-moving consumer goods.
GS1	A global organisation setting standards for the flow of information and goods, including identification, labelling and electronic commerce.
GTIN	Global Trade Item Number. GS1 item number formerly EAN item number.
Half-size pallet	A type of display pallet. See unmixed half-size pallet or display pallet.
Handling Unit	See multi-unit package.
HD polyethylene	High Density Polyethylene (HDPE) is a stiffer and harder plastic than LD polyethylene.
Import	Goods that are brought into Sweden from a country outside the EU.
Industry unit	See outer packages.
Inner packaging	Se consumer packaging.
ISO	International Organization for Standardization.
Item Information (formerly VCD)	Information from sellers to buyers about items, packages and pallet properties.
Krav-label	Sweden's best known eco-label for food, based on ecological grounds with particularly high standards of animal well-fare, health, social and environmental impact.
Layer pallet	Part (one or several layer laps) of an unmixed full-size pallet.
LD polyethylene	Polyethylene/ethylene plastic low density (soft plastic).
Load carrier	Devices specifically designed for carrying and keeping goods together during transportation and handling. For example, loading pallet, roller container and milk cage.
Loading pallet	Load carrier, e.g. full-size pallet in accordance with SIS standard SS-EN 13698-1.
Mixed pallet	A loading pallet with the dimensions 800x1200 mm approved by the Swedish FMCG industry with outer packages belonging to several different item numbers.
Mixed pallet	See display pallet.
Modular system	SS 84 70 02 standard developed by the FMCG industry for which dimensions of 600x400 mm are the base module.
Mono-material	Single material types.
Multi-pack	Consumer packaging holding together several consumer packages.
Multiple pack	See multi-pack.
Multi-unit package	Open cardboard box or plastic crate, which is used to hold together a number of outer packages that are difficult to stack on loading pallets.
Newton-metre	Is abbreviated to Nm 1 NM = 0.1 kg.
Normpack	A system for internal control on materials and articles intended for use in contact with food.

Order unit	The unit, for example item or weight, in which the store orders the product.
Origin labelling	Consumer information, such as where the product was grown or bred.
Outer packaging	Name of the package level that is normally the orderable unit.
Pallet	Loading pallet for packages (goods).
Pallet rack	Rack for pallets in warehouse.
Polypropylene	One of the most common thermoplastics.
POS	Point of Sale. The point at which the sale to the consumer is registered, for example, at a cash terminal or checkout.
POS data	Information about the consumer's purchase, which is registered in the store cash terminal or checkout (items, quantities, etc.).
Primary packaging	See consumer packaging.
Product certificate for FMCG, VCD	See item information.
Product weight	Each package has an individual weight.
PÖS	Acronym for pallet transfer system (PTS) in Sweden.
Ratio	Relation, quota, proportion.
RC	Roller container; see roller container.
Retail package	See outer package.
REPA	Directory for producer responsibility The packaging recycling system for the industry.
Restaurants and Industrial Catering	Restaurants and Industrial Catering.
Retail Ready	Pallets, trays, crates etc. Packaging (RRP).
Retursystem	See Svenska Retursystem.
RFID	Radio Frequency Identification. A technology that uses radio waves to keep track of where a certain product is at a given time.
Roller pallet	See roller container.
RP	Roller pallet; see roller container. Roller cage; see roller container. Roller container-industry standardised unit, which is used in the transportation of store-ordered goods from the distribution centre to the store.
Secondary packaging	See outer packaging.
Selection case	Used as a statistical unit for the unit that is delivered to the store.
Selection pallet	A delivery unit to a specific store, compiled by the wholesaler/DC. It is one of the Swedish FMCG industry-approved loading pallets of 800x1200 mm dimensions, which is loaded and store-labelled by the wholesaler/DC with outer packages belonging to several different item numbers for distribution to the store.
Shelf-ready packaging (SRP)	See retail-ready packaging.
Shipping label	The Swedish International Freight Association's label STE (standardised delivery label).
SIS	Swedish Standards Institute.
SKU	Stock Keeping Unit. May be used as another name for outer packaging.
S-Layer pallet	A Swedish FMCG industry-approved loading pallet with dimensions of 800x1200 mm, which is used for handling, storage and transportation of non-approved loading pallets.

SS	Swedish Standard.
SSCC	Serial Shipping Container Code. Unique identity for the delivery unit.
SSLF	The Swedish Food and Beverage Retailers' Association.
Store pack	One of the aggregated delivery units to a specific store, compiled by the supplier. May consist of a loading pallet with dimensions of 600x800 mm approved by the Swedish FMCG industry 800x1200 mm or an outer package (for example a return box) which is store-labelled by the supplier for distribution to stores (possibly via cross-docking at the wholesaler/DC).
Strict orientation	Outer packages are placed on the loading pallet so that the bar codes are facing towards the same direction as one of the two pallet labels.
SvDH	Swedish Food and Beverage Retailers Association (SvDH)
Svenska Retursystem	An organisation jointly owned by DLF and SvDH for plastic half-size pallets and returnable plastic crates.
Terminal	Another name for distribution centre.
Tertiary package	See pallet.
Traceability	The possibility to track and follow food, feed, food producing animals or substances intended or likely to be incorporated into a food product or a feed, through all stages. Traceability encompasses all stages of the production, processing and distribution chain.
Trade unit	Another name for outer packaging.
Transport-optimised pallet	Several pallets stacked one on top of another.
Transport packaging	See multi-unit packaging.
Unit goods	A product that is sold by the same weight and volume in all packages.
Unit Load	See pallet.
Unmixed full-size pallet	A loading pallet with dimensions of 800x1200 mm approved by the Swedish FMCG industry with a number of outer packages belonging to several different item numbers. Corresponds to the item information's basic configuration for tertiary packaging.
Unmixed half-size pallet	A type of display pallet. One of the loading pallets approved by the Swedish FMCG industry with dimensions of 600x800 mm and a number of outer packages belonging to the same item number. Is equivalent to the basic item configuration information for secondary packaging.
Validoo	Validoo is the name of a range of services, based on GS1-standards, and has been developed to improve quality and efficiency in the flow of information between suppliers and commercial and public sectors.
Wholesale package	See multi-unit package.

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Web addresses

CHEP	www.chep.com
DLF	www.dlf.se
ECR Europe	www.ecrnet.org
ECR Sweden	www.ecr.se
FTI	www.ftiab.se
GS1 Sweden	www.gs1.se
Packfors	www.intpack.se
LPR	www.lpr.eu
Svenska Retursystem	www.svenskaretursystem.se
SvDH	www.svensdagligvaruhandel.se, www.svdh.se
SIS	www.sis.se
Validoo	www.validoo.se

The ECR packaging guide is intended to provide help and support in the development of new packages. The guide deals with most aspects, including right item details, the modular system, labelling, packaging and pallets. Another important area highlighted is how packaging can contribute to a sustainable and efficient supply chain.

The packaging guide consists of four parts – Groceries (Part I), Restaurants & Industrial Catering (Part II), Sustainable Packaging (Part III) and Recyclable Packaging (Part IV).

In part III, Durable Packaging, there is information regarding the most common packaging errors and how these may be avoided. This part of the guide also describes what companies should consider when developing new packaging for handling in automated processes.

The packaging guide is produced in close collaboration between representatives of the FMCG industry. The initiator is ECR Sweden, whose principal representatives are DLF – Grocery Manufacturers of Sweden and SvDH – Swedish Food and Beverage Retailers' Association.

ALSO AVAILABLE ONLINE
http://www.ecr.se/forpackningsguiden

ECR

ECR – working together in order to meet the consumer's needs better, faster and at a lower cost.

ECR is used to coordinate the different aspects of the goods flow, from production to consumer. When retail and suppliers work together, unnecessary costs can be eliminated from the value chain.

This results in increased consumer benefits.